The Peabody Individual Achievement Tests (PIAT), Peabody Picture Vocabulary Test (PAVT), and the Draw-A-Person Test were administered on a pre - post basis for assessing changes in cognitive behavior resulting from program or project participation.

The PIAT tests provided information relative to mathematics, reading recognition, reading comprehension, spelling, general information, and a composite measurement. The PPVT test provides information relative to vocabulary skill, and the Draw-A-Person Test served as a developmental or artistic ability measure.

The results of the PIAT tests indicated that there was no significant differences between the groups in all areas when the project began (see Table 1). This was also true for the PPVT test results. The pilot group made significant gains from pre to post test in all areas except spelling (P<.01). The control made significant gains from pre to post test in only the area of spelling (P<.05). The pilot group, even though comparable to the control group on the pretest, scored significantly higher than the control group on the post test in mathematics (P<.01) and general information (P<.05). (See Table 1).

The changes in cognitive behavior when comparing the two groups was even more revealing. The change in behavior between pre and post tests for the pilot group was significantly greater than the change experienced by the control group in the areas of mathematics (P<.05), reading recognition, (P<.01), reading comprehension (P<.01), general information (P<.01), and composite measurement (P<.01). This was not true in the area of spelling; the changes experienced by the two groups were not significantly different at the .05 level of significance. (See Table 1).

The PPVT results indicated the two groups were not significantly different when the pilot program began or when the program ended. However, the pilot group experienced a significantly greater increase in vocabulary test performance than did the control group. (P<.01). The control group actually scored lower on the post test though it was not found to be significantly lower (P>.05). (See Table 1)

The results of the Draw-A-Person Test were somewhat startling. The control group had a significantly higher performance level (P<.01) on the pretest than did the pilot group. The groups were also significantly different when post test results were compared, but on the post test the pilot group performed significantly better than the control group (P<.05). The pilot group had made significant gains from pre test to post test (P<.01) but the control group had not. The result of these differences in gains (8.7 vs 1.2) also indicated that the pilot groups' change in performance was significantly better than the control groups' (P<.01). (See Table 1)

COGNITIVE MEAN COMPARISONS OF PILOT AND CONTROL GROUP TEST RESULTS ON PIAT, PPVT, AND DRAW-A-PERSON TEST

COGNITIVE AREA	PILOT GROUP (N = 31)	CONTROL GROUP (N = 29)	t-R
Mathematics	Pre M = 41.7	Pre M = 37.8	1.1
	s = 15.3	s = 9.7	
	Post M = 47.6	Post M = 39.3	3.1
	s = 11.6	s = 8.5	
	t-ratio 3.721**	t-ratio 1.083	
	change 5.9	change 1.5	2.1
Reading Recognition	Pre M = 39.3	Pre M = 41.0	.6
	s = 11.2	s = 10.0	
	Post M = 46.3	Post M = 42.2	1.2
	s = 15.3	s = 9.6	
	t-ratio 5.887**	t-ratio 1.933	
	change 7.0	change 1.2	4.3
Reading Comprehension	Pre M = 35.7	Pre M = 40.5	1.6
	s = 12.0	s = 10.1	
	Post M = 42.4	Post M = 39.9	.9
	s = 11.5	s = 9.3	
	t-ratio 5.297**	t-ratio .727	
	change 6.7	change -.6	4.7
Spelling	Pre M = 38.1	Pre M = 38.1	.0
	s = 11.4	s = 10.6	
	Post M = 40.8	Post M = 39.7	.4
	s = 10.9	s = 9.5	
	t-ratio 1.980	t-ratio 2.165*	
	change 2.7	change 1.6	.6
General Information	Pre M = 34.5	Pre M = 35.8	.3
	s = 16.0	s = 11.9	
	Post M 43.2	Post M = 36.9	2.0
	s = 12.4	s = 11.6	
	t-ratio 5.634**	t-ratio 1.191	
	change 8.7	change 1.1	4.2
Composite PIAT	Pre M = 188.7	Pre M = 192.6	.2
	s = 57.3	s = 49.3	
	Post M = 220.1	Post M = 197.0	1.3
	s = 54.4	s = 44.8	
	t-ratio 8.716**	t-ratio 1.754	
	change 31.4	change 4.4	6.0
Vocabulary PPVT	Pre M = 76.8	Pre M = 78.4	.5
	s = 11.0	s = 9.4	
	Post M = 81.7	Post M = 77.0	1.5
	s = 14.1	s = 8.9	
	t-ratio 3.426**	t-ratio 1.180	
	change 4.9	change -1.4	3.2
Draw-A-Person	(N = 32) Pre M = 19.2	Pre M = 23.4	2.8
	s = 5.9	s = 6.6	
	Post M = 27.9	Post M = 24.6	2.2
	s = 6.5	s = 4.9	
	t-ratio 6.010**	t-ratio 1.004	
	change 8.7	change 1.2	3.5

* Indicates significant difference between means at .05 level of significance
** Indicates significant difference between means at .01 level of significance

Conclusion: The program or project has been effective in fostering change in cognitive skills or performance levels in the areas of mathematics, reading recognition, reading comprehension, general information, composite achievement, vocabulary, and developmental or artistic ability.

Recommendation: It is recommended that consideration be given to modifying the cognitive testing program for the new project year. Since the composite achievement score on the PIAT and perhaps even the Draw-A-Person test scores do not seem to add any additional or meaningful information it would appear that they could be deleted from the future testing program. It is recommended that efforts be exerted to expand measurements in the cognitive areas to include such areas as science, mathematical concepts, mathematical applications, and perhaps even measurements in logical thinking as a cognitive skill. With the indicated success of the program in developing cognitive skills, efforts to determine just what cognitive skills can be improved by the activities and experiences provided by the program need to be exerted.

Objective 4: By May 30, 1976, identified students participating in a pilot program will show an improvement in creativity as measured by pre - post test results of creativity measures.

Three Torrance Tests, the Cummings Curiosity Test, and the Draw-A-Person Test (DAP) were administered on a pre - post basis for assessing changes in creativity or giftedness resulting from project or program participation.

The Torrance Tests included picture completion (I), free form (II), and lines and circles (III). A total or composite score of these three tests was also analyzed. The Cummings Curiosity Test was found to be correlated with the Torrance Test. This test consists of a picture such as an apple or several pictures which serve as stimuli. The student is asked to indicate questions raised in his mind about the picture. The DAP Test was found to correlate with the Torrance Tests as well as achievement. Thus, this was also used as an indicator of creativity or giftedness.

The DAP Test results were presented under objective 3 and, as presented, these test results indicate that the program was effective in producing changes in the pilot group which were significantly greater than control group changes. (See Table I). Thus, these results suggest that creativity is also fostered by the program. No additional discussion of the DAP Test results will be presented for objective 4.

The results of the Torrance Tests and also the Curiosity Test indicated that the pilot group made significant gains from pre to post test (P<.01) on all five tests. The control group made significant gains from pre to post test (P<.01) only on the Curiosity Test. (See Table II).

Test results in all five cases indicated that the pilot group made significantly greater gains between pre and post test (P<.01) than the control group. On the Torrance Test I (picture completion) the two groups were not significantly different

when the program began, but the pilot group scored significantly better than the control group on the post test (P<.01). This also resulted in significant differences in the groups' gains which was previously pointed out. (See Table II). On the remaining three Torrance Test means and also the Curiosity Test means, the control group performed significantly better than the pilot group at the time of the pretest. However, at the time the post tests were administered the pilot group performed significantly better than the control group in all four instances. On two of the Torrance Tests and also the composite score the control group decreased in performance, however, this decrease was not significant. (P>.05) (See Table II).

TABLE II

CREATIVITY ME; COMPARISONS OF
PILOT AND CONTROL GROUP TEST
RESULTS ON TORRANCE AND CURIOSITY TESTS

TEST	PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Torrance I Picture completion	Pre M = 20.5	Pre M = 20.8	.123
	s = 8.8	s = 10.1	
	Post M = 34.3	Post M = 21.3	3.677**
	t-ratio 4.432**	t-ratio .200	
	change 13.8	change .5	3.325**
Torrance II Free Form	Pre M = 56.9	Pre N = 71.0	2.650**
	s = 23.0	s = 18.2	
	Post M = 94.8	Post M = 67.0	3.931**
	s = 32.3	s = 21.2	
	t-ratio 8.280**	t-ratio 1.222	
	change 37.9	change -4.0	7.311**
Torrance III Lines & Circles	Pre M = 74.6	Pre M = 95.5	2.630*
	s = 34.4	s = 26.1	
	Post N =134.8	Post M = 88.6	3.934**
	s = 53.2	s = 35.6	
	t-ratio 7.348**	t-ratio .969	
	change 60.2	change -6.9	6.140**
Torrance Total I + II + III	Pre M =149.4	Pre M =187.4	2.923**
	s = 55.4	s = 44.9	
	Post M =259.6	Post M =176.6	4.411**
	s = 85.0	s = 58.0	
	t-ratio 9.989**	t-ratio 1.091	
	change 110.2	change -10.8	8.092**
Curiosity Test	Pre M = 12.2	Pre M = 21.5	2.021*
	s = 10.1	s = 23.8	
	Post M = 55.5	Post M = 29.7	3.01: *
	s = 59.3	s = 25.2	
	t-ratio 5.860**	t-ratio 3.354**	
	change 43.3	change 8.2	4.590**

* Indicates significant difference between means at .05 level of significance
** Indicates significant difference between means at .01 level of significance

Conclusion: The program or project has been effective in fostering change in creativity or giftedness.

Recommendation: It is recommended that the project staff seriously consider utilizing only the Curiosity Test as the measure of creativity during the next project year. This test, being correlated with the Torrance Tests, appears to provide valid information regarding creativity. The time required to administer the Torrance Test when compared to the time required to administer the Curiosity Test certainly makes the Curiosity Test an attractive instrument for use during the next project year.

Objective 5: By May 30, 1976, identified students participating in a pilot program will show an improvement in school attitude as measured by pre - post test results of a school sentiment measure.

The School Sentiment Index instrument was administered on a pre - post basis for assessing changes in student's attitude toward school resulting from or contributed to by participation in the pilot program or project.

Analysis of the results of the School Sentiment Index indicated that there were no significant differences between the pilot group and control group (P>.05). These two groups were not significantly different on the pretests or the post tests. Thus, there was also no significant differences in the groups' gains or changes from pretest to post test. In addition, neither group experienced significant changes in their attitudes toward school from the time the project began until it ended. (See Table III).

TABLE III

ATTITUDE TOWARD SCHOOL MEAN
COMPARISONS OF PILOT AND CONTROL GROUP TEST
RESULTS ON SCHOOL SENTIMENT INDEX

PILOT GROUP (N = 32)	CONTROL GROUP (N = 28)	t-RATIO
Pre M = 26.9	Pre M = 27.6	.456
s = 6.4	s = 6.0	
Post M = 26.7	Post M = 26.1	.339
s = 7.2	s = 6.0	
t-ratio .236	t-ratio 1.466	
change -.2	change -1.5	.873

Conclusion: The program or project has not been effective in fostering chang in attitudes toward school. Attitude toward school is a seemingly stable variable and thus difficult to change or modify over a short period of time. Perhaps the time span of the project was too short to realize a change in the students' attitude toward school.

Recommendation: The rationale for administering the School Sentiment Index still exists. If these gifted children enjoy the experiences and activities provided by the program, they should ultimately like school better as a resul of participating in the program. It is recommended that the School Sentiment Index be utilized during the next project year. The project will be function from August, 1976 or September, 1976 to May, 1977. Hopefully, with the short time added and modifications occurring in the program based upon this year's experience, the program can contribute to a change in participants' attitudes toward school.

Objective 6: By May 30, 1976, identified students participating in a pilot program will show an improvement in self-concept as measured by pre - post test results of a self-concept measure.

Coopersmith's Self Esteem Inventory (SEI) was administered on a pre - po basis for assessing changes in self-concept resulting from project or program participation.

The results of the data analysis indicated that there were no significan differences between the pilot group and the control group (P>.05). These tw groups were not significantly different on the pretests or the post tests. T there were also no differences in the groups' gains or changes from pretest t post test. In addition, neither group experienced significant changes in the self-concepts from the time the project began until it ended. (See Table IV)

TABLE IV

SELF-CONCEPT MEAN COMPARISONS
OF PILOT AND CONTROL GROUP TEST
RESULTS ON SELF ESTEEM INVENTORY

PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Pre M = 69.9	Pre M = 69.5	.115
s = 15.0	s = 13.4	
Post M = 71.4	Post M = 72.3	.236
s = 14.2	s = 15.6	
t-ratio .509	t-ratio 1.017	
change 1.5	change 2.8	.336

Conclusion: The program or project has not been effective in fostering change in participants' self-concept. This variable, much like attitude toward school, is a seemingly stable variable and requires a longer time period to be changed or modified.

Recommendation: It is recommended that the Self Esteem Inventory be utilized during the next project year. In addition, project staff need to be aware that change or modification of a student's self-concept requires conscious efforts toward such modification. Emphasis needs to be placed on constant success within the program. Approaches towards modifying student's self-concept need to be incorporated into pre-service or pre-program training and continued in an inservice training program.

Objective 7: By May 30, 1976, the participating students in a pilot program will show a positive change in their personality profile as measured by pre - post test results of a personality test.

The California Test of Personality (CTP) was administered on a pre - post basis for assessing changes in personality resulting from project or program participation. The CTP provides information or subtest scores for social adjustment, personal adjustment, and total adjustment.

Data analysis revealed that there were no significant differences between the pilot group and the control group in the areas of personal adjustment, social adjustment, or total adjustment (P >.05). These two groups showed no significant differences in these three areas on the pretests, post tests, and gains or changes. (See Table V).

Data analysis further revealed that only 34.4% of the pilot group increased in personal adjustment scores, 53.1% decreased and 12.5% remained the same between pretest and post test. Only 34.4% increased in social adjustment and 65.6% decreased. Also, 34.4% increased in total adjustment, 59.4% decreased, and 6.3% remained the same between pretest and post test. These changes between pretest and post test for the pilot group were not significant. Thus, the pilot group did not score significantly different between pretest and post test on personal adjustment, social adjustment, or total adjustment measures.

Results for the control group were similar to the pilot group. A total of 44.8% increased in personal adjustment, 51.7% decreased, and 3.4% remained the same. On social adjustment 27.6% increased, 65.5% decreased, and 6.9% remained the same. Total adjustment analysis revealed that 44.8% increased and 55.2% decreased. These changes between pretest and post test also were not significant for the control group.

TABLE V

PERSONAL, SOCIAL, AND TOTAL ADJUSTMENT
MEAN COMPARISONS OF PILOT AND CONTROL
GROUP TEST RESULTS ON CALIFORNIA TEST OF PERSONALITY

TEST	PILOT GROUP (N = 32)	CONTROL GROUP (N = 29)	t-RATIO
Personal Adjustment	Pre M = 38.4 s = 11.2	Pre M = 39.1 s = 13.9	.196
	Post M = 37.5 s = 9.5	Post M = 39.7 s = 13.7	.717
	t-ratio .717	t-ratio .478	
	change -.9	change .6	.846
Social Adjustment	Pre M = 39.8 s = 8.5	Pre M = 42.4 s = 12.4	.952
	Post M = 39.2 s = 9.0	Post M = 40.3 s = 10.3	.453
	t-ratio .523	t-ratio 1.184	
	change -.6	change -2.1	.075
Total Adjustment	Pre M = 78.2 s = 17.7	Pre M = 81.5 s = 25.5	.607
	Post M = 76.7 s = 17.0	Post M = 80.0 s = 23.0	.624
	t-ratio .671	t-ratio .606	
	change -1.5	change -1.5	.054

Conclusion: The program or project has not been effective in fostering change in participant's personal, social, or total adjustment as measured by the California Test of Personality. Once again, this variable is a seemingly stable variable and requires considerable time to be changed or modified.

Recommendation: It is recommended that the California Test of Personality be utilized during the next project year. Particular attention should be given to gifted students who remain in the program for a second year to see if the extended time in the program can produce significant changes in their personal, social, and total adjustment measures.

SECTION IV

SUMMARY COMMENTS

During the two years this project has been functioning, the project has been successful in planning and developing procedures and instruments for identifying gifted and talented students. Also, an exemplar program and basic

curriculum guidelines were formulated for the development of individual
uniqueness in gifted and talented children. The project has moved from
its planning stages into implementation. In this movement curriculum has
been developed to provide gifted and talented children experiences and
activities to aid in developing their uniqueness. The handbook or
curriculum guide resulting from this project should serve as a valuable
aid to others desiring to establish a program for gifted and talented
children.

During these same two years the project or program has proven to be
effective in modifying or changing gifted and talented children's behavior
in the areas of mathematics, reading recognition, reading comprehension,
general information, vocabulary, general ability, and creativity. The
project or program has not proven to be effective in modifying or changing
gifted and talented student's behavior in the areas of attitude toward
school, self-concept, personal adjustment, social adjustment, or total
adjustment.

It is recommended that the exemplar program planned, developed, and
tested on a pilot basis be fully implemented during the third year of the
project in grades K-4 and implemented on a pilot basis in grades 5-8. In
this way data can be gathered to further validate the model or program in
grades K-4, and data can also be gathered relative to its effectiveness
in grades 5-8. During this same time curriculum can be written, tried,
revised, and finalized specifically for grades 5-8.

The project and program has come a long way and accomplished a great
deal in these two years. It is not unrealistic to expect even greater
results during the next year.

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* Essential References

KYRENE SCHOOL DISTRICT 28
8700 SOUTH KYRENE ROAD
TEMPE, ARIZONA 85284

EXCHANGE OF CONFIDENTIAL INFORMATION

_____
                                    Date

I hereby authorize the exchange of confidential Information

concerning my child _____
                              (Child's name)

_____, between Kyrene Elementary
      (Birthdate)

School District #28, HIP Gifted and Talented, 8700 S. Kyrene Road,

Tempe, Arizona and _____ .

It is understood that such information will be used in a professional

manner.

_____
                    Signature of Parent or Guardian

_____   _____
Witness   Date

KYRENE SCHOOL DISTRICT 28
8700 SOUTH KYRENE ROAD
TEMPE, ARIZONA 85284

CONFIRMATION

(Parents name & address)

This letter is to confirm ____(Name of Student)____
placement in the Kyrene School District Human Individual Potentialities:
A Program for the Talented and Gifted.

We are pleased he/she is able to participate and look forward
to a year of innovative learning experiences.

We encourage you to visit the seminar class and to request individual
conferences with the teacher or psychologist.

Sincerely yours,

Joyce B. Maughan, Consultant
ESEA Title III Project for
Human Individual Potentialities

JBM:ec

KYRENE SCHOOL DISTRICT
HUMAN INDIVIDUAL POTENTIALITIES

PARENTAL CONSENT FORM
(Extended Field Trip)

I hereby give permission for my child, or ward, _____
                                                    (childs name)

to go to _____

via bus. I understand that my child, or ward will:

    Leave from _____ _____ _____
                  (place)   (date)   (time)

    Return to _____ _____ _____
                  (place)   (date)   (time)

In granting this permission, I assume full responsibility for any
damage to person or property caused by my child or ward. Further,
I hereby expressly waive any claim for liability against the Board
of Education, Kyrene Public Schools, including its employees and
representatives, and relieve them from all liability in connection
with this trip. I further expressly agree that in the event of
disciplinary action, or of illness or accident of my child or ward, he
may be returned home at my expense. I further consent and will be
responsible for any medical or dental treatment caused by my child
or ward which may be advisable at the discretion of any physician
or dentist. It is further warranted that if this Consent Form is
signed by one of two parents or guardians, it is with the authority
of the other.

_____   _____
(Date of Signature)   (Signature of Parent Or Guardian)

_____   _____
(Telephone number)   (Address)

I give my permission for _____

to participate in the Kyrene District HIP gifted and

talented Program. I am aware this will involve a

program of development which is based on the affective,

cognitive and psychomotor domains. I give permission

for the above student to be tested in order to determine

the effectiveness of the program with the assurance

that all effort will be made to protect the privacy of

the student.

    Please feel free to visit HIP classes and to contact

the teacher for conferences.

Date _____   _____
                             Parent or Guardian

𝔓𝔢𝔯𝔰𝔬𝔫𝔫𝔢𝔩

Overview

he teacher is the key to an effective program for gifted and talented. Many studies ake it clear--a comprehensive in-service preparation for all school personnel who either re in contact with or affect the gifted is desirable.

he essence of the teacher for the gifted and talented is one who can relate well with hildren on a personal basis, one who enjoys teaching gifted children, has a sense of umor, is flexible, highly creative, highly intelligent, intellectually secure, personally ecure, interested in learning, mature and interested in the arts, literature and culture.

he effective teacher is not merely interested in the talent or achievement or intellectual ower of the child--rather they are interested in the individual as a whole.

"It must be remembered that the purpose of
education is not to fill the minds of
students with facts, it is not to reform
them, or amuse them, or to make them
expert technicians in any field. It is
to teach them to think, if that is
possible, and always to think for
themselves."
                              Robert Hutchins

"Democracy requires diversity rather than uniformity.
Valuable individual differences need to be cultivated...
Few people object to making special provisions for the
athlete, or for the handicapped child. Gifted children
may become handicapped if appropriate provision is not
made for them."
                              Ruth Strang
                              Educator

SCHOOL DISTRICT ROLES AND RESPONSIBILITIES

SCHOOL DISTRICT	COORDINATOR	TEACHER	STUDENT	PRINCIPAL
-Work cooperatively with county and State agencies.	-Design, develop, coordinate, and evaluate the program.	-Provide an enriched individualized program for the gifted.	-Attend regular or specially scheduled programs or events.	-Become knowledgeable about the unique needs of the gifted.
- Acquire and disseminate extensive background on the needs of the gifted and talented.	-Develop and implement curriculum (techniques, materials) related to enriching the total program.	-Assist students in planning, organizing, and evaluating tasks.	-Complete selected tasks.	-Become acquainted with gifted students in the school.
- Develop appropriate identification and program development procedures.	-Prepare financial, statistical, and descriptive reports as needed to develop, maintain, and account for the program.	-Screen, develop, and provide appropriate materials for the gifted.	-Communicate and share learning experiences with peers, teachers, and parents.	-Stimulate interest in and concern for the gifted.
- Plan modifications of the current program.		-Evaluate pupil progress.	-Practice decision-making skills.	-Urge teachers to provide qualitatively-differentiated pro-
- Evolve program development and evaluation models.		-Interpret the program to parents.	-Develop self-awareness and understanding.	grams for the gifted in their classrooms.
- Actively support the gifted program with needed materials, adequate facilities,	-Coordinate identification and certification procedures.		-Participate in planning and evaluating learning experiences within the program.	-Cooperate with district personnel in identifying the gifted and implementing pro-
sufficient freedom for teachers, expert resource and consultant help, and democratic administrative guidance.	-Serve as a consultant and resource to the staff, students, and parents involved with the program.	-Support classroom teachers and building principals in their teaching relationships with the gifted and talented.		grams for them.
				-Encourage and assist teachers in securing appropriate instructional materials for the gifted.
	-Participate as part of the Educational Services staff.	-Provide an enriched extension of the regular curriculum for gifted students in intra- or extra-classroom settings.		-Meet regularly with parents to explain the program to them.
	-Promote public relations activities at the local, county, and State levels.			-Work cooperatively with other personnel in objectively evaluating the program.
		-Demonstrate diverse methods of instruction appropriate for the gifted, such as problem solving, independent study, etc.		

From: Providing Programs for the Gifted and Talented
By Sandra N. Kaplan.

N/S-LTI-G/T

B DESCRIPTION

TLE: Coordinator for Gifted and Talented Program

ALIFICATIONS: 1. A master's degree, with academic training
                  in gifted education
              2. Valid certification as a school administrator
                 or supervisor
              3. A combination of at least 3 years educational
                 experience as an administrator or classroom
                 teacher
              4. Above average intelligence
              5. Such alternatives to the above qualifications
                 as the Board of Trustees may find appropriate
                 and acceptable

PORTS TO: Superintendent

PERVISES: Gifted and Talented staff and coordinates with
            principals the supervision of the HIP program

B GOAL: To enable identified individual students to
            utilize the educational services to the fullest
            by developing and supporting programs that enhance
            human individual potentialities to learn or
            develop intellectually, socially, and emotionally

RFORMANCE RESPONSIBILITIES:

To coordinate the development and implementation of a program
for identified gifted and talented students

To coordinate with principals to implement curriculum and
program planning and in-service training for teachers of gifted

To assist in recruitment, selection, and recommendation for
hiring of any personnel

To conduct weekly staff meetings

To plan and guide Professional Steering Committee meeting

To provide and give in-service workshops for staff

To develop program calendar

To furnish quarterly progress reports to School District and
to supervise the writing and dissemination of a monthly
news-letter to parents and school personnel

Job Description for Coordinator (page 2)

9. To interpret the objectives and programs of the education
   services to the Board, the Administration, Parent Advisory
   Council, educational institutions, and the public at large

10. To maintain a permanent inventory of equipment purchased
    for gifted education

11. To establish procedures to identify, process, and place
    eligible pupils in gifted and talented classes

12. To notify parents of identified participants and to be
    available for parent conferences

13. To conduct parent orientation sessions for participants.

14. To conduct student orientation meetings

15. To schedule parent/teacher conferences

16. To plan and conduct monthly parent meetings

17. To evaluate, on an on-going basis, the total program,
    curriculum, procedures, and individual students' needs
    and achievements

18. To participate as a member of the evaluation team in the
    selection and placement of students in the gifted program

19. To maintain a professional standard of strict confidentiality
    in regard to private information received, shared, discussed,
    and learned about individual students and families

20. To select and request needed supplies, materials, and equipment
    to assure completion of established goals and objectives

21. To assume responsibility for compiling, maintaining, and filing
    all reports and records legally required or administravely useful

22. To assume responsibility for own professional growth and develop-
    ment; for keeping current with the literature, new research
    findings, and improved techniques; and for attending appropriate
    professional meetings and conventions.

TERMS OF EMPLOYMENT: 11 months

EVALUATION: Performance of this job will be evaluated annually in
             accordance with provisions of Board Policy on Evaluation
             of Administrative Personnel.

JOB DESCRIPTION

TITLE: Psychometrist for Gifted and Talented Program

QUALIFICATIONS: A master's degree plus additional training necessary to meet district, and state requirements for psychometrist

REPORTS TO: Project coordinator

JOB GOAL: To aid in program evaluation and in identification, placement, and termination of students in the gifted and talented program through a program of psychological testing.

PERFORMANCE RESPONSIBILITIES:

1. To identify all types of gifted and talented children

2. To assess differences of students in the program through testing

3. To recommend creative procedures when seen necessary

4. To maintain records on all referred students

5. To prepare and submit required scores and evaluations

6. To explain testing program procedures and limitations

7. To interpret the results when necessary

8. To conduct parent conferences with all who request such interviews

9. To interpret testing program

TITLE: Psychologist

QUALIFICATIONS: 1. A master's degree plus two or more years additional graduate work in education and psychology
2. A valid certificate to practice as a school psychologist
3. At least three years' teaching experience
4. Such alternatives to the above qualifications as the Board may find appropriate and acceptable.

REPORTS TO: Project coordinator

SUPERVISES: Psychological intern

JOB GOALS: To enable students to derive the fullest possible educational experience from school by promoting their sense of self and by treating any psychological or mental health problems. To conduct necessary testing to meet district, state, and federal requirements and for program evaluation.

PERFORMANCE RESPONSIBILITIES:

1. Conducts extensive screening examinations of all students in the school district

2. Assessess strengths and weaknesses of students in gifted and talented program and makes recommendations

3. Interprets testing program to school personnel, other concerned professionals, parents, and students when necessary

4. Makes recommendations on placement of students in the program and for termination

5. Conducts individual and group pre and post-tests for program evaluator and experimental research

6. Maintains records on all students in the district

7. Participates in placement staffings when referred students are involved, or as requested

8. Serves as a resource person concerning psychological development for teachers and other school personnel

9. Confers with teachers and parents whenever necessary

10. Participates in and/or leads inservice training programs, i.e., professional conferences and workshops

11. Attends scheduled staff meetings and committee meetings as needed

12. Keeps abreast of new developments in the field

13. Conducts individual, group, or facilitative therapy for children whose diagnosed problems would indicate benefit from such an experience.

JOB DESCRIPTION

TITLE: Teacher of Gifted and Talented

QUALIFICATIONS: As set by State certification authorities

REPORTS TO: Principal and Gifted and Talented Coordinator

JOB GOAL: To act as facilitator and resource guide to
                    enable the more able students to develop their
                    potentialities for intellectual, emotional,
                    social, and psychological growth and maturation
                    to the fullest extent possible

HIP TEACHER JOB DESCRIPTION:

1. Plans with gifted program coordinator and school principal,
a program that, as much as possible, meets the individual needs,
interests, and abilities of gifted and talented students

2. Creates a classroom environment that is conducive to learning
and appropriate to the maturity level of students and utilizes
pupil abilities and interests constructively

3. Guides the learning process toward the achievement of
program goals, establishing broad concepts rather than specific,
and communicates these goals effectively to students

4. Employs varied instructional materials and encourages
students in self selection of materials using higher conceptual
levels of difficulty

5. Maintains classroom resource center containing appropriate
advanced level materials and serves as a facilitator to bring
student, resources, and resource people together.

6. Utilizes various forms to evaluate the program, teacher, and
student, using predetermined criteria

7. Counsels with supervisors, students and parents on a regular
basis

8. Attends staff meetings, in-service workshops, and gifted
organization and parents' meetings

9. Establishes and maintains effective relationships with
staff, classroom teachers, parents and local community

Job Description for Teacher (page 2)

10. Utilizes an end-of-the month newsletter to acquaint
parents and school personnel with activities of the program

11. Uses varied teaching strategies that effectively stimulate
higher-level thinking skills, primarily by application, analysis,
synthesis, and evaluation, by employing the inquiry approach

12. Presents activities that challenge, encourage, and stimulate
the students toward self-direction, independent thinking, and
willingness to attempt alternative approaches

13. Employs varied problem-solving techniques effectively,
such as inductive and deductive reasoning, using both scientific
and creative approaches

14. Conducts group discussions, skillfully encouraging the
growth and development of student participation and leadership

15. Encourages students in creative development, ie, encourages
fluent, flexible, original, and elaborative thinking; and
encourages risk taking, curiosity, imagination, and willingness
to seek alternative or divergent approaches

16. Develops an evolving curriculum that is on the cutting
edge of current theory and practice, and acts as a model to
disseminate innovative techniques and approaches to the
educational community by acting as consultant and exemplar

17. Encourages students to take responsibility for their own
intellectual, social and emotional behavior and growth

18. Facilitates students' career awareness and exploration

19. Displays enthusiasm, employs humor constructively,
demonstrates openness to change, is unthreatened by own mistakes,
and is unembarressed by criticism of students

20. Keeps abreast of changes and developments in the profession
by attending professional meetings, reading professional journals
and other publications, and discussing problems of mutual interest
with others in the field.

TERMS OF EMPLOYMENT: 9 months

EVALUATION: Performance of this job will be evaluated annually
in accordance with provisions of board policy on evaluation of
administrative personnel.

What Is A Teacher of the Gifted?
By Jack P. Nix

It is desirable that teachers of the gifted have the following characteristics and skills:

1. The ability to utilize research type teaching when working with gifted students and the ability to teach students to use research approaches to learning.

2. The ability to recognize a gifted student and to accept him for himself.

3. A high degree of general intelligence and an indepth knowledge of the academic areas being taught.

4. A thorough understanding of the nature of giftedness and its relationship to developmental patterns of growth.

5. The ability to recognize and manipulate ideas and the ability to translate ideas into learning situations that enable the student to gain knowledge and understanding of his responsibility to self and society.

6. Recognition of processes of learning and the ability to assist students in becoming involved in processes of learning.

7. The ability to teach with enthusiasm and to transmit this enthusiasm to students in such a way that a love of learning develops.

8. A willingness to become a learner along with students.

9. The ability to create a classroom atmosphere that allows the student to become responsible for his own learning and one that is conducive to good mental health.

10. The ability to create and implement a flexible, enriched, challenging, and individualized curriculum which is suited to each student's needs and avoids quantity without quality.

11. An understanding of the social and emotional problems that may be created for the gifted student because of his accelerated mental development.

12. A positive attitude toward teaching the gifted.

13. The ability to create an environment in which the gifted learn to participate effectively in small group and large group situations and in which students learn to work independently.

14. A willingness to become a facilitator of learning.

From: Mentally Gifted Minor Program: Teacher Handbook. Sunnyvale School District, 1971.

Rating Scale of Significant Behaviors in Teachers of the Gifted

Rater _____
Ratee _____
Date _____
School _____
Grade Level _____
Length of Observation _____
Subject(s) being taught _____

To the Rater: A Minimum of 40 minutes should be
used for each observation. Use every opportunity
to examine folios of materials, files of children's
products and other evidence, as well as teacher
behavior, to confirm impressions.

	Seldom	Occasionally	Frequently
Teaching Process	1	2	3

1. Utilizes specialized pupil interests constructively.
   a. Students work in areas of interest. ___ ___ ___
   b. Teacher capitalizes on student interest in
   classroom. ___ ___ ___

2. Utilizes special talents and abilities of the
   students.
   a. Students are involved in activities which
   display or include their special abilities
   and talents. ___ ___ ___
   b. Individualized materials are available for
   development of special talents and abilities. ___ ___ ___

3. Encourages self-selection of materials
   a. Students have freedom to select materials at
   higher conceptual levels of difficulty. ___ ___ ___
   b. Teacher encourages pupils to make own selections
   and decisions. ___ ___ ___

4. Makes classwork interesting through use of different
   sense media.
   a. Teacher encourages effective pupil displays,
   not teacher-made displays. ___ ___ ___
   b. Teacher uses maps, charts, TV, radio and/or
   films to augment or advance the quality of
   instruction. ___ ___ ___

5. Maintains or uses classroom resource center
   containing materials at appropriate advanced
   levels.
   a. Learning resources are openly available to
   students. ___ ___ ___
   b. Teacher serves as a resource to pupils. ___ ___ ___

	Seldom	Occasionally	Frequently
	1	2	3

6. Clarifies classroom goals and purposes using broad
   concepts rather than detail.
   a. Relates discussion to course objectives. ___ ___ ___
   b. Student's performance indicates understanding
   of course objectives. ___ ___ ___

7. Uses varied teaching strategies effectively.
   a. Teacher is sensitive to students' responses,
   both verbal and non-verbal.
      1. Teacher responds to visible cues in physical
      behavior of students. ___ ___ ___
      2. Teacher uses student verbal reactions to
      extend student insights and understandings. ___ ___ ___

8. Conducts group discussions skillfully
   a. Teacher withholds own ideas and conclusions. ___ ___ ___
   b. Teacher encourages participation of students
   in discussions. ___ ___ ___

9. Selects questions that stimulate higher-level
   thinking.
   a. Questions encourage students to draw analogies
   and to indicate relationships. ___ ___ ___
   b. Students are able to ask analytic questions. ___ ___ ___
   c. Students generalize from concrete to abstract.
   at advanced levels. ___ ___ ___

10. Utilizes synthesis and analysis in appropriate areas.
    a. Teacher utilizes effectively inductive and
    deductive reasoning and is able to apply
    techniques in classroom. ___ ___ ___
    b. Teacher assists and/or encourages students to
    relate theory to practice. ___ ___ ___

11. Draws examples and explanations from various sources
    and related fields.
    a. Interrelationships are emphasized by teacher
    and students. ___ ___ ___

12. Presents activities that challenge and stimulate
    the students.
    a. Students are eager to work on activities ___ ___ ___
    b. Teacher varies the kind of assignment to the
    learning abilities and interest of the students. ___ ___ ___
    c. Teacher emphasis is on broad ideas and not
    drill and rote memory activities. ___ ___ ___

13. Utilizes evaluation in various forms.
    a. Teacher helps students in self-evaluation and
    self-improvement. ___ ___ ___

	Seldom	Occasionally	Frequently
	1	2	3

14. Encourages independent thinking, including
    difference of opinion.
    a. Students are encouraged to examine thoroughly
       and accurately controversial issues.
       1. Students compare and contrast different
          issues, using objective evidence.   ___ ___ ___

15. Gives appropriate encouragement to pupils.
    a. Teacher gives praise when deserved.
    b. Teacher makes students feel worthy.   ___ ___ ___
    c. Teacher provides for recognition of outstanding
       creative and/or scholarly performance.   ___ ___ ___

16. Understands and encourages student ideas.
    a. Teacher encourages students to try new approaches.-
    b. Teacher is tolerant of students' attempts
       to find solutions of problems;   ___ ___ ___
    c. Teacher encourages "guesses" by students and
       facilitates evaluation of guesses by students.
    d. Teacher helps students to realize that research ___ ___ ___
       involves trial and error.
       1. Students are encouraged to apply principles
          of scientific procedures.   ___ ___ ___

    Teacher Background

17. Is unthreatened by own mistakes.
    a. Teacher is undisturbed and unembarrassed by
    own mistakes or criticism of students.   ___ ___ ___

18. Teacher displays enthusiasm and employs humor
    constructively.
    a. Teacher is energetic and animated.   ___ ___ ___

SUMMARY ITEM:

19. Demonstrates understanding of the educational
    implications of giftedness.
    a. Teacher uses implications of characteristics in
       the classroom operation, selection of materials,
       schedules, and questions.   ___ ___ ___

Martinson, Ruth A. and Wiener, Jean, co-Directors,
The Improvement of Teaching Procedures with Gifted
Elementary and Secondary Students, Project 6-1244,
Washington, D.C., Bureau of Research, U.S. Office
of Education, Department of Health, Education and
Welfare. June, 1968. Pp. 45-46.

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Committees, Parents, and P.R.

Committee Functions

The use of on-going committees to develop and guide school programs is a "given" in
education. The original committee is usually called a planning or steering committee.
Ideally, it is composed of the superintendent, members of the board of education, the
administrative staff and interested community leaders. Often several teachers are
included (a strong opposition member as an advocate may strengthen the program, for
their criticisms may be used to iron out any possible weaknesses). The chairman of this
committee should be the coordinator of the program for talented and gifted. Possible
activities of this committee are to:

---Investigate the scope of the problem
---Determine community attitudes toward gifted and talented program
---Identify general school objectives with which to dovetail gifted and talented objectives
  and goals
---Present philosophy to board of education for approval
---Choose definition for gifted and talented that best meets system's needs
---Help establish criteria for identifying gifted and talented
---Serve as a clearinghouse for discussion of problems that arise
---Determine needs of selected group of children. Specialists in both curriculum and
  guidance need to be consulted.
---Evaluate current program in terms of gifted and talented needs
---Decide which administrative provisions need to be made to facilitate program development

The results of committee research and should be shared with all members at all time.
All policy matters and a continuous summary of the committee's findings must be properly
presented to the school board. Keep everyone fully informed by publicizing the committee
actions and findings.

Often a steering committee is formed and is still in existence when a Parent Advisory
Council for a program becomes involved. Both can work together for the development of
a gifted and talented program. Specific role functioning of each group follows:

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PURPOSE

The purpose of the Kyrene Steering Committee is to assist in the development of the Human Individual Potentialities program ESEA Title III for the Gifted and Talented.

ROLE

The function of the Steering Committee will be to review research, assist in program development and make recommendations to ESEA Title III personnel concerning their findings.
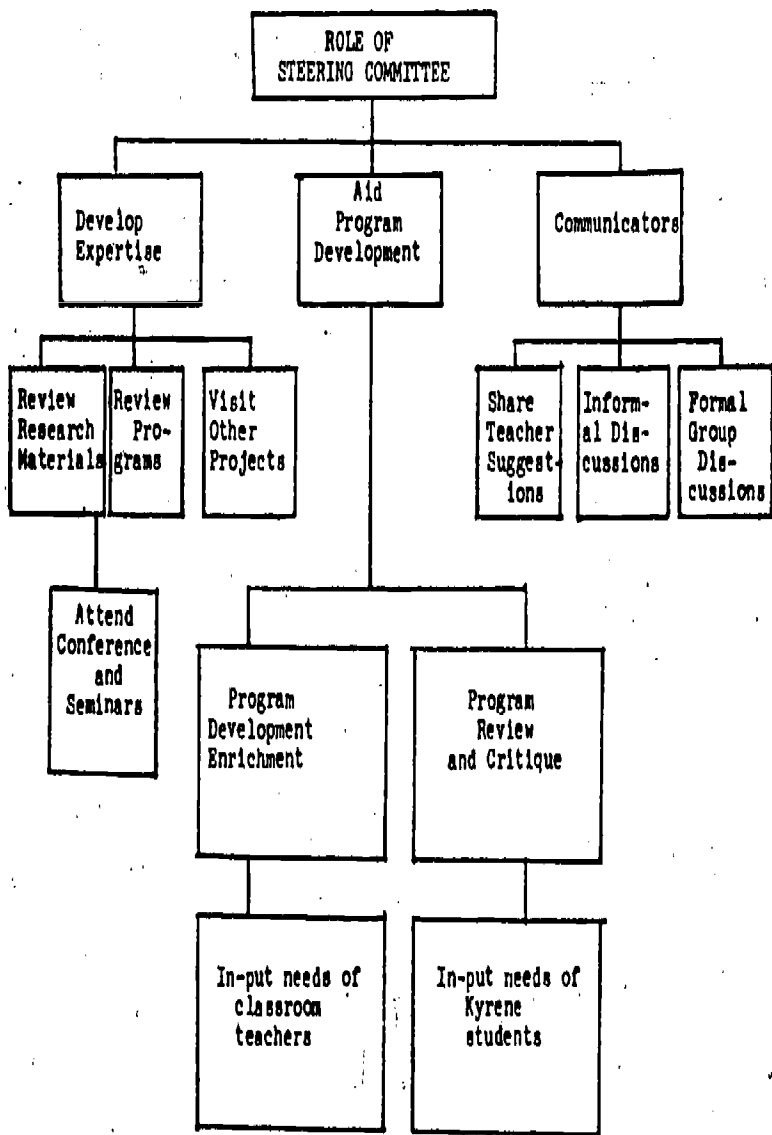
COMMITTEE MEMBERSHIP

The Steering Committee is composed of representatives of District teachers, representatives of district administrators and representatives of the Parent Advisory Council.

STEERING COMMITTEE GOAL

Assist in design and development of program for gifted and talented in the Kyrene District grades K - 8.

PERFORMANCE OBJECTIVES

1. Develop expertise in the area of gifted and talented programs.

   Activities:
   The Steering Committee will become knowledgable in the area of giftedness and talented by:

   (1) reviewing materials on current and past gifted and talented programs
   (2) review current relevant research on gifted and talented programs
   (3) visiting other schools to observe gifted and talented programs in operation
   (4) attend conferences and training programs for the gifted and talented.

2. The Steering Committee will assist in the planning and development of the Kyrene ESEA Title III project for the gifted and talented by:

   Activities:
   (1) offer oral and written suggestions for the development and enrichment of the program being developed
   (2) offer oral and written critique of materials currently being used in program development
   (3) offer oral and written suggestions regarding specific needs of Kyrene classroom teachers
   (4) offer oral and written suggestions regarding specific needs of Kyrene students.

3. The Steering Committee will help the Kyrene classroom teachers, parents, students and other interested citizens by:

   Activities:
   (1) Sharing suggestions relating to teachers
   (2) relaying information gleaned on gifted and talented through informal discussion in small groups
   (3) identify Steering Committee members with competencies in making formal presentations.

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Parent Advisory Council

PURPOSE

The purpose of a Parent Advisory Council is to assist in the development and implementation of a gifted and talented program.

ROLE

The function of the Parent Advisory Council is to assist in the development, maintenance and evolution of a program for the gifted and talented.

COMMITTEE MEMBERSHIP

The Parent Advisory Council is composed of representative parents and other community resource persons.

GOALS

1. To review the literature and gain expertise in the area of gifted and talented
2. Become familiar with a variety of programs and know where to get additional information
3. To make an assessment of the needs of the identified gifted and talented students and state them in broad terms
    Example: Gifted and talented students need educational experiences commensurate
              with their abilities.
4. To develop a concensus of these needs
5. To look for a variety of alternatives to meet these needs
6. To establish some specific end goals which are consistent with the general philosophy of the school district
7. To assist in development of processes which will bring about the specific end goals.
8. Be able to organize, and to keep going, a local parent group to act as change agents advocates and facilitators in behalf of the gifted and talented children
9. Communicate program needs, development, events, etc., to other parents and the community at large through news releases, newsletters, telephone trees, etc.

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Parent Involvement

Suggestions of what parents might do include:

1. Provide the child a home with as much stimulation and challenge in as many areas as possible.

2. Get involved with groups to promote programs for gifted. Try to influence legislation, school board, principals and teachers.

3. Support programs for gifted. Become a member of a Parent Advisory Council or other decision-making group.

4. Give direct assistance to the school's program, such as providing transportation, teaching a short-term course, serving as a teacher aide, sponsoring or coordinating events, publishing newsletters and, establishing a core of resource persons.

5. Be a childrens' advocate by supporting their right to be themselves as persons. Allow them to be honest and maintain their integrity.

6. See children as valuable in and of themselves, not primarily for their intelligence or talents. Avoid discussion with others which label the child as "gifted." Parents who boast guarantee resentment. Avoid comparison with other children in the family. Evenly distribute love and affection. Recognize the various accomplishments of all children. Discuss the particular contribution of each individual

7. Aid the child who has developed an unrealistic sense of his/her own importance by asking him/her to assess the impact on others of this specific behavior. Let the child provide the analysis and suggest ways to improve the relationship.

8. Express appreciation when school personnel give special attention to strengths of children rather than weaknesses.

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SUGGESTIONS FOR PARENTS OF ABLE CHILDREN
J. C. Gowan
San Fernando Valley State College
Northridge, California

1. They are still children. They need love but controls; attention but discipline; parental involvement, yet training in self-dependence and responsibility.

2. Consonance of parental value systems is important for their optimum development. This means that there should not be wide disagreements over values between parents.

3. Parental involvement in early task demands, such as training them to perform tasks themselves, to count, tell time, use correct vocabulary and pronunciation, locate themselves, and get around their neighborhood, do errands and be responsible are all important.

4. Emphasis on early verbal expression, reading, discussing ideas in the presence of children, poetry and music are all valuable. Parents should read to children. There should be an emphasis by parents on doing well in school.

5. The lack of disruption of family life through divorce or separation, and the maintenance of a happy, health home is an important aspect in raising able children, as well as other children.

6. Since able children often have vague awareness of adult problems such as sex, death, sickness, finances, war, etc., which their lack of experience makes them unable to solve, they may need reassurance in these areas.

7. Parents can see to it that the gifted child, age six or above, has a playmate who is as able, even if he has to be "imported" from some distance.

8. The role of good books, magazines and other aids to home learning, such as encyclopedias, charts, collections, etc., is important.

9. Parents should take the initiative in taking able children to museums, art galleries, educational institutions and other historical places where collections of various sorts may enhance background learning.

10. Parents should be especially careful not to "shut up" the gifted child who asks questions. In particular, he should not be scolded for asking, nor should it be inferred that this is an improper or forbidden subject. The parent may, however, insist that questions not be asked at inappropriate times, and he may require the child to sharpen or rephrase his question so as to clarify it. Sometimes questions should not be answered completely, but the reply should itself be a question which sends the child into some larger direction. When the parent cannot answer the question, he should direct the child to a resource which can. Sometimes questions call for clarification of concepts, as with the young child who asked, "Why aren't all those rockets liable to shoot down God?"

11. There's a difference between pushing and intellectual stimulation. Parents should avoid "pushing" a child into reading, "exhibiting" him before others or courting undue publicity about him. On the other hand, parents should seek in every way to stimulate and widen the child's mind, through suitable experiences in books, recreation, travel and the arts.

12. The gifted child usually has a broad and versatile range of interests, but he may be somewhat less able to concentrate on one area for a long time. Parents should encourage children who have hobbies to follow through on them, to plan and strive for creditable performance and for real mastery, rather than "going through" a lot of hobbies or collections in a short time.

13. Parents should avoid direct, indirect or unspoken attitudes that fantasy, originality, unusual questions, imaginary playmates, or out-of-ordinary mental processes on the part of the child are bad, "different" or to be discouraged. Instead of laughing at the child, laugh with him and seek to develop his sense of humor.

14. Parents should avoid overstructuring children's lives so that they don't have any free time. Sometimes parents are concerned that gifted children spend some time in watching TV or reading comic books. While they should not spend all their time in doing so, they cannot be expected to perform at top capacity at all times.

15. Respect the child and his knowledge, which at times may be better than your own and impatient of authority. Assume he means to do right, and the deviations are not intentional. Do not presume on your authority as a parent except in crises. Allow much liberty on unimportant issues. Try to give him general instructions to carry out in his way rather than specific commands to carry out in yours.

16. Gifted children are sometimes impatient of conventions. Have a frank talk with your child about the importance of conventions, such as driving on the right hand side, where he can see the social advantages, and then point out that other conventions of politeness, manners, courtesy and regard for others have similar bases in experience.

17. Whenever possible, talk things out with him where there has been a disciplinary lapse. He is much more amenable to rational argument than are many children and usually has a well developed sense of duty.

18. Give him the stimulation of private lessons in some skill in which he excels. See that he has social membership in worthy groups. Foster special experiences outside the home by his traveling alone, or visiting friends overnight. Try to facilitate his chance to talk alone with an adult authority in some line that interests him.

19. Try to improve his sense of taste in mass media, TV, radio, cinema, newspapers, comics, reading, arts, etc. Discuss the basis for taste and give him some experience with new forms of expression in the arts.

20. Take time to be with him, to listen to what he has to say, to discuss ideas with him.

21. Be a good example yourself, and try to find worthy adult model figures of both sexes outside his family for him to know.

22. Support the school efforts to plan for able children. Help to interest the PTA in the problem. Support study groups on gifted children. Form with other parents into cooperative endeavors.

23. Investigate scholarship programs of your community for other gifted children and help provide them.

24. Work to provide better community understanding of, and appreciation of, the role of the able child in society and the importance of community planning.

25. Support community action for able children, including bonds and school taxes for extra educational advantages. Advocate more guidance and special education for the gifted.

What about the gifted and talented?

SOME QUESTIONS AND ANSWERS----

1. WHO ARE THE GIFTED AND TALENTED?

The gifted and talented are those children and youth whose abilities, talents and potential for accomplishment are so outstanding that they require special provisions to meet their educational needs. These are persons of exceptional promise whose capabilities predict contributions of lasting merit in widely varying fields. They come from all walks of like with special abilities and talents ranging across a wide spectrum of human achievement. As adults they are the leaders in government, medicine, invention, the creative arts, the communicative arts, philosophy, industry; science, and many other fields.

The failure to identify the gifted and talented properly in minority populations or in impoverished communities has led to under-representation for some groups. In all populations, identification has been inadequate. Because they are capable of good performance with little effort and can adapt to the school environment with ease, they tend to remain unrecognized, and their abilities are unknown.

Researchers believe that such children and youth can be identified at a very early age through individual testing and observation. Giftedness has been found in all walks of life, although environmental factors make it more difficult to identify the gifted and talented from minorities and divergent cultures. As expected, the gifted and talented perform at levels far ahead of their chronological peer groups and are also more advanced in their interests, skills and psychological maturity.

2. HOW MANY GIFTED AND TALENTED STUDENTS ARE THERE IN THE NATION?

The 1970 census estimate the total school population of the United States at 51,600,000. Within that population, the number of gifted and talented students requiring special educational attention is estimted at 2,580,000. In the scholastic areas, these are the persons who go beyond easy success with advanced academic content to unusually high levels of understanding, idea production, and superior accomplishment. The creative and talented among them give evidence of promise of contributions of lasting value and require special provisions to assure development of their abilities.

3. WHY SHOULD GIFTED AND TALENTED CHILDREN AND YOUTH GET SPECIAL ATTENTION?

If democratic education means educational opportunities appropriate to a child's ability than the gifted and talented generally are being inappropriately served, and human talent and youth cannot ordinarily grow toward their potential without special assistance. Placed in unchallenging educational opportunities, which sometimes are even hostile toward the behavior of the gifted and talented, they frequently tend to conceal their extraordinary abilities and bury them in underachievement.

4. WHAT IS THE EDUCATION OF THE GIFTED AND TALENTED?

Education for the gifted and talented requires an understanding that their differences from the average are both real and legitimate. Programs are planned for them, not on the basis of content which suits the majority of pupils, but on the basis that their advanced accomplishments and interests require different content and different opportunities. As all other students, they must have educational experiences at an appropriate level for them. An adequate program provides interest and challenge, instead of merely the opportunity to mark time and do "good" work.

The hallmark of education for the gifted and talented is careful planning of individual opportunities for advanced learning which are suitable to exceptional minds and talents. Such education enhances development; it does not restrict or postpone. It accommodates the school to the students, rather than the reverse. In short, it recognizes their right to learn.

5. WHAT IS THE STATUS OF SCHOOL PROGRAMS FOR THE GIFTED AND TALENTED?

According to recent surveys, the majority of those recognized as gifted and talented receive little attention at best. One-third or more of the known gifted receive no special instruction. The majority of gifted children and youth are taught in regular classrooms, whose teachers rarely have time to devote extra effort to these very able students. Most identified gifted and talented children and youth receive little or no attention at the elementary school level, while the programs at the secondary level consist mainly of separate part-time classes.

6. WHAT KINDS OF TEACHERS ARE NEEDED FOR THE GIFTED AND TALENTED?

Preparation of teachers to work with the gifted and talented is an important priority. The need for special training is imperative. Teachers with no special background for training the gifted and talented have been found disinterested in, and even hostile toward, the gifted and talented. Inservice programs to help all teachers appreciate the gifted and talented can do much to assure better opportunities for them. Generally, successful teachers of the gifted and talented are interested in scholarly and artistic pursuits, have wide interests, a sense of humor, are student-centered, are enthusiastic about teaching and recognize the need for advanced study for themselves.

7. CAN LOCAL SCHOOLS PROVIDE ADEQUATELY FOR THE GIFTED AND TALENTED?

Under special conditions, the public schools can competently provide for gifted and talented children and youth. Such special conditions could be: (1) well designed identification processes; (2) awareness and commitment on the part of school administrators as to the needs of the gifted and talented; (3) staff orientation and training to assist in identification and to support special services for them; (4) adequate human and material resources, including trained teachers, should be provided to meet their needs; (5) differentiated experiences and activities parallel to their needs should be developed along with process strategies to carry them out.

8. WHAT SHOULD STATE EDUCATION AGENCIES BE ENCOURAGED TO DO?

First, state education agencies should provide trained personnel from the agency to work with local school districts. These consultants would provide consultative services to school districts to assist them in developing special programs and/or services for the gifted and talented. The state agencies may find adequate federal support under existing titles to provide funds for such personnel.

Recent surveys show that when states provide appropriate leadership personnel that there is an appreciable increase in the number of gifted and talented children identified, and a sharp increase in the number of special programs provided at the school district level.

Part Two

Curriculum Development

Introduction

The ultimate purpose of the Seminar Curriculum is to flow from
the characteristics of the students and therefore fulfill their
needs. Gifted students then need to have activities which give
them the opportunity to think abstractly, to reason, to solve
problems, and to see relationships at higher levels of cognition.
This purposely distinctive curriculum will provide a differen-
tiated education for the gifted.

The question is often asked, "Would not this curriculum be
beneficial to all students?" The answer is, "NO." The average
student might be bored or frustrated in a class purposely
designed for students of exceptional ability.

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Models and Theories

Education for the gifted requires differentiated and enriching curriculum. The Taxonom of Educational Objectives, Handbooks I & II, by B. S. Bloom, David Krathwohl, and Associates (1964 and 1956), with psychomotor additions proposed by Elizabeth Simpson (ERIC Ed 010-368), gives us the basis for a total learning taxonomy. Classifying all educational objectives under the cognitive, affective, and psychomotor domains provides a theoretical framework to structure a more complete curriculum and stress the higher level thinking processes.

J. P. Guilford (1967) describes a theory for the Structure of Intellect (SOI) which enables the teacher to design a curriculum differentially focusing upon operations, contents, and products. His identified operations--Cognition, Memory, coNvergent production, Divergent production, and Evaluation--enables the teacher to design for the specific interplay of the intellect desired. Mary Nacol Meeker (1969, 1973) extends Guilford's work for an individually programed curriculum.

Theory of Creativity must have a place in curriculum for the gifted. E. P. Torrance (1970) has done pioneering work in this area. Frank Williams describes creative pupil behaviors which include cognitive and affective components. James A. Smith provides the principles of creativity. Lucito (1972) compiles a list of characteristics. We express gratjtude to these and other unnamed theorists and researchers for suggesting structure for logical and comprehensive coverage of skill development.

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A TOTAL LEARNING TAXONOMY
(acting + feeling + thinking)

Psychomotor Domain	Affective Domain	Cognitive Domain
6. Evaluation: Ability to judge physical act for a given purpose.	6. Evaluation: Reconsidering new and judging old values for change.	6. Evaluation: Ability to judge value of material for a given purpose.
5. Complex Overt Response: High level of skill attained--motor act complex. Resolution of uncertainty-act performed without hesitation. Automatic Performance-finely coordinated skills.	5. Value Complex: Predictable set of values joined to become "life style"	5. Synthesis: Ability to put the parts together to form whole.
4. Mechanism: Learned is practiced and becomes habitual. Abilities are combined in action of a skilled nature.	4. Organization: Bringing together different values resolving conflicts between two.	4. Analysis: Ability to break down material into its component parts so whole structure understood.
3. Guided Response: Overt behavioral act of individual under guidance of instructor. Imitation--execution of act as a direct response to perception of another performing the act. Trial and error--trying various responses until appropriate.	3. Valuing: Worth attached to a particular object, phenomena or behavior.	3. Application: Ability to use materials in new concrete situations.
2. Set: Readiness for particular kind of action. Mental Set--readiness to perform motor act. Physical Set--anatomical adjustments made to perform motor act. Emotional Set--readiness of attitudes favorable to motor acts taking place.	2. Responding: Active participation, reacting to the phenomena.	2. Comprehension: Ability to grasp the meaning of the materials.
1. Perception: Becoming aware of objects, qualities or relations. Sensory stimulation--auditory, visual, tactile, taste, smell, kinesthetics. Cue selection--deciding which Cue to respond to. Translation--determining meaning to received cues for action.	1. Receiving: Willingness to attend to particular phenomena or stimuli.	1. Knowledge: Recall of previously learned materials.

59 84
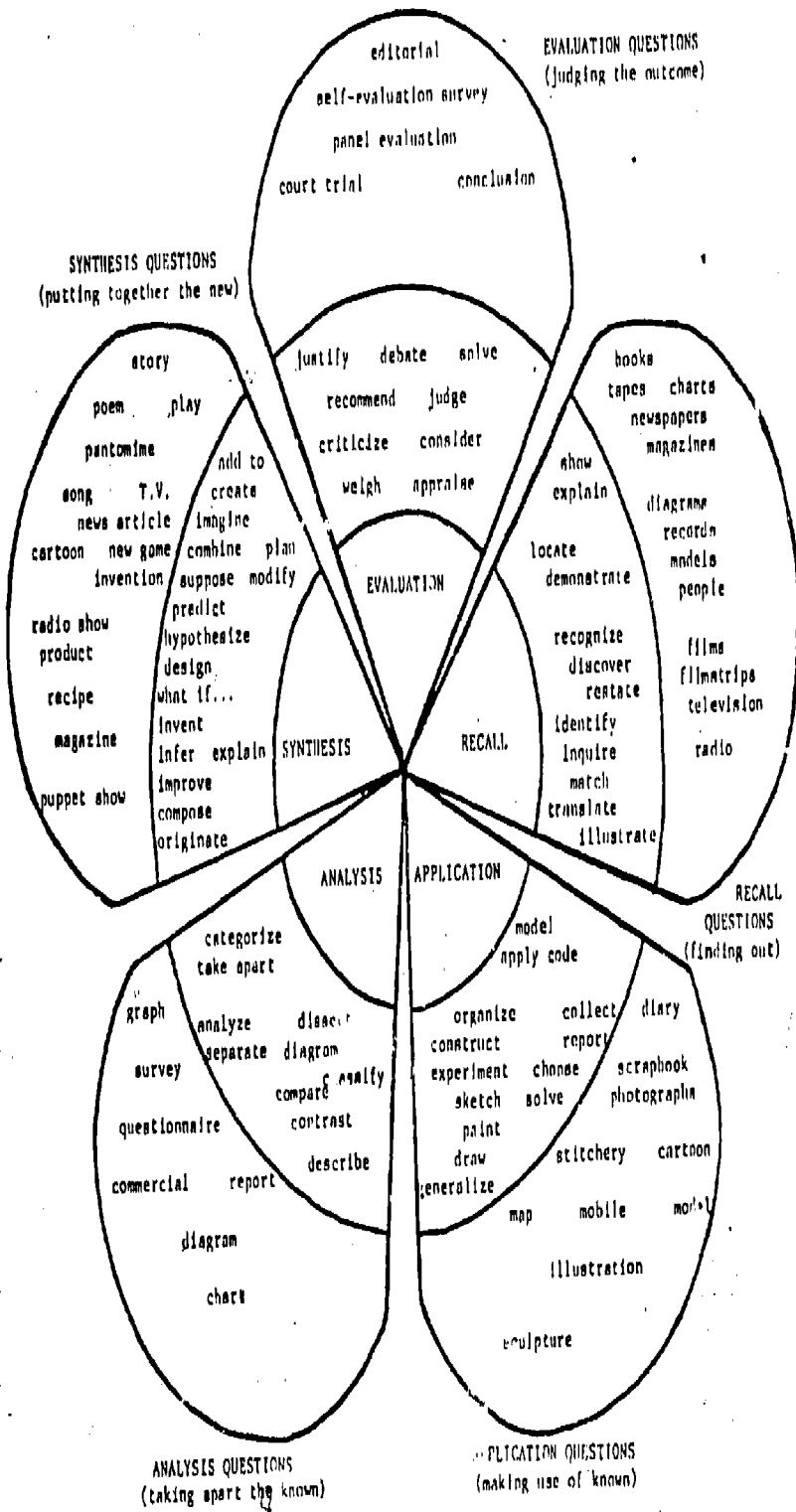
THE STRUCTURE OF INTELLECT
GUILFORD'S CUBE

EVALUATION QUESTIONS
(judging the outcome)

editorial

self-evaluation survey

panel evaluation

court trial   conclusion

SYNTHESIS QUESTIONS
(putting together the new)

story

poem   play

pantomime

song   T.V.

news article

cartoon   new game

invention

radio show
product

recipe

magazine

puppet show

add to
create
imagine
combine   plan
suppose modify
predict
hypothesize
design
what if...
invent
infer explain
improve
compose
originate

justify   debate   solve

recommend   judge

criticize   consider

weigh   appraise

EVALUATION

show
explain

diagrams
records
models
people

locate
demonstrate

recognize
discover
restate

identify
inquire
match
translate
illustrate

books
tapes   charts
newspapers
magazines

films
filmstrips
television

radio

SYNTHESIS   RECALL

ANALYSIS   APPLICATION

**RECALL
QUESTIONS**
(finding out)

categorize
take apart

graph

survey

questionnaire

commercial   report

diagram

chart

analyze   dissect
separate diagram
compare classify
contrast
describe

model
apply code

organize   collect   diary
construct   report
experiment change scrapbook
sketch   solve   photographs
paint
draw   stitchery   cartoon
generalize
map   mobile   model
illustration
sculpture

ANALYSIS QUESTIONS
(taking apart the known)

APPLICATION QUESTIONS
(making use of known)

OPERATION:

Evaluation

Convergent production

Divergent production

Memory

Cognition

Units

Classes

Relations

Systems

Transformations

Implications

PRODUCT

CONTENT:

Figural

Symbolic

Semantic

Behavioral

F   S   M   B

U
C
R
S
T
I
E

C   M   D   N

Creativity

Definition

There is a lack of agreement among educators about the definiton of creativity and its distinctiveness from intelligence. Torrance's (1973) definition of creativity has wide currency in educational circles. He defines creativity as

> "becoming sensitive to or aware of problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on; bringing together available information; defining the difficulty or identifying the missing element; searching for solutions, making guesses or formulating hypotheses about the deficiencies, testing and retesting these hypotheses and modifying and restating them; perfecting them and finally communicating the results." (p.22)

Creativity is a natural, healthy process and a strong human need. It appears to consist of multi-dimensional processes. Creativity is the ability to see new relationships. It is draw upon experiences of the past, add an intuitive flash, and come up with some-ng ew. Discipline and impulse are both necessary ingredients. Silvano Arieti, in ativity: The Magic Synthesis, says that creativity is a rare coming together of irrational forces and the rational, logical and cognitive forces. He recommends certain ttitudes and conditions for fostering this "magic syntheses." These include:

> "(1) aloneness, (2) inactivity, (3) daydreaming, (4) free thinking, (5) a state of readiness for catching similarities, (6) gullibility, (7) remembrance and inner replaying of past traumatic conflicts, (8) resolution of conflicts, (9) alertness, and (10) discipline."

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CREATIVE PUPIL BEHAVIORS AS DESCRIBED BY
FRANK WILLIAMS
IDES COGNITIVE AND AFFECT AS SHOWN BELOW

Behavior   Meaning

COGNITIVE - INTELL

Fluent Thinking   Generation of a quantity
   To think of the *most*--   Flow of thought
                                            Number of relevant responses

Flexible Thi ing   Variety of kinds of ideas
   To take a *{erent* approaches--   Ability to shift categories
                                            Detours in direction of thought

Original Thinking   Unusual responses
   To think in *novel* or *unique* ways--   Clever ideas
                                            Production away from the obvious

Elaborative Thinking   Embellish upon an idea
   To *add on* to--   Embroider upon a simple idea or response to
                                               make it more elegant
                                            Stretch or expand upon things or ideas

----

AFFECTIVE - FEELING

Risk Taking   Expose oneself to failure or criticisms
   To have *courage* to--   Take a guess
                                            Function under conditions devoid of structure
                                            Defend own ideas

Complexity   Seek many alternatives
   To be *challenged* to--   See gaps between how things are and how they
                                               could be
                                            Bring order out of chaos
                                            Delve into intricate problems or ideas

Curiosity   Be inquisitive and wonder
   To be *willing* to--   Toy with an idea
                                            Be open to puzzling situations
                                            Ponder the mystery of things
                                            To follow a particular hunch just to see what
                                               will happen

Imagination   Visualize and build mental images
   To have the *power* to--   Dream about things that have never happened
                                            Feel intuitively
                                            Reach beyond sensual or real boundaries

From *Classroom Ideas for Thinking and Feeling by Frank Williams. Used with permission from* D.O.K. Publishers, Inc., Buffalo, New York, 14214.

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PRINCIPLES OF CREATIVITY[1]

Research in the past ten years has helped educators to arrive at some basic conclusions on creativity. It will help us to better understand what creative teaching is if we review these principles:

1. All children are born creative and have creative powers.
2. There is a relationshp between creativity and intelligence; highly creative people are always highly intelligent, though highly intelligent people are not always creative. All children can create to some degree. There is very little relationship between intelligence and creativity other than the fact that a degree of intelligence is necessary for the creative process to take place.
3. Creativity is a form of giftedness which is not measured by current intelligence tests.
4. All areas of the curriculum may be used to develop creativity. It is not confined solely to the creative arts.
5. Creativity is a process and a product.
6. Creativity is developed by focusing on those processes of the intellect which fall under the general area of divergent thinking. This area of the intellect has been greatly neglected in our teaching up to this point.
7. All creative processes cannot always be developed at one time, or in one lesson. Lessons must be planned to focus on each process.
8. Creativity cannot be taught; we can only set conditions for it to happen and insure its reappearance through re-enforcement.
9. More knowledge, more skills and more facts than ever before are required for creativity to be developed.
10. The sequence of creative development leads us to believe that children must be able to tap all of life's experiences in order to become truly creative; unnecessary rules and actions may force much of that experience into the preconscious or subconscious mind where it cannot be readily used.
11. Excessive conformity and rigidity are true enemies of creativity.
12. Children go through orderly steps in the creative process.
13. Creative teaching and creative learning have been more effective than other types of teaching and learning.
14. Children who have lost much of their creativity may be helped to regain it by special methods or teaching.
15. Creativity is developmental; children begin at a simple stage and progress to more difficult stages of productivity.

1. Taken from James A. Smith, *Setting Conditions for Creative Teaching in the Elementary School* (Boston: Allyn and Bacon, 1966), pp. 1–21.

I.	FEAR OF FAILURE	Drawing back; not taking risks; settling for less in order to avoid the possible pain or shame of failing.
II.	RELUCTANCE TO PLAY	Literal. Overly serious problem-solving sytle; Not "playing around" with stuff. Fear of seeming foolish or silly by experimenting with the unusual.
III.	RESOURCE MYOPIA	Failure to see one's own strengths; Lack of appreciation for resources in one's environment - People and Things.
IV.	OVER-CERTAINTY	Rigidity of Problem-solving responses; Stereotyped reactions; Persistence in behavior that is no longer functional; Not checking out one's assumptions.
V.	FRUSTRATION AVOIDANCE	Giving up too soon when faced with obstacles; Avoidance of the pain or discomfort that is often associated with change or novel solutions to problems.
VI.	CUSTOM-BOUND	Over-emphasis on traditional ways of doing things; Too much reverence for the past; Tendency to conform when it is not necessary or useful.
VII.	IMPOVERISHED FANTASY LIFE	Mistrusting, ignoring or demeaning the inner images and visualizations of self and others; Over-valuing the so-called objective, real world; Lack of "Imagination" in the sense of "let's pretend" or "what if".
VIII.	FEAR OF THE UNKNOWN	Avoidance of situations which lack clarity or which have unknown probability of succeeding; Overweighting what is not known vs what is known; A need to know the future before going forward.
IX.	NEED FOR BALANCE	Inability to tolerate disorder, confusion or ambiguity; Dislike of complexity; Excessive need for balance, order, symmetry.
X.	RELUCTANCE TO EXERT INFLUENCE	Fear of seeming too aggressive or pushy in influencing others; Hesitancy to stand up for what one believes; Ineffective in making oneself heard.
XI.	RELUCTANCE TO LET GO	Trying too hard to push through solutions to problems; Inability to let things incubate, or let things happen naturally; Lack of trust in human capacities.
XII.	IMPOVERISHED EMOTIONAL LIFE	Failure to appreciate the motivational power of emotion; Using energy in holding back spontaneous expressions; Lack of awareness of the importance of feelings in achieving commitment to individual and group effort.
XIII.	UNINTEGRATED YIN-YANG	Not making sufficient use of contrasting ways of getting at the essence of things; Polarizing things into opposites, rather than knowing how to integrate the best of both sides; Lacking unified perception of the wholeness in the universe.
XIV.	SENSORY DULLNESS	Not adequately using one's primary senses as a way of knowing; Making only partial contact with self and environment; Atrophy of capacities to explore; Poor sensitivity.

(Source unknown)
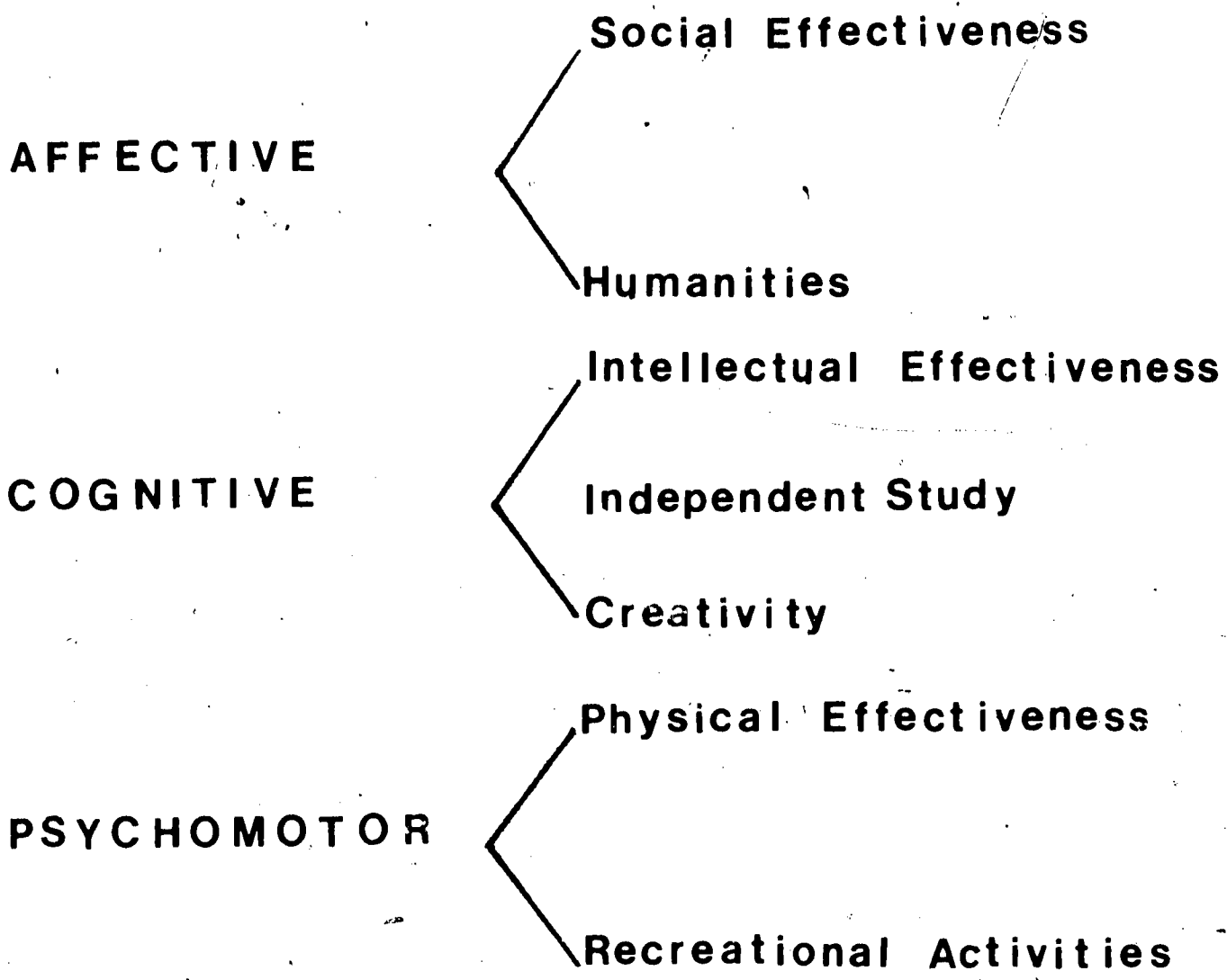
THE CREATIVE*
Compiled by Leonard Lucito

1.   View the work with extra wonder and see magic in it;

2.   Are learning by experimenting, manipulating objects in many ways, and using stories to
     exercise their imaginations at preschool age;

3.   Are able to be conforming or nonconforming as the situation demands;

4.   Try to find answers to their question in their way;

5.   Have extremely long attention spans and the ability to pursue an activity in which they are
     interested for extra long periods of time;

6.   Can tolerate disorder and ambiguity;

7.   Are able to organize themselves and ideas;

8.   Tend to see familiar things and situations in unusual ways and in greater depth;

9.   Often prefer to learn by creative ways rather than by being told by an authority;

10. Seem to learn considerably from fantasy as it aids in solving their problems of development;

11. Display a positive self-image;

12. Have an attraction toward the unconventional and toward complexity;

13. Seem to rely more on their own evaluations than on others;

14. Come from family backgrounds characterized by lack of overdependence of children on parents
     and stress of conformity by parents; strong feelings are expressed in the family; both fathers
     and mothers relate strongly and positively to the child even though the mother is ambivalent
     in her mothering feelings; more often than not the most creative child is the older sibling;
     fathers are usually engaged in occupations allowing for autonomy and independence;

15. Build a reputation for having wild or silly ideas, particularly the boys;

16. Display humor, playfulness, and relaxation in their creative products;

17. Wish to work alone at times;

18. Are high academic achievers provided they have a minimum IQ score of around 120;

19. Can integrate opposing impulses such as destructiveness and constructiveness;

20. Select fewer conventional occupations (e.g., lawyer, doctor, professor) and select more
     unconventional ones (e.g., adventurer, inventor, writer).

*Lucito, L. Creativity Traits. Atlanta: Georgia State University, 1972. Unpublished manuscript.

Lucito added traits from a study by Schaefer (1970) in which he describes 10 highly creative girls
at the high school level. Schaefer's results indicated:

1.   They cultivated one or two close friends rather than a wide circle of acquaintances;

2.   They were open to a wide range of fantasy feelings;

3.   They identified with parents but appeared emotionally independent;

4.   Friends, relatives, and teachers provided models of creative behavior, particularly their
     fathers;

5.   Their parents were non-controlling with strong cultural intellectual interests;

6.   They engaged frequently in creative activities and were often rewarded for such behavior;

7.   They learned to read at an early age and still are avid readers;

8.   High academic success was achieved with little apparent effort.

Curriculum Units

AFFECTIVE
- Social Effectiveness
- Humanities

COGNITIVE
- Intellectual Effectiveness
- Independent Study
- Creativity

PSYCHOMOTOR
- Physical Effectiveness
- Recreational Activities

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HIP Curriculum Structure

The Seminar Curriculum is structured in six general areas around a central core of
Independent Study.

1. SOCIAL EFFECTIVENESS (Affective Domain)

   Affective education refers to the emotions, feelings, attitudes, and values in a
   child's development.   It has been called psychological education, self-knowledge,
   confluent education, and humanistic education. The learner's needs, feelings, and
   attitudes and the classroom climate become critical in the learning process.

   Many students in today's schools are deprived of a complete or total education.
   With stress on low level cognitive skills, the student is fragmented and
   psychologically deprived of development in the affective self. Motivation
   imposed from outside (threat of punishment or withdrawal of approval) leaves
   the student without internal motivation. The denial of individual feelings,
   attitudes, and values immobilizes the student and prevents the development of
   the fully functioning person.

   The Seminar Curriculum encourages a positive attitude toward learning, a healthy
   self-concept, pride in the gifts and talents of self and others, a sense of
   responsibility to society, and a willingness to consider the rights and needs of
   others--through instruction in effective discussion skills and group dynamics.

2. HUMANITIES

   The Seminar Curriculum has an integrated sequential program designed to develop
   the students' awareness of humanity's beliefs and contributions through the
   centuries, as reflected in certain basic themes and styles in literature and
   drama, music, and art and architecture.

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HIP Curriculum Structure (cont'd)

3. INTELLECTUAL EFFECTIVENESS (Cognitive Domain)

    Seminar Thinking Skills sessions are designed to develop mental abilities in 90 "cells" of the Structure of Intellect Model, as identified by Guilford (1957 et al; also see Meeker, 1969)-to encourage bright kids to use their abilities and develop their potential:

Operations	X	Contents	X	Products
Cognition				Units
Memory				Classes
coNvergent production		Figural		Relations
Divergent production		Symbolic		Systems
Evaluation		seMantic		Transformations
				Implications

    Each distinct ability is identified by its own trigram.

    For example, a person who can quickly assemble the seven tangram pieces into a square, and then reassemble them into a triangle, parallelogram, rectangle, trapezoid, or any other given figure, has ability in NFT--coNvergent production of Figural Transformations.

    A good speller is strong in MSS--Memory of Symbolic Systems; while one who can effectively judge whether the solution to a math or logic problem "makes sense" has ability in ESI--Evaluation of Symbolic Implications.

    Someone with rich concepts and a large vocabulary is strong in his/her CMU cell--Cognition of SeMantic Units.

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HIP Curriculum Structure (cont'd)

Work with basic structures--the elements of perception--includes lots of hand-on experience with figural, symbolic, and semantic didactic equipment. To reinforce concepts developed in class, each student receives a dittoed HIP Puzzle each week (usually 8½" x 5½" and attractively illustrated) to take home and share with his/her family. Each HIP Puzzle is labeled with a partial trigram to indicate what content and product is stressed. Sources of ideas for HIP Puzzles come from the Dover math and recreation series and other game and puzzle books.

Experience in the figural dimension includes work with tangrams and other geometrix puzzles, black and white Pattern Pending cubes, colored design blocks and mirrors, wooden geometric plane figures and solids, and such commercial games as HI-Q, Switch, and Battleship. A set of 1,000 wooden cubes helps to develop concepts of one, two, and three dimensions--length, area, and volume. HIP Puzzles might deal with toothpick tricks or shape transformations.

Experience in the symbolic dimension includes work with word search puzzles, magic word squares, magic number squares, and commerical alphabet and number games such as Spill 'n' Spell, Boggle, Tuf, a Krypto. HIP Puzzles might involve anagrams; number series, or logic r... iories.

Experience in the semantic dimension inclua k with Wordcraft puzzles, vocabulary elements from Latin and Greek, anu anything else that enriches vocabulary and enhances meaning. HIP Puzzles might feature mythology quizzes or hink pinks.

Work with basic processes--the means of con ptualization--includes experience in using basic thinking operations (Acc tion of knowledge, Translation, Interpretation, Extrapolation), and higher level thinking operations (Application, Analysis, Synthesis, Evaluation.)

HIP Curriculum Structure (cont'd)

The following descriptions of thinking levels are adapted from Bloom (1957).

Basic Thinking Processes (Subsumed under Recall)

Acquisition
Perceiving, storing, and retrieving basic information
(data level)

Example:
Locating specific information on a given topic and copying it verbatim

Translation
Putting ideas in a communication into parallel form
(concept level)

Example:
Paraphrasing or summarizing given information in a meaningful way

Interpretation
Relating facts, generalizations, definitions, values and/or skills
explicitly on a common sense level
(generalization level)

Example:
Relating two or more items of given information and drawing conclusions
about them in a way that demonstrates insight

Extrapolation
Going beyond trends or tendencies in given data
(implication level)

Example:
Extending or projecting from given information and predicting future
trends

HIP Curriculum Structure (cont'd)

Higher Level Thinking Processes

Application
Using known data, concepts, generalizations, and implications to solve
simulated or real-life problems (transfer-of-learning level)

Example:
Gathering appropriate information and using it to help solve a problem,
conduct an experiment, or demonstrate a principle

Analysis
Solving problems in the light of conscious knowledge of the parts and
processes of reasoning
(formal reasoning level)

Example:
Dissecting a commercial, newspaper editorial, or campaign speech to
determine its validity

Synthesis
Engaging in imaginative, original thinking that may demonstrate fluency,
flexibility, and elaboration
(creativity level)

Example:
Putting together an original essay or drama with elements drawn from
many sources to create a new whole

Evaluation
Setting up appropriate standards or values and determining how closely
an idea or object meets these standards or values
(valuing level)

Example:
Debating the merits of a given law, labor-saving device, or work of
literature, according to developed criteria

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INDEPENDENT STUDY: THE CORE OF THE SEMINAR CURRICULUM

The test of the students' proficiency in thinking--at both basic and higher levels--
is their ability to function effectively as independent learners.   A five-page booklet,
Searching and Sharing: A Guide to Independent Study, and a two-page model Plan for
Independent Study are used to help students get started on this very important work.
In addition, the diagram Curriculum in Bloom interprets--on the students' level of
understanding--how activities at different levels of thinking can be selected to
report the results of their research.

The ultimate goal of the Seminar Curriculum is to help bright youngsters to become
active, self-motivated, life-long learners, able to cope effectively with the glut
of new information and unfamiliar problems.

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4.   CREATIVITY

Exercises in fluency, flexibility, and divergent thinking are designed to develop
the creative and productive thinking essential for dealing with conditions in a
rapidly changing world.   These activities should lead, as well, to more depth and
greater-sophistication in the visual and performing arts.

5.   PHYSICAL EFFECTIVENESS (Psychomotor Domain)

All children need to develop competence in the psychomotor domain.   The Seminar
Program encourages this through instruction in general movement, as well as in
specific psychomotor skills involving visual, auditory, and tactile discrimination
and eye-hand coordination.   Techniques of body control and relaxation are also
stressed.

6. RECREATIONAL INTEGRATIVE ACTIVITIES

The Seminar Curriculum provides students with the opportunity to gain skill in playing such games as chess, checkers, Mastermind, Clue, and Scrabble. Students may also choose to spend some time working with arts and crafts or may take part in special projects in art, dance, drama, and music.

Summary

The HIP project has been committed to the wholistic approach of integrating the three domains: affective (feeling), cognitive (thinking), and psychomotor (acting). The curriculum units are divided into these three areas as a matter of focus. However, it can be assumed the other domains are involved.

The affective domain necessarily involves considerable cognition as well as feeling. The psychomotor domain involves willingness to act, which is an affective component, and the thought process of what is to be done. The cognitive domain is often stimulated by the response of the physical senses to the environment and is accompanied by associated feelings.

The strong involvement of all three domains has been structured into each unit, whether grouped under affective, cognitive, or psychomotor sections of this guidebook. Sample units are included for teachers to use as models. The ultimate aim of the Human Individual Potentialities Program is to recognize the necessity of all three components and to integrate these components into all the curriculum.

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Scope & Sequence

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Scope and Sequence:

<table>
<tr><th></th><th></th><th colspan="2">Grades K-2</th><th>Grades</th></tr>
<tr><th></th><th></th><th>Group I — 1st Year</th><th>Group I — 2nd Year</th><th>Group II — 1st Year</th></tr>
<tr><td>ue.
e</td><td>1</td><td>Personification, pathetic fallacy</td><td>Pun, portmanteau word</td><td>Metaphor (direct, submerged, dead, mixed), simile</td></tr>
<tr><td>r</td><td>2</td><td>Stuart Little - E. B. White
The Lion, the Witch, and the Wardrobe - C. S. Lewis
Fantasy in a realistic setting
Who: Characters, motivation</td><td>The Wind in the Willows - Kenneth Grahame
"Realism" in a fantasy setting
Fable, parable, allegory
Where: Setting</td><td>The Hobbit - J. R. R. Tolkien
Fantasy in a created world
When: Time of day, season (cyclical)
Time in history (linear)
Archetype cluster - Winter</td></tr>
<tr><td>nd</td><td>3</td><td>Listen to "program" music — romantic, impressionistic, expressionistic — about animals, natural and anthropomorphic:
Milhaud - Creation of the World
Stravinsky - Rite of Spring (Fantasia - Dinosaurs)
Saint Saens - Carnival of the Animals
Ravel - Mother Goose Suite</td><td>Listen to "pure," non-program classical music. How does it differ from program music? Is it still possible to imagine animals, natural and anthropomorphic?</td><td>Hear music that suggests magical beasts and monsters from folktales and myths.
Beethoven - Pastoral Symphony
Mussorgsky - Night on Bald Mountain
Stravinsky - Firebird Suite
(See Fantasia)</td></tr>
<tr><td>nd</td><td>4</td><td>Become familiar with the work of classic animal story illustrators:
Beatrix Potter, Ernest Shepard, Garth Williams, etc.</td><td>Become familiar with depictions of animals -- natural and anthropomorphic-- in fine arts from antiquity to the present. Become aware of differences between naturalistic and stylized renditions.</td><td>Become familiar with magical beasts and monsters as depicted in fine illustrations from children's literature and in the fine arts from antiquity to the present.</td></tr>
<tr><td>nd</td><td>5</td><td>"Be" a favorite animal.
Eliminate anthropomorphic characteristics.</td><td>Dramatize selected Aesop's Fables.</td><td>Dramatize stories dealing with magical beasts and monsters.</td></tr>
<tr><td>l
ve</td><td>6</td><td>Heritage
Animal characteristics
Human characteristics
Continents of origin of our ancestors
Heredity
Resemblance of offspring to parents</td><td>Orientation in time
Differences between wild and domestic animals
When different kinds were domesticated
Natural selection, selective breeding, and genetic change
Periods during which our ancestors came to America
Birthdates of grandparents, parents, children
Family trees</td><td>Heritage
"Unnatural" natural history:
Examine replicas of medieval bestiaries
Changing beliefs about natural and unnatural creatures
We are inheritors of accumulated knowledge: free gifts from the dead.</td></tr>
</table>

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Humanities

3-4	Grades 5-6		
Group II — 2nd Year	**Group III — 1st Year**	**Group III — 2nd Year**	
Metonymy (direct, synecdoche, transferred epithet), symbol	Overstatement (hyperbole), understatement (litotes, etc.)	Invocation, apostrophe, irony (antiphrasis), ambiguity, oxymoron, paradox, antithesis	**Figurative Language**
The Golden Fleece – Padraic Colum, Greek mythology in an adventure tale (creation, nature, and hero myths. What: Plot (rising action, climax, falling action; exposition, complications, crisis, reversal, resolution) Archetype cluster: Spring	Greek Gods & Heroes – Robert Graves, A High Wind in Jamaica – Richard Hughes, Comedy and satire, Why: Critical analysis of theme, Archetype cluster: Summer	The Children's Homer – Padraic Colum, Tragedy and epic, How: Critical analysis of style, Archetype cluster – Fall	**Basic Literature**
Hear music based on mythical epics – Wagner – The Ring Cycle, etc.	Listen to music with comic and satiric overtones and mythological references: Mozart – Jupiter Symphony, Holst – The Planets	Listen to music with solemn, tragic, elevated, or heroic overtones. Beethoven – Eroica Symphony, Ninth Symphony; Tchaikovsky – Pathetique Symphony, Romeo and Juliet; Mozart – Requiem; Music in ancient modes from classical times	**Music Background**
Become familiar with the adventure theme in classic illustrations from children's literature and in the fine arts, from antiquity to the present.	Become familiar with comic and genre art and satirical art: Brueghel, Hals, Daumier, Goya, Great political cartoonists, etc.	Become familiar with art communicating noble and tragic aspects of the human spirit: Rembrandt – later portraits; Michelangelo – Bound slaves, Pieta	**Art Background**
View and analyze adventure stories on television and in films. Note conventions. Act out typical plots in skits.	Become familiar with a selected, abridged comedy by Shakespeare.	Become familiar with a selected, abridged tragedy by Shakespeare.	**Drama Background**
Orientation in time, Prehistory and history, Tables of geologic time and calendars of historic time, Methods used by historians to investigate and validate findings	Heritage, Compare classic myths with Nordic and other Germanic myths, American Indian myths, etc. Compare pre-scientific and scientific explanations of natural phenomena	Orientation in time, Myths and legends versus Archeology and history, Develop an outline of world history, Develop mental "time machine" that can transport us to any time and place. Be able to describe milieu "visited"	**Historical Perspective**

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Scope and Sequence:

		Grades K - 2		Grades
		Group I – 1st Year	**Group I – 2nd Year**	**Group II – 1st Year**
Didactic Equipment	1	Informal play with figural equipment	Formal instruction in use of figural equipment	Using task cards with figural and symbolic equipment
SOI Lessons	2	SOI Lessons: Guilford's five operations with figural content and units, classes, relations as products	SOI Lessons: Guilford's five operations with figural content and systems, transformations, implications as products	SOI Lessons: Guilford's five operations with symbolic content and units, classes, relations as products.
Shape Perception	3	Recognition of basic geometric plane and solid figures and their symmetrical properties	Free building, using figural equipment, of designs with bilateral symmetry, both two dimensional and three dimensional	Creating simple designs with bilateral symmetry on a vertical axis
Color Perception	4	Recognition of primary and secondary colors and their complements	Recognition of tertiary colors and their complements	Coloring the designs using a five or six-color range from the 12-color wheel
Spatial Orientation	5	Recognition of cardinal and intermediate points of the compass; directions in the physical world and on maps seen in both horizontal and vertical planes	Recognition, on a globe, of the equator, north pole, south pole, northern hemisphere, southern hemisphere, prime meridian/international date line, eastern hemisphere, western hemisphere	Locating, on a world map, continents and countries within the boundaries of given coordinates
Visual Adjustment	6	Perspective visualization: Actual situation Visual illusions	Perspective visualization: When you have an unobstructed view of a road or railroad tracks, etc., stretching away to the horizon, what seems to happen?	Constructing drawings with one-point perspective
Vocabulary Elements	7	Latin and Greek bases: Numbers Feelings: Love/hate, sadness, happiness, surprise, puzzlement (Use with How Do You Feel? Hats.)	Latin and Greek Bases: The five senses and sense organs The parts of the body	Latin Bases Opposite qualities; other qualities Opposite things; other things Prefixes: Antonym - producing prefixes Modification of meaning Suffixes: Adjective-forming suffixes Noun-forming suffixes Names of Monsters
Functional Grammar	8	Collecting Adjectives and Nouns: (Keep them in card files.)	Collecting Verbs and Adverbs (Keep them in card files.)	Basic Sentence Patterns Silly Sentences (see model lesson) Games: Categories (Hurwitz, pp. 108-111) Endless Word Chain (Hurwitz, pp. 118-119)

Cognitibe Elements

3-4	Grades 5-6		
Group II — 2nd Year	Group III — 1st Year	Group III — 2nd Year	
Using mastery checklists with figural and symbolic equipment	Verbalizing strategies used with figural, symbolic, and semantic equipment	Creating and teaching original figural, symbolic, and semantic games	**Didactic Equipment**
SOI Lessons: Guilford's five operations with symbolic content and systems, transformations, implications as products	SOI Lessons: Guilford's five operations with semantic content and units, classes, relations as products	SOI Lessons: Guilford's five operations with semantic content and systems, transformations, implications as products	**SOI Lessons**
Creating simple designs with bilateral symmetry on a horizontal axis	Creating complex designs with quadrilateral symmetry on vertical/horizontal axes	Creating complex designs with radial symmetry on vertical/horizontal/diagonal axes	**Shape Perception**
Coloring the designs to demonstrate knowledge of hue, value, intensity	Constructing three, six, and twelve-color wheels using rulers, compasses, and protractors	Studying advanced color theory and optics; experimenting with after images, etc.	**Color Perception**
Locating, on a globe, continents and countries within given quadrants of the northern, southern, eastern, western hemispheres	Locating, on maps of various continents, cities intersected by given latitude and longitude lines	Locating, on a globe, cities intersected by given latitude and longitude lines	**Spatial Orientation**
Free-hand sketching of scenes with one-point perspective	Constructing drawings with two-point perspective	Free-hand sketching of scenes with two-point perspective	**Visual Adjustment**

Latin Bases
  Opposite actions; other actions
  Combinations of bases
Prefixes: Assimilation
Suffixes: Verb-forming suffixes
        Adverb-forming suffixes
Words from Mythology (See Asimov, etc.)
	Greek (1)
	  Bases
	  Prefixes
	  Suffixes and combining forms
	Words from the physical sciences
		Greek (2)
		  Bases
		  Prefixes
		  Suffixes and Combining Forms
		Words from the Biological Sciences and Medicine
			Vocabulary Elements

Sentence Expansion
  Games: Follow the Formula
      (Hurwitz, pp. 298-299)
      Verb Vignettes
      (Hurwitz, p. 310)
      Tom Swifties
      (Hurwitz, pp. 308-309)
	Comparative Grammar
	  Spanish Silly Sentences
	  (Compare with English word order.)
		Comparative Grammar
		  Spanish Sentence Transformations
		  Negative, Interrogative
		  (Compare with English sentence transformations.)
			Functional Grammar

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		Grades K - 2		Grades
		Group I – 1st Year	Group I – 2nd Year	Group II – 1st Year
Knowledge/ Comprehension	1	Guided group activities in basic cognitive processes: Acquisition, Translation Defining (Martin, pp. 36-39) Definition by showing example function operation context	Guided group activities in basic cognitive processes: Interpretation, Extrapolation Defining (Martin, pp. 35-36) Definition by synonym analysis synthesis negation analogy	Task card activities in basic cognitive processes: Acquisition Translation Definition, classification, and generalization (Myers, Ch. 17)
Thinking Skills	2	Classifying Classification exercises using pictures, small toys, and other objects	Classifying Classification exercises using attribute materials	Guided group activities in higher level cognitive processes using Bloom's Taxonomy: Application Analysis
General Reasoning	3	Informal hypothesizing (Glasser open-ended class meetings)	Informal investigation based on hypothesizing	Elimination logic exercises (Memphis, pp. 40-43)
Communicating	4	Communicating Description - Spatial order Narration - Chronological order	Communicating Exposition - Explaining } Logical Order Argumentation - Proving	Instruction in basic research techniques leading to short-term (3-week) independent study projects
Distinguishing/ Evaluating	5	Distinguishing reality from fantasy	Distinguishing fact from opinion	Distinguishing among several kinds of truth: intuitional, testimonial, mathematical, experimental (Myers, Ch. 14)

Cognitibe Processes

3-4	Grades 5-6		
Group II – 2nd Year	Group III – 1st Year	Group III – 2nd Year	
Task card activities in basic cognitive processes: Interpretation Extrapolation Language and reality (Myers, Chs. 11-12)	Indirect uses of language (Myers, Ch. 22; Beardsley, Chs. 4-5)	Learn and play the Propaganda Game	**1 Knowledge/ Comprehension**
Guided group activities in higher level cognitive processes using Bloom's Taxonomy: Synthesis Evaluation	Focus on complementary thinking skills: Convergence Analysis Deduction Cause and effect Concretization	Focus on complementary thinking skills: Divergence Synthesis Induction Effect and cause Abstraction	**2 Thinking Skills**
Sentence-reasoning logic exercises (Memphis, pp. 35-39)	Formal deductive reasoning (Myers, Ch. 19; Beardsley, Ch. 2; Martin, pp. 72-91) Principles of Aristotelian formal logic (Johnson, pp. 6 - 10) Related fallacies	Formal inductive reasoning (Myers, Ch. 17; Beardsley, Ch. 3; Memphis, pp. 21-25) Principles of Non-Aristotelian General Semantics (Johnson, pp. 171 - 184) Related fallacies	**3 General Reasoning**
Instruction in refined research techniques leading to long-term (9-week) independent study projects	Teaching basic research techniques to others	Teaching refined research techniques to others	**4 Communicating**
Distinguishing among reports, inferences, and value judgments (Myers, Ch. 21)	Evaluating relatively simple, concrete ideas, situations, and problems 1) Considering purpose in evaluation 2) Developing appropriate standards 3) Measuring subject for evaluation against standards established	Evaluating relatively complex, abstract ideas, situations, and problems	**5 Distinguishing/ Evaluating**

BIBLIOGRAPHY
FOR HUMANITIES AND INTELLECTUAL EFFECTIVENESS

The books listed below proved directly or indirectly useful in the preparation of the Scope and Sequence chart as well as most of the Model Lessons In Humanities and Intellectual Effectiveness.

All of the lessons I have personally authored have been structured to include an introduction and five parts, with activities keyed to Bloom's five levels of thinking.

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Taxonomy with Model Lessons

1. AFFECTIVE DOMAIN - FEELING

    1.1 Social Effectiveness
         1.1.1 Group Dynamics
                "Brainstorming"
                "Talking Ears"
                "Feeling Words"
                "Face Me"
                "Show Me"
                "Gesticulate"
         1.1.2 Leadership Skills
                "Merlin Says"
         1.1.3 Discussion Skills
                "Chaos"
         1.1.4 Class Meetings
                "Boundary Breakers"
         1.1.5 Self-Concept Building
                "Who? What? Why? Wheels"
                "Mirror - Mirror"
                "Secret Pal"
                "Minute Friends"
                "Rocks"
         1.1.6 Valuing
                "Coat of Arms"
                "What's In My Desk?"
                "Hex Signs"
         1.1.7 Career Awareness
                "Career Fair"

    1.2 Humanities
         1.2.1 Figurative Language
                "Caricature and Metaphor"
         1.2.2 Literature
                "Kids and Pirates"
         1.2.3 Background In Music, Art, Drama
                "Monster Mania"
         1.2.4 Historical Perspective
                "Roots and Branches"

2. COGNITIVE DOMAIN - THINKING

    2.1 Intellectual Effectiveness
         2.1.1 Instruction in Perceptual/Conceptual Elements
                2.1.1.1 Didactic Equipment and Games
                         2.1.1.1.1 Figural
                                    "Pattern Pending"
                         2.1.1.1.2 Symbolic
                                    "Clue"
                                    "Anagrams"
                                    "Number Hunt"
                                    "Magic Square"
                         2.1.1.1.3 Semantic
                                    "Alphabet Appetite"
                                    "Fast Freddie Fights Fires"
                                    "Kate"
                2.1.1.2 SOI Lessons
                         2.1.1.2.1 Figural
                                    "Thinking With Shapes"
                         2.1.1 2.2 Symbolic
                                    "Thinking With Symbols"
                         2.1.1.2.3 Semantic
                                    "Picture Perfect"
                2.1.2.3 Shape Perception
                         2.1.1.3.1 Basic Plane and Solid Geometric Figures
                                    "Polygons"
                         2.1.1.3.2 Symmetyry
                                    "Snakes and Swans"
                2.1.1.4 Color Perception
                         2.1.1.4.1 Hue
                                    "Rainbow Colors"
                         2.1.1.4.2 Intensity - pure/neutral range
                                    "The Dull and Bright of It!"
                         2.1.1.4.3 Value - light/dark range
                                    "The Dark and Light of It!"
                2.1.1.5 Spatial Orientation
                         "Dizzy Directions"
                2.1.1.6 Visual Adjustment
                         2.1.1.6.1 General Introduction to Perspective
                                    "The Magic Window"
                         2.1.1.6.2 Linear Perspective
                                    "The Incredible Vanishing Point"

2.1.2 Instruction in Using Basic Processes
     2.1.2.1 Acquisition, Translation, Interpretation, and Extrapolation of
           Basic Knowledge
              "Lord and Lady"
     2.1.2.2 Application of Specific Higher Level Thinking Skills to
           Knowledge
              "Life"
     2.1.2.3 General Reasoning
           2.1.2.3.1 Hypothesizing
                  "Hypothesizing"
           2.1.2.3.2 Elimination Logic
                  "Mini-Mystery"
           2.1.2.3.3 Deductive Reasoning
                  "Deduction"
           2.1.2.3.4 Principles of Aristotelian Formal Logic
                  "The Big A"
           2.1.2.3.5 Inductive Reasoning
                  "Induction"·
           2.1.2.3.6 Principles of Non-Aristotelian General Semantics
                  "The Big Non-A"
     2.1.2.4 Communicating
           2.1.2.4.1 Description
                  "Description"
           2.1.2.4.2 Narration
                  (No lesson included)
           2.1.2.4.3 Exposition
                  "Exposition"
           2.1.2.4.4 Argumentation
                  (No lesson included).
     2.1.2.5 Evaluating
           2.1.2.5.1 Distinguishing Reality From Fantasy
                  (No lesson included)
           2.1.2.5.2 Distinguishing Fact From Opinion
                  (No lesson included)
           2.1.2.5.3 Distinguishing Among Several Kinds of Truth
                  "Several Kinds of Truth"
           2.1.2.5.4 Distinguishing Among Reports, Inferences, and Value
               Judgments
                  "Reports, Inferences, and Value Judgments"

2.2 Creativity
    2.2.1 Experience in multiple talent Areas
        2.2.1.1 Basic Creativity: Fluency, Flexibility, Originality
              "Silent Spaghetti"
               "Marshmallow Madness"
        2.2.1.2 Planning: Elaboration, Sensitivity to Problems, Organizing
            Abilities
               "Jazzy Junk"
       2.2.1.3 Communication: Expressional Fluency, Associational Fluency,
            Word Fluency
               "Thimble Thoughts"
       2.2.1.4 Forecasting: Conceptual Foresight, Penetration, Social Awareness
             "What If...?"

3. PSYCHOMOTOR DOMAIN - DOING

3.1 Physical Effectiveness
    3.1.1 General Movement Thinking Activities
        "Push Me-Pull You"*
        "Mapping Acrobats"*
        "Hop-Skip-Jump"*
        "Quadrant Man/Quadrant Woman"*
    3.1.2 Discriminative Thinking Activities
        "Jumping Eyes"*
        "Tongue Thought"*
        "The Eyes Have It"*
        "The Great Eye Hunters
    3.1.3 Visual Thinking Activities
        "Parquetry"*
        "Pegboard"*
        "Hodge Podge"*
    3.1.4 Auditory Thinking Activities
        "Man or Beast"
    3.1.5 Hand Thinking Activities
        "Thinking Fingers"*
    3.1.6 Graphic Thinking Activities
        "Calligraphy"
    3.1.7 Techniques of Relaxation Activities
        "Magic Movements"

    3.1.8 Self-Expression Through Movement
        "Beat of the Drum"
    3.1.9 Mind/Body Integration Activities
        "Concentration-Espanol"

3.2 Recreational Integrative Activities
    3.2.1 Games and Equipment
        "List of Games and Equipment"
    3.2.2 Arts and Crafts
        "Kaleidoscopic Symmetry"
    3.2.3 Special Projects in Art, Dance, Drama, Music
        "American Indian Dances"
        "Sleking"
        "7-Jumps"

*These lessons were adapted from Thinking Goes to School by Hans G. Furth and Harry Washs, (New York: Oxford University Press, 1974.). They could not be included in our guidebook because permission had not been received to use them before our publication deadline.

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Concept/Competency
(idea)   (knowledge/skill)

A MODEL FOR SETTING OBJECTIVES AND
IDENTIFYING BEHAVIORS

This is a statement of the concept, idea,
understanding, knowledge, and competency
or skill the student should have as a result
of experiencing this lesson.

LEVEL __grades__   TIME __suggested time__

ENTRY CONCEPTS:	MATERIALS:
This is a summary statement of the entry behavior of kind of background the student should possess.	

TEACHER TASKS:

INTRODUCTION:

	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS
	The student:	In order to:	

LESSON DEVELOPMENT:

Recall
Application
Analysis
Synthesis
Evaluation

Physical Skills	Thinking Behavior	Specific learning explored

End goal or instructional objective.

MODEL OF CURRICULUM UNITS

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Concept/Competency
(idea or knowledge/skill)

DETAILED
EXPLANATION OF FORM

This is a statement of the concept, idea, understanding, knowledge, and competency or skill the student should have as a result of experiencing this lesson.

A suggested guide of approximate time

LEVEL ___ grades ___ TIME ___ approximate time

ENTRY CONCEPTS:	MATERIALS:
This is a summary statement of the entry behavior or kind of background the student should possess. It may be written as a statement or as a behavior, beginning with "Ability to---".	List materials the teacher will need to prepare. It is often assumed the teacher will have access to standard classroom equipment such as tables, chairs, chalkboard, etc.

TEACHER TASKS: (What the teacher does)

INTRODUCTION: Teacher tells, reads, asks, describes, shows, etc. in order to provide an experience for children.*

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	In order to:	

LESSON DEVELOPMENT:
Activities move generally (on Bloom's Taxonomy) from:
   Recall
   Application
   Analysis
   Synthesis
   Evaluation

Each lesson may vary, interchange, or stress certain categories.

*It is to be expected that the students will work toward attainment of the stated goals and activities in accordance with their ability and maturity levels.

(physical skills)	(thinking behavior)	Brief statement of specific learning explored or discovered.
speaks	recall and	
moves	understand	
plays	apply	
listens	analyze	
reads	synthesize	
writes	evaluate	
	(Bloom or Guilford terms)	

End Goal or Instructional Objective
It is expressed in operational terms in the form:
"Given the opportunity to ___ , the student
will ___ " or "As the result of experiences
with the above process, the student will (know,
demonstrate) ___ ".

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Curriculum Units

Affective

Brainstorming

Concept/Competency

GROUP DYNAMICS

Student will learn group processing while using deferred judgment.

Developed by: Klonda Ball

LEVEL __K - 4__   TIME __20 min. - 1 hour__

ENTRY CONCEPTS:

--Increase awareness of own capabilities in contributing to group process

--Ability to defer critical judgment

MATERIALS: Blackboard, chalk
Written rules for brainstorming
Paper for small group work

(left margin, vertical) SOCIAL EFFECTIVENESS   AFFECTIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	
INTRODUCTION: Call the children into a circle. Explain the rules for brainstorming, saying, "This is the way big companies solve their problems or develop new products. What can we come up with? Explain rules of brainstorming.	listens	recall	rules of brainstorming
LESSON DEVELOPMENT:			
1. Select a chairperson and recorder (older children can work together in smaller groups).	prepares	apply	brainstorming to problem.
2. Students "brainstorm" the characteristics of a good leader.	participates	investigate	possible problem solutions.
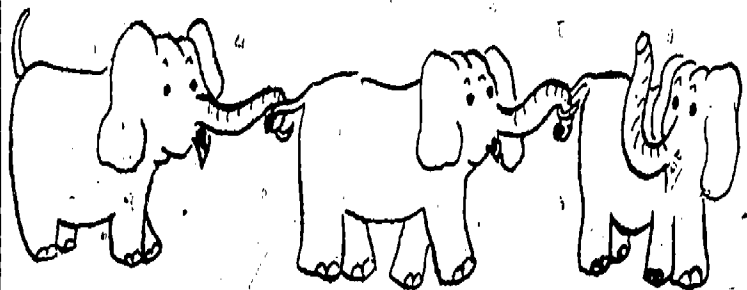
Brainstorming

Discuss the characteristics and decide
as a group which are more relevant.

'ALUATION:

Discuss the Brainstorming experience and
the control necessary to defer judgment
of others' suggestions.

*Given an opportunity to
experience brainstorming
the student will discover
an operational tool for
improved idea production.*

ESOURCE:
Based on an idea postulated
by Alex F. Osborn in 1948
and since developed by many
others.

re-arranges   create   meaningful problem
solutions   solutions.

* * * * * * * * * * * * ** * * *
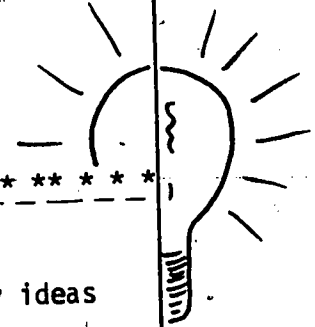
BRAINSTORMING

1. Think of as many ideas
    as you can.

2. Call out every idea that
    comes into your head; the
    more the better.

3. Add on ideas or combine
    two or more.

4. Do not criticize any
    idea, your's or anyone
    else's.
* * * * * * * * * * * * * * * *

TALKING EARS

GROUP DYNAMICS

Learning to listen can be accomplished by learning how poorly we listen--and talk.

Developed by: Klonda Ball   LEVEL ___1 - 4___   TIME ___Approx. 15 - 20 min.___

	ENTRY CONCEPTS:	MATERIALS: Large ear with mouth for talking as display material
SOCIAL EFFECTIVENESS	--Ability to share whispering messages. --Ability to cooperate with a group in resolving problems	

	TEACHER TASKS:		STUDENT	
			ENABLING BEHAVIORS: The student: In order to:	LEARNINGS:

	TEACHER TASKS	The student:	In order to:	LEARNINGS
AFFECTIVE	INTRODUCTION: Say, "Today we are going to play a listening game but we will talk, too--you'll like "talking ears." LESSON DEVELOPMENT: 1. Arrange children in a circle in groups of five. Whisper a simple message in one student's ear; he/she returns to the circle and whispers the message to the person on his/her left. The message continues around the circle until everyone has heard it BUT the starter.	participates	restate	message delivered by the receiver.

When the groups have finished passing the messages, ask the message keeper to repeat what he/she heard. Then ask the message starter to repeat what he/she heard and compare discrepancies.	compares messages	discover	poor communication of whispered message
3. Repeat the activity with more complicated messages. Then discuss the experience: --Have you ever been involved in a message that got mixed up? What happened? How did it feel? Did the message ever get straightened out? --What causes messages to get twisted? --Can you think of a situation when it would be extremely important to keep a message straight?	participates again discusses	translate discover	more complicated messages. causes of poor communication.
4. Repeat the activity. Stress the need for accuracy. <u>Urge the students to do whatever they must do to assure that the message will be passed correctly</u>. Note their solutions. After several attempts, discuss their new solutions.	participates	conduct	more effective communication patterns--new solutions to the problem.

EVALUATION:

The students try the recommendations to determine the most effective solution.

Given the opportunity to perform talking and listening skills, the student will develop concentrated listening and demonstrate effective communication skills.
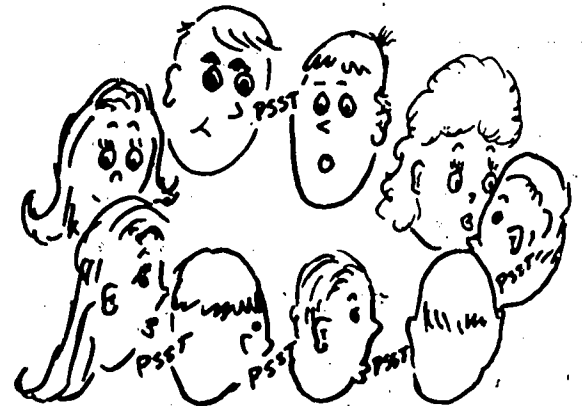
II

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FEELING WORDS

GROUP DYNAMICS

There are a variety of words to express each feeling we have.

Developed by: Klonda Ball

LEVEL 1 - 4   TIME Approx. 30 min.

SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
--Ability to pantomime feeling words --Ability to cooperate in group activity of guessing	Stop watch or clock with second hand Papers with feeling words in a box

AFFECTIVE:

TEACHER TASKS:	STUDENT		
		ENABLING BEHAVIORS:	LEARNINGS:
		The student: In order to:	
INTRODUCTION: Say: "Some words in our vocabulary express our feelings so well the words almost reach out and grab you." **LESSON DEVELOPMENT:** 1. Divide the class into two teams. No. 1 Team sends the first pupil to draw a word from the box. He then must make up a descriptive phrase or sentence which communicates the word <u>without saying the word itself.</u>		reads interpret composes a' Illustrate sentence	word message to be delivered. word to be discovered.

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Synonyms, gestures, postures and facial expressions may be used but the feeling word must not be spoken.

EXAMPLE: The word may be joy. The student may say, "I am so filled with happiness I am almost ready to burst."

2. The guessing team must identify the word within 30 seconds. Equivalent words are acceptable, i.e. joyous for joy.

3. If a player uses the actual word, he/she loses that turn. When a team guesses the word, they win 1 point. If the player's team does not guess accurately in 30 seconds, the opposing team gets a chance to guess. The teacher calls time and keeps the team scores and judges the equivalent words.

EVALUATION:

The teams take alternate turns. The highest scoring team wins.

A LIST OF FEELING WORDS:

anger	boredom	compassion
grief	envy	happiness
loneliness	guilt	pain
shame	jealousy	respect
joy	sadness	horror
fear	love	disgust
delight	hate	pride

Adapted from Leadership Skills Development Syllabus, 1975, by Los Angeles Unified School Dist. Used with permission from Los Angeles Unified School District.

FEAR

ANGER

GRIEF

LONELINESS

JOY
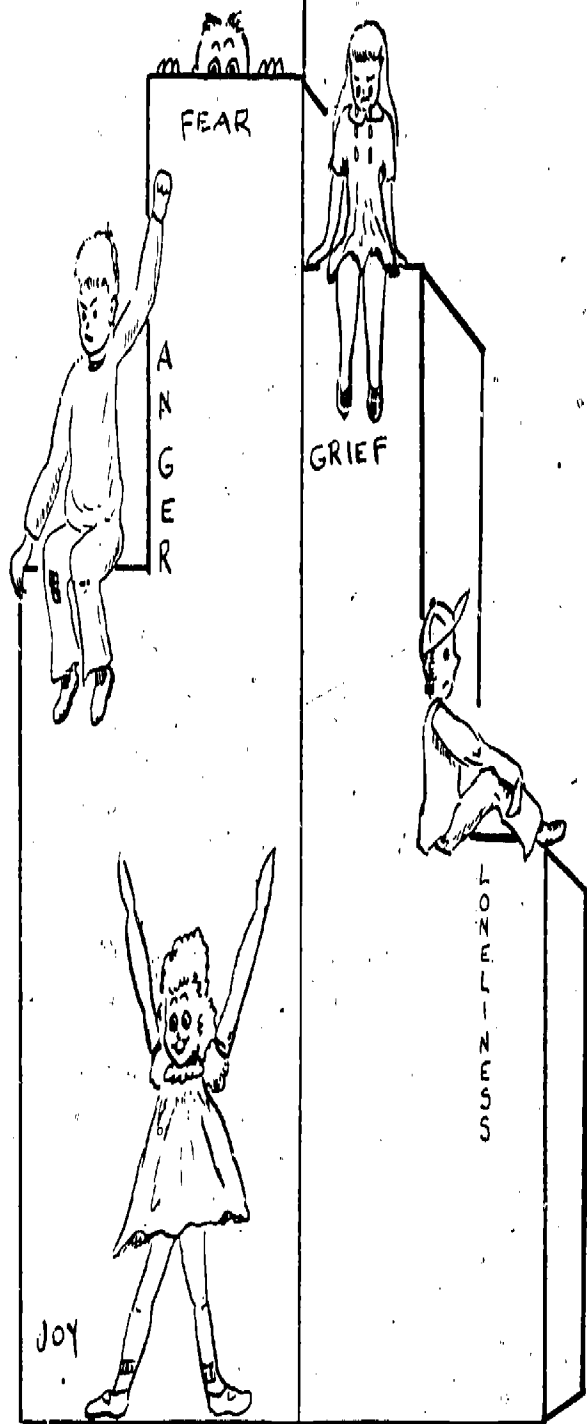
Given a list of feeling words, the student will expand his affective vocabulary by acting out his choice of equivalent words.

FACE ME

GROUP DYNAMICS

Facial expressions are a non-verbal form of communication.
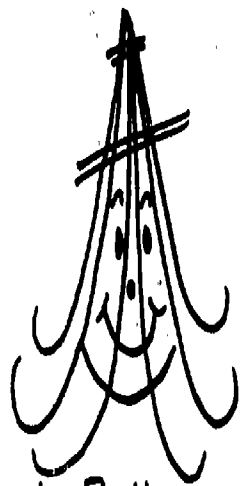
Developed by: Klonda Ball

LEVEL __K - 2__   TIME __1 hour__

SOCIAL EFFECTIVENESS

AFFECTIVE:

ENTRY CONCEPTS:	MATERIALS:
--Ability to relate feelings to facial expression	Pencil Paper Ditto sheets of statements and faces

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: In order to:	LEARNINGS:

TEACHER TASKS:	The student:	In order to:	LEARNINGS:
INTRODUCTION: Recite a variation of the old nursery rhyme: "Sticks and stones will break my bones, But pulling faces won't hurt me!" Discuss how we can send messages with our faces if we choose--"Sometimes our feelings show on our face even if we don't know it."	listens	recognize	feelings show in our faces.
LESSON DEVELOPMENT: 1. Ask children to complete the faces on both sides of the statements (ditto) so that they have illustrated the statements.	draws in the faces	relate	feeling to facial expressions.

When the children have finished
drawing, (10 minutes), ask:
--"Was it easier to show the expression
by drawing the eyes or mouth?"
--"Why are our mouths usually more
expressive than our eyes?"
--"In our drawings we have been express-
ing feelings through facial expressions.
What are some other ways to express
feelings?"

discusses   analyze

the most difficult
aspects of relating
feeling to
expression

I'm happy!
I really like that!

I feel good!
I like that a little.

I don't know.
I don't have any feelings
  in particular.

I'm not pleased.
I don't feel good about that.

I hate it!
I really dislike it!
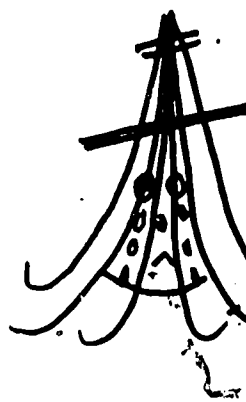
Teach children the game, "Here Comes
An Old Woman" using facial expressions
rather than nonsense instructions.
Those not "it" must frown while "it"
tries to make them laugh.

participates   experience

trying to frown
while another
attempts to make
us laugh with a
facial expression

45

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| | shares | examine | the experience of forced smiling or frowning. |
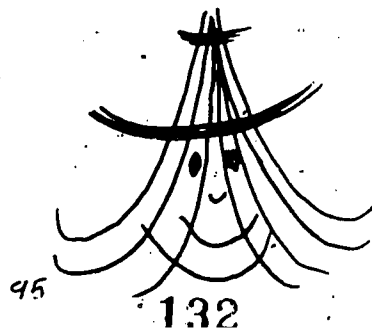
1. Discuss how children felt when they could finally smile; the kinds of things that caused them to smile or frown; how it feels to see someone frowing.

5. Select pupils in groups of three to act out facial expression found in a picture by making a story about it.

| | acts out | compose | skits using specific facia expressions. |

EVALUATION:

Have an ugly face contest. Take pictures of children with Polaroid camera. Have them write a short story about the face.
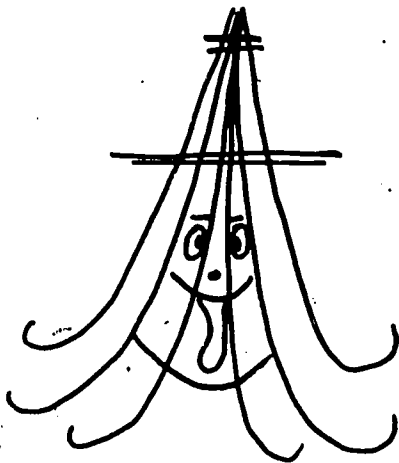
Given the opportunity to perform and respond to facial expressions, the student will be able to relate the feelings communicated to possible causes.

Adapted from Leadership Skills Development Syllabus, 1975, by Los Angeles Unified School District. Used with permission from Los Angeles Unified School District.

9133
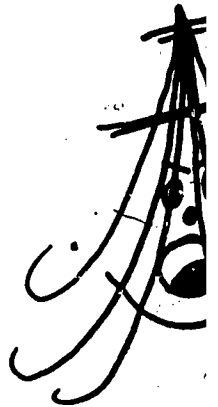
"If the aim of intellectual training is to form
the intelligence rather than to stock the memory,
and to produce intellectual explorers rather than
mere erudition, then traditional education is
manifestly guilty of a grave deficiency."

--Jean Piaget

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Show Me

Developed by: Klonda Ball

Concept/Competency

GROUP DYNAMICS

Effective non-verbal communication is a combination of facial, gesture and postural expression.

LEVEL ___1 - 4___   TIME ___45 min.___

ENTRY CONCEPTS:

--The ability to combine facial expression, gestures and postures to communicate feeling

MATERIALS: Stop watch or clock with second hand

Messages written on slips of paper in small box, hat or can

(left margin, vertical) SOCIAL EFFECTIVENESS

TEACHER TASKS: INTRODUCTION:

Say, "Today we are going to communicate without words. You must SHOW ME what you're trying to say."

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	In order to:	

(left margin, vertical) AFFECTIVE:

LESSON DEVELOPMENT:

1. Divide class into two charade teams. A person from team #One will select a message, give it to the teacher, then "act-out" the message without speaking. Each player is allowed one minute.	reads message	distinguish	what must be relayed by pantomime.
	performs	improvise	message for pantomiming.
The team tries to guess the message and, if they guess correctly within the time limit, 1 point is scored.	guesses	predict	message being pantomimed.
2. The first player from team #Two draws a message and the procedure is repeated. The teacher keeps score and the time.	reads message	distinguish	what must be pantomimed.

EVALUATION:

The first team to score seven points wins the game.	performs	create	non-verbal message.

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I don't want to do it.

...ke you

Will you help me?

I am hurt

I'm scared!

I am furious

Be quiet

We won.

I am sad

I am happy

Go away

I am delighted

I am discouraged

I will not give up

I am bored

I am so ashamed

Given the opportunity to play charades, the student will demonstrate the ability to communicate non-verbally.

GESTICULATE

Developed by: Klonda Ball

LEVEL K - 4   TIME 30 min.

ENTRY CONCEPTS: --Ability to demonstrate non-verbal communication through gesturing --Ability to utilize non-verbal communication to tell a story	**MATERIALS:** Recording of the song, "Gesticulate" from the musical, Kismet.

SOCIAL EFFECTIVENESS

AFFECTIVE:

TEACHER TASKS:

INTRODUCTION:
Play the song, "Gesticulate" from the musical, Kismet.

	STUDENT	
	ENABLING BEHAVIORS:	**LEARNINGS:**
	The student: In order to:	

LEARNING DEVELOPMENT:

1. Have the students define the term "gesture". Ask: "What does <u>gesticulate</u> mean?"

2. Ask students to volunteer to act out simple gestures used in our society. These may include:
   --handwaving - "hello"
   --arm extended palm at right angle - "stop"
   --finger to lips - "be quiet"
   --cupping an ear - "I can't hear"
   --upturned palm - "give it to me"
   --A.O.K. sign - thumb and finger forming a circle, other three extended
   --beckoning with forefinger - "come here"
   --fingers crossed - "good luck".

defines word	describe	actions of gesturing.
performs	apply	non-verbal gestures in communicative form.

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Class guesses at what gestures mean.

Next ask the students, one at a time, to demonstrate these gestures to the class:

--clenched fist - "anger"
--blowing a kiss -"affection"
--clapping hands -"appreciation"
--shaking finger -"displeasure"
--stroking an index finger with other - "shame"
--patting stomach -"enjoyment"
--holding nose -"displeasure"
--tapping fingers -"boredom"
--fingers in ear -"not want to hear."

Discuss with class the feelings that each gesture communicated.

Then ask: "Which gestures communicate negative feelings?" "Which positive?" "Can anyone demonstrate other gestures they use or have noticed other people using?"

ALUATION:

Ask for volunteers to "gesticulate" a story. This may go on for several days.

Given an opportunity to communicate non-verbally, students will learn to identify the feelings they express with the gestures they use.

gestures	model	unknown gestures while others guess
investigates	analyze	non-verbal communications they have experimented with
acts out	originate	a non-verbal performance to share with the group

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MERLIN SAYS

DEVELOPED BY: KLONDA BALL

Concept/Competency

LEADERSHIP

It is important to each student to experience his/her own personal significance and impact on the world--to feel that what he/she does can make a difference.

LEVEL ___K - 4___ TIME ___1 hour___

ENTRY CONCEPTS: --Ability to make independent decisions --Ability to involve a group in creative fantasy that is uniquely each child's own	**MATERIALS:** Book about King Arthur and Merlin

SOCIAL EFFECTIVENESS

AFFECTIVE:

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: In order to:	LEARNI...
INTRODUCTION: Read description of Merlin from a book about King Arthur's Court. **LESSON DEVELOPMENT:** 1. Say, "Now we are going to play a game like Simon Says, only this game will be more magical. It is called "Merlin Says" and Merlin has the power to turn everyone into animals, cars, ballet dancers, waddling ducks or howling wolves.	listens observe	a demonstrat of structure rules of the to be played

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The teacher begins the game by calling,
"Merlin Says all boys to this side of
the room, all girls to that side."

2. Choose a child to be Merlin. Allow the
   child to direct the group for four
   minutes--then let the child choose a
   child to replace him/her. Give every
   student a turn in several sessions of
   activity.

EVALUATION:

Discuss the experiences of power.
"How does it feel to be powerful?"
"Was there something you did not like being
   told to do?"
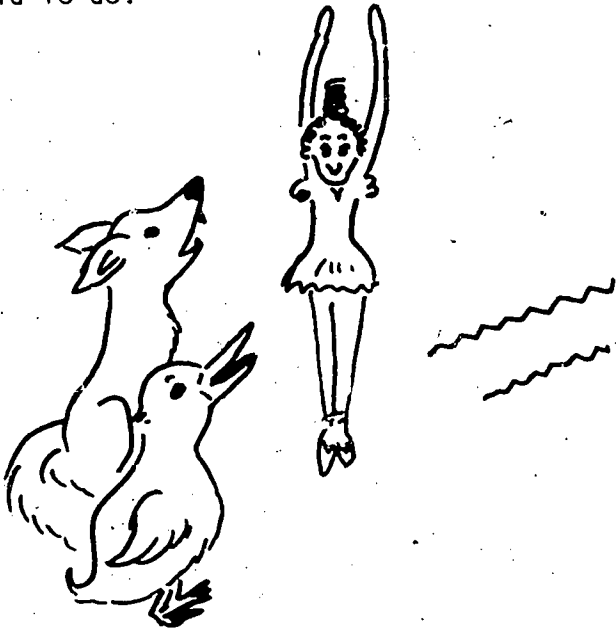
directs	experience	strength in sel
		validated by
		experiencing se
		as the Magical
		Merlin.

participates	relate	feelings about
		wielding or
		yielding power.

Given an opportunity, each child,
instead of seeing himself/herself
as insignificant, gets a chance
to express his/her powerful self
in a creative manner.

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DISCUSSION SKILLS

Decision-making includes responsible action in identifying alternatives, selecting the alternatives most consistent with stated goals and taking steps to implement a course of action.

Developed by: Klonda Ball   LEVEL ___3 - 4___   TIME 45 minutes

ENTRY CONCEPTS:	MATERIALS:		
--Ability to communicate and Interact with others	Pencils and paper		

		STUDENT	
TEACHER TASKS:		ENABLING BEHAVIORS:	LEARNINGS:
		The student: In order to:	
INTRODUCTION: Seat students in a circle. The teacher gives ONLY the following instructions: "You are to calculate the average height in feet and inches of the members of this group. If a member does not know his exact height, he may give an estimate. The group must agree on the answer and appoint someone to submit it to the teacher." (A variation might involve calculating average weight.)		listens determine	the procedure to be used in calculating average height.

(Left vertical label:) AFFECTIVE: SOCIAL   EFFECTIVENESS

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LESSON DEVELOPMENT:

1. Repeat the directions until all students understand them. Then move away and do not talk to or interfere with the group until the problem is solved.

2. Repeat the game several times until the group learns to quickly organize itself.

EVALUATION:

Though the problem may have been solved, the chaos may still have existed. Help the students understand ways of organizing by discussing:

What were you trying to achieve?
Did you look for alternatives?
How did you decide what alternative to use?
What slowed the group down?
What problems did you have in organizing?
    Getting together?
Did anyone take over the leadership?
Is this good or bad?
Was a leader needed?
What responsibility did each member have?
How could the group solve the problem faster
    next time?

interacts   organize   for group
                                      problem-solving.

focuses   examine   how to better
on task   organize the
                                     group for problem-
                                     solving.

Given a problem-solving task, the student will develop the ability to cooperate with a group for the purpose of organizing problem-solving strategies.

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BOUNDARY BREAKERS

Concept/Competency

CLASS MEETINGS

Specific questions provide opportunities for one to express particular ideas and attitudes.

Developed by: Carole Draper

LEVEL _K - 6_ TIME _15 minutes_

(vertical left margin) AFFECTIVE: SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
--Ability to express oneself verbally	NONE

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNING
	The student:	In order to:	
INTRODUCTION:			
The teacher will explain the purpose of Boundary Breakers: the creation of an awareness of self and others by the use of questions which tend to go beyond a superficial depth; to create a sense of belonging; to bring people closer together in group situations.	listens	understand	objectives of Boundary Breakers.
The class members are to sit in a tight circle on the floor, if carpeted, or in chairs.			
A thought-provoking question is "thrown out" to the group. Each person is to answer according to how he/she interprets the			

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question. There is no discussion or debate.
Identical responses may be made if the response
is an honest one for the participant.

Each person is to answer the question. The
first time around the circle a person may
"pass" if he/she has no response at that
time. However, the next time, that person
must respond if at all possible. Explain to
the students that the key word is LISTEN.
As each person answers the others need to
collect his/her responses in their heads in
order to develop an idea of each person.

LESSON DEVELOPMENT:

- After explaining the rules for Boundary
  Breaking, the teacher will have the
  class members form a circle.

- The teacher will then proceed to throw
  out a particular question. Each child
  is then expected to answer the given
  question, first or second time around.

  Samples of these types of questions are:

  1. What color is love?
  2. If you could be a flower, what
     flower would you be?
  3. If you could be a color, what color
     would you be? Why?
  4. If you could visit anywhere in the
     world for one day, where would you
     visit?
  5. If you could speak with anyone in
     the world, living or dead, who
     would you visit with?
  6. What is the title for the last book
     you read?
  7. If you could smash one thing and only
     one thing, what would you smash?

listens	comprehend	rules for Boundary Breakers.
listens to responses	develop	awareness of others.
forms circle	arrange	self in relation to other class members.
answers question	verbalize	feelings and ideas on specific questions.

107 147
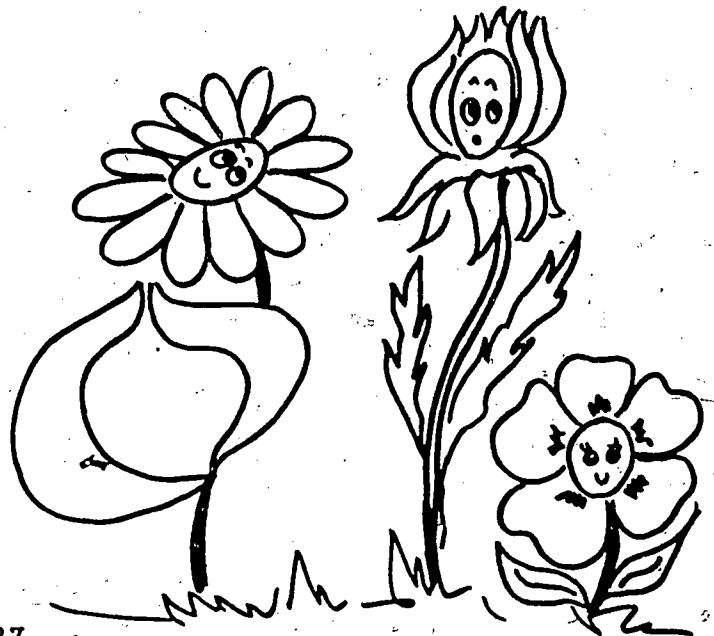
EVALUATION:

The teacher will ask questions like the following:

What did you learn about yourself today?

Which person did you learn most about today, in this session?

Which person do you feel is the most like you?

Which person do you feel is the least like you?
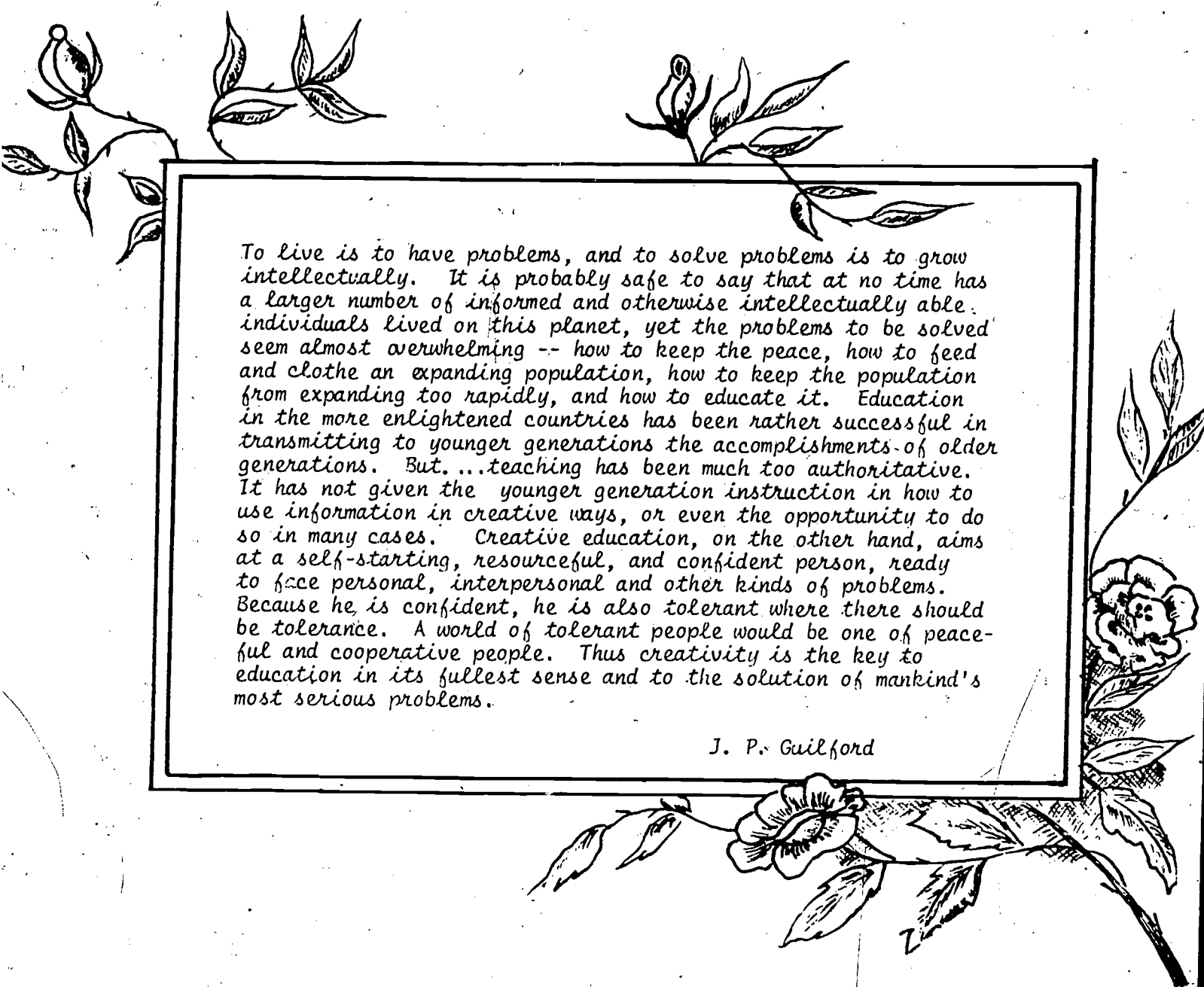
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listens
and
responds

consider

insights gained
by participating
in a Boundary,
Breaker session

Given the opportunity
to respond to a specific
question, the student
will be able to express
verbally his/her
particular feelings
and ideas.

To live is to have problems, and to solve problems is to grow intellectually. It is probably safe to say that at no time has a larger number of informed and otherwise intellectually able individuals lived on this planet, yet the problems to be solved seem almost overwhelming -- how to keep the peace, how to feed and clothe an expanding population, how to keep the population from expanding too rapidly, and how to educate it. Education in the more enlightened countries has been rather successful in transmitting to younger generations the accomplishments of older generations. But. ...teaching has been much too authoritative. It has not given the younger generation instruction in how to use information in creative ways, or even the opportunity to do so in many cases. Creative education, on the other hand, aims at a self-starting, resourceful, and confident person, ready to face personal, interpersonal and other kinds of problems. Because he is confident, he is also tolerant where there should be tolerance. A world of tolerant people would be one of peaceful and cooperative people. Thus creativity is the key to education in its fullest sense and to the solution of mankind's most serious problems.

J. P. Guilford

WHO? WHAT? WHY? WHEELS

SELF CONCEPT

Description of one another helps
each individual to know himself
and others better.

Developed by: Klonda Ball

LEVEL 3 - 4   TIME 45 min.

SOCIAL EFFECTIVENESS / AFFECTIVE		

ENTRY CONCEPTS:

--Ability to evaluate others openly
--Ability to trust another in paired-off
  relationship

MATERIALS: Three 6" circles for each child -
              WHO, WHAT, WHY
              Pencils

TEACHER TASKS: INTRODUCTION:
  Share large wheels with children: "Today
  we are going to help one another get to
  know ourselves better."

STUDENT

	ENABLING BEHAVIORS:	LEARNINGS:
	The student: In order to:	

LESSON DEVELOPMENT:

	ENABLING BEHAVIORS		LEARNINGS
1. Have students pair off with a friend. Each puts his name on the WHO, WHAT and WHY wheels.	pairs off	identify	chooses a partner he/she trusts to work with.
2. Students trade WHO wheels, then each writes five adjectives which describe their partner. For example: friendly, outgoing, bookwormish, athletic, outdoorsy.	trade wheels	produce lists	observe characteristics of partner
3. Then return wheels to original owner who chooses one characteristic he is surprised at or one he disagrees with--places a star near it and gives both the WHO and WHY wheels back to his/her partner to elaborate on.	reads	react	asks for verification of perceived talents or characteristics

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4. The partner next takes the WHY wheel
   and gives reasons <u>WHY</u> that particular
   adjective was chosen to describe his/
   her partner.

EVALUATION:

Finally each person takes his own WHAT
wheel and writes ways to <u>change</u>,
<u>cultivate</u> or <u>enhance</u> the trait.
THIS IS PERSONAL AND IS NO LONGER TO
BE SHARED--IT IS FOR ONE'S <u>SELF</u> ONLY.
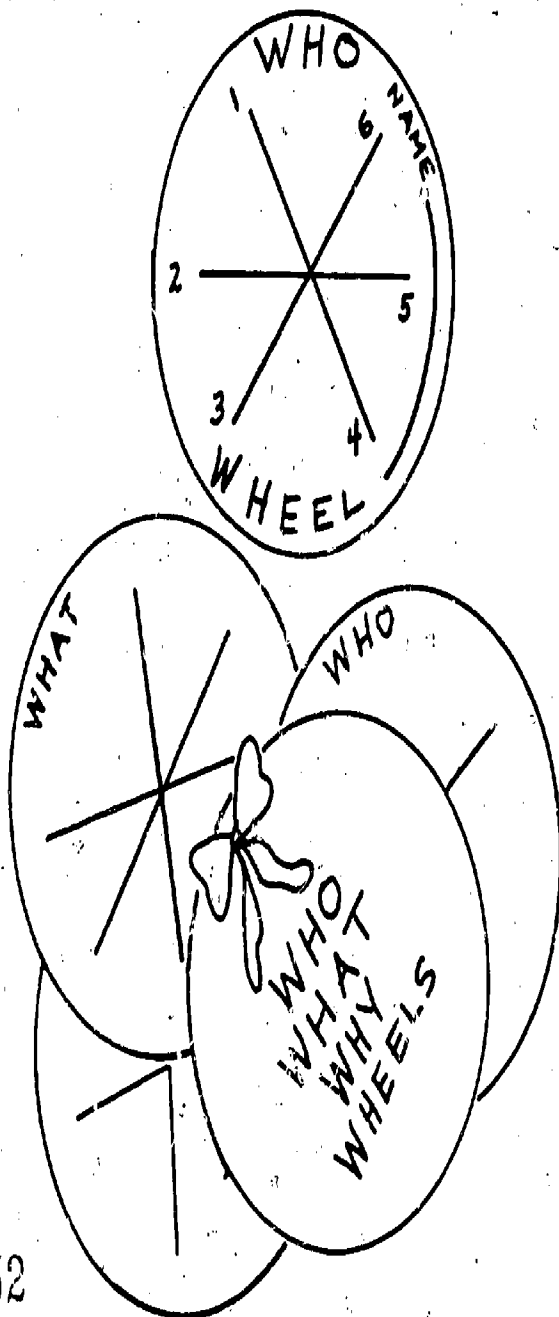
surveys	analyze	understand reasons for making choices
reviews	synthesize	traits in order to choose how to change
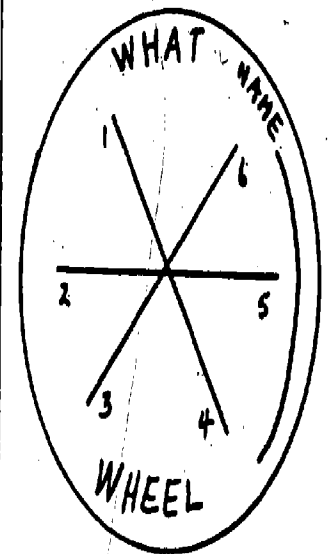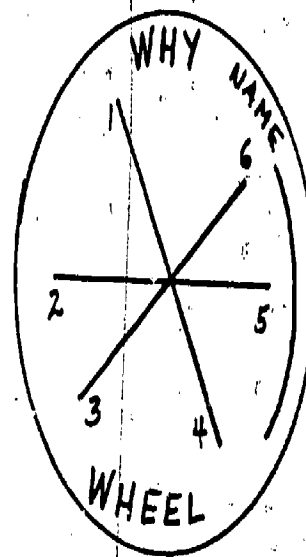
Given the opportunity to talk with another
individual, the student will be able to
describe that person and be able to justify
that description, as well as learn more
about himself.

MIRI
WIBl

Developed by: ł

ENTRY CONCEPTS:
--Ability to express a pc
 self
--Ability to share a posi
 a classmate (no negativ

SOCIAL EFFECTIVENESS

TEACHER TASKS:

AFFECTIVE:

INTRODUCTION:

Introduce the strategy by
reading the story of Snov
Magic Mirror.

LESSON DEVELOPMENT:

1. Pass a framed mirror t
   the class as they sit
   that you have a magic
   but that with this one

"Mir
Who'

Concept/Competency

SELF-CONCEPT

When we focus our assets, we build a strong feeling of self worth.

LEVEL __K - 4__ . TIME __45 minutes__

tement about nent about ts allowed)	**MATERIALS:** Story of Snow White; Mirror with handle; Large decorative mirror for hanging in classroom; Cardboard mirror shape for each student

	STUDENT		
	ENABLING BEHAVIORS: *The student:*	*In order to:*	**LEARNINGS:**
or the le around e. Explain ɔ, say. . . .	listens	experience that	the game will be one of looking for positive attributes in self.

, on the wall, st one of all?	Mirror, mirror, say what you see, Say what you like the best about me."

.‖ 112

2. Each student holds the mirror up to his ear as if the mirror were talking to him.	speaks and repeats rhyme	reinforce	recall of rhyme in order to play game.
3. He/she puts the mirror down.	thinks	decide	what he/she likes best about himself.
4. The mirror is passed on and each student shares a positive attribute with others or passes.	reports	share	what the mirror has said it "likes best" about the student.
5. Variations might include a neighbor listening for, then responding to, a friend's question.	listens	speak	stating what he likes best about his/her friend.
6. Make mirror shapes from cardboard. Place one on each desk. Have every student go around the classroom and write one positive compliment about every other student in the group on the other student's mirror. Those unable to write may attempt verbal sharing.	labels	reflect	positive attributes he/she sees in others.

EVALUATION:

Students gather in a group to discuss how it feels to be told something "good" about oneself.

shares reaction	experience	how others felt trying to accept positive compliments about themselves.

Given an opportunity to receive and give positive compliments, which may be difficult to accept in our society, the student will develop an understanding that it is all right to be complimented and learn how to deal with it.

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Secret Pal

Developed by: Klonda Ball

SELF CONCEPT

Positive supportive relationships
in the classroom build a climate
of acceptance and trust.

LEVEL **K - 4**   TIME **45 minutes**

SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to give positive reinforcement
--Awareness of difficulty in keeping a
   secret

MATERIALS:

1 basket or box
Folded papers with childrens' names written
   on them

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	In order to:	

AFFECTIVE:

INTRODUCTION:

Seat students in circle and explain the
purpose and procedure of activity.

LESSON DEVELOPMENT:

1. Have students draw names from a basket.
   The name each student draws is his or
   her Secret Pal for the week.   Students
   do not reveal their Pal to anyone.

draws name	identify	who Secret Pal is.

157   114   158
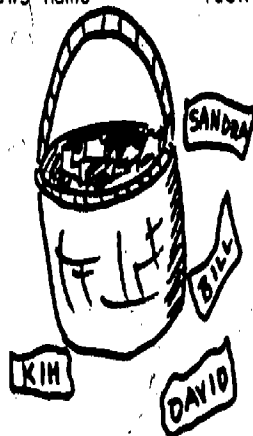
2. During the week the student MUST give at least five special things to his Secret Pal without being discovered:
   - a compliment
   - a typed note
   - a flower
   - a poem, picture or small gift.

3. At the end of the week students reveal their Secret Pal and Thank You's are shared.

4. Students may want to keep their Pals for longer periods.

EVALUATION:

Observe the continuation of Secret Pal relationships after the initial time period has ended.

writes
types
sends
creates
chooses

shares name

give

reveal Pal

gift of acceptanc
to unknown friend
when receiving
nothing in return

to develop friend
in an accepting
way.

?

Given the opportunity, the student will be able to develop positive relationships.

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MINUTE FRIENDS
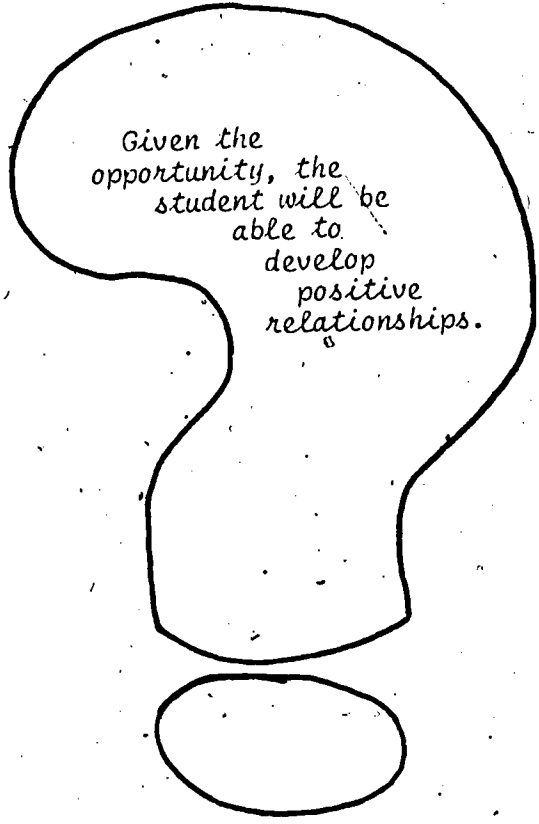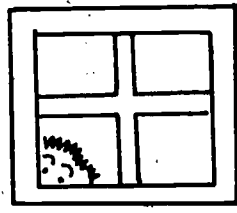
Developed by: Klonda Bell

SELF CONCEPT

Verbal sharing of self history aids in developing initial stages of trust in group interaction.

LEVEL __K - 4__   TIME __45 minutes__

ENTRY CONCEPTS: --Ability to volunteer for participating before a group --Ability to verbally share important biographical facts about self	**MATERIALS:** Record of the "Minute Waltz" sung by Barbra Streisand; OR tape of one minute of music	

SOCIAL EFFECTIVENESS

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: In order to:	**LEARNINGS:**

AFFECTIVE

INTRODUCTION:

The teacher will explain that this experience is a get-acquainted strategy for a new class.

LESSON DEVELOPMENT:

1. Divide the class into groups of three, preferably with students they do not know.	groups	participate	in small group interaction.
2. Let the participants decide who will go first. That person shares as much as he can about himself in one minute. The others then take their one-minute turn.	volunteers	share	history of himself/ herself in one minute.

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3. Next, participants #2 and #3 take one minute to tell participant #1 what they heard him say. Afterwards, #1 and #3 repeat the process for #2 and #1 and #2 for participant #3.	organizes and discusses	present	feedback on shared bio-graphies with others.
4. Resolve the experience by allowing the participants to informally question one another for three additional minutes.	questions	analyze and synthesize	information abou new acquaintanc in class.

EVALUATION:

5. The group discusses reactions to the experience of spending one minute becoming acquainted with another person.

Given the opportunity to inter-relate with others in a short time period, the student will build an acceptance and trust of others through open sharing of selves.
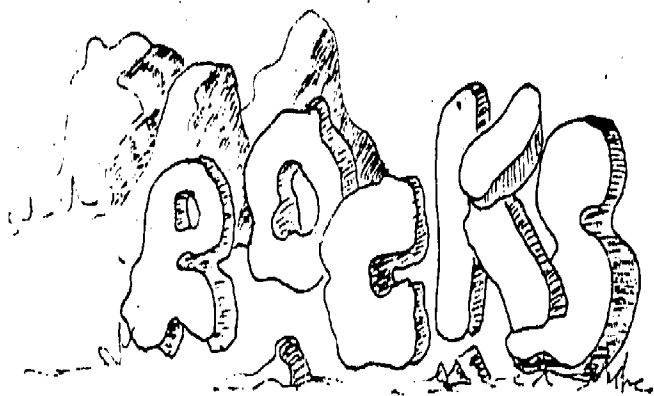
ROCKS

SELF-CONCEPT

Rocks, like humans, have different characteristics of color, shape, texture, size, weight, sharpness, hardness, smoothness.

Developed by: Klonda Ball

LEVEL **K - 4**   TIME **1 + hours**

ENTRY CONCEPTS:	MATERIALS:
--Ability to differentiate between rocks kinesthetically --Ability to classify inanimate objects --Awareness of ability to relate to inanimate objects	1 medium rock for each child 1 bag of small rocks paper and pencils glue, paint, bits of felt, construction paper

(left margin, vertical:) **AFFECTIVE: SOCIAL EFFECTIVENESS**

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: In order to:	LEARNINGS:

INTRODUCTION:

Share a pet rock with the children. Explain the rules for caring for the rock and why this particular rock is a favorite.
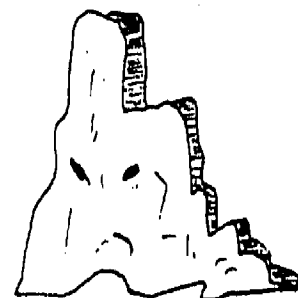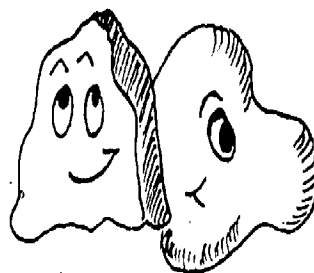
LESSON DEVELOPMENT:

1. Empty large gunny sack of golf-ball sized rocks on the floor--each child chooses one he is attracted to.

2. Have child <u>experience</u> the rock; rub and feel, close eyes, rub face with rock-- examine each detail. Then everyone put their rock back in the pile, move away, CLOSE THEIR EYES and find their own rock by feeling.

ENABLING BEHAVIORS		LEARNINGS
chooses	familiarize self with	identifying interesting characteristics in object.
closes eyes	choose	his/her own familiar rock which can be identified by feel only.

ROCKS

Activities			
3. Pair students off in two's. Have one lie flat on the floor, eyes closed, the other carefully sets the owner's rock on his forehead. The student lies quietly feeling the rock for one minute. Trade positions. Students share experiences.	investigates rock	experience weight	and relate body senses to rock to become AWARE of its characteristics.
	tells others	analyze	how the rock helped each student respond and to know self better.
4. Let class suggest areas of similarities and differences in rocks. Develop different areas of classification.	lists and classifies rocks	develop	skills in classifying objects.
5. Can people be compared in a similar way?	compares	analyze	similarities and differences.
6. Have each student wish for a magic rock. "Pretend your rock is special! How will it be magic? What can it do?"	creates and writes	gather	assorted imaginative facts into a new whole.
7. Students share: "If you could give a magic rock to the world, what would it be? Why?"	imagines	synthesize	assorted imaginative facts into a new whole.
8. Assign students to each take a rock. "Think of all the different things a rock could be. Choose a rock and turn it into something different."	decorates	create	a new item from a rock.
9. Share "Stone Soup" and the "Myth of Sysyphus".	listens	integrate	creative uses rock can be put to in folk tales and myths.

EVALUATION:

Have students tell which activity they liked best.

As a result of this activity, the student will be better able to relate to his/her own characteristics after having become acquainted with an inanimate object.

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VALUES

The use of symbols may encourage
us to think beyond words.
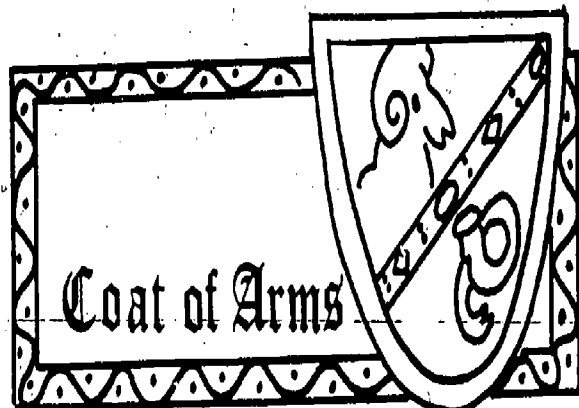
Coat of Arms

Developed by: Klonda Ball

LEVEL __3 - 6__   TIME __1 hour__

SOCIAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to express desirable qualities
  about self
--Awareness of differences between what
  is and what could be in self

MATERIALS:

1 picture of a coat of arms
1 cardboard coat of arms for each child
Crayons

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:	LEARNINGS:
	The student: In order to:	

AFFECTIVE:

INTRODUCTION:

Show the coat of arms picture. Explain
the use of symbolism in commercial logos
and coats of arms.

LESSON DEVELOPMENT:

1. Share coat of arms chart saying,"You
   are to draw a picture in each square
   in answer to the question. Draw
   desirable qualities with which you
   would like to be associated...NOT in
   words but in pictures (simplify words
   for younger children)."

reviews analyze	choices they have
sentences	in order to choose
	what to illustrate.

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2. Have the students keep these questions in mind as they complete their shields.

   Discuss:

   --Do I see my life as just a reaction to others, to outside events?
   --Am I doing what I can to control my life?
   --How can I get more out of life?

3. This is a variation:
   1) What is something you are very good at? What is something you are struggling to get better at? Draw two pictures.
   2) What is one value, a deep commitment, from which you would never budge?
   3) What is the material possession most significant to you?
   4) What is your greatest achievement of the past year? What is your biggest set-back, failure or defeat of the past year? Draw two pictures.
   5) What would you do with your life if you had it to live over?
   6) What three words (qualities) would you like to have associated with you? These could become your personal mottos to live by.

EVALUATION:

Discuss reactions to the experience of making the shields:

"What did you experience?"

Adapted from Meeting Yourself Halfway or Values Clarification: A Handbook of Practical Strategies for Teachers and Students, by Sidney B. Simon, Argus Comm., 1972. Used with permission from Sidney B. Simon.

considers   synthesize
and
questions

Illustrations'
on coat of arms
with each student's
life-style.

Coat of Arms Chart

1. What do you regard as your greatest personal achievement or strength?	2. What do you regard as your family's greatest strength or achievement?
3. What is the one thing that other people can do to make you most happy?	4. What do you regard as your own greatest personal failure?
5. What would you do if you had one year to live and were guaranteed success in whatever you attempted?	6. What three words would you like to have said about you if you died?

Given the opportunity, the student will be able to use abstract symbols to "think" beyond words in designing a statement about his own life choices.

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What's in my desk?

Developed by: Klonda Ball

VALUES

The desk search helps each student understand his own habits of saving, both what he does and does not value.

LEVEL 2 - 6   TIME 30 + minutes

ENTRY CONCEPTS:

--Ability to sort items according to use, fondness for and for discarding

MATERIALS:

Paper, pencil, crayons;
Manila folders;
Desks for each child jammed full of assorted belongings

(left margin, vertical) SOCIAL EFFECTIVENESS

TEACHER TASKS:

(left margin, vertical) AFFECTIVE:

	STUDENT	
	ENABLING BEHAVIORS:	**LEARNINGS:**
	The student: In order to:	

INTRODUCTION:

"Quickly, without thinking about why you are doing it, take everything out of your desk and make a list naming each item."

(The teacher does this too!)

(Make a list of common items for young children on the blackboard or have them illustrate the items.)
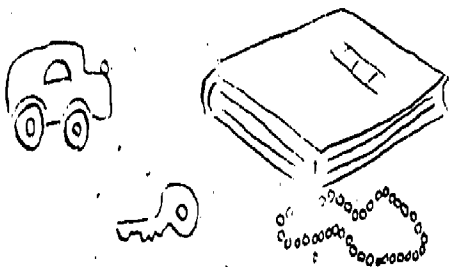
surveys produce	an illustrated
articles	list of the
in desk	contents.
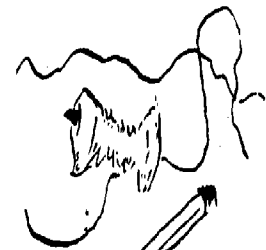
LESSON DEVELOPMENT:

1. Have children code each item with a P, PR, or F. Anything coded with a P is of no further use, unless they are very special--then they will be saved as a MOMENTO.

codes items	analyze	usefulness of articles in the past, present or future.

CODE
P - Past
PR- Present
F - Future

2. Code PR on anything being used right now for school.

codes item	identify	those useful in the present for school.

3. Code F on any items that will be used in the future.

codes items	identify	those useful in the future for school.

4. View the three separate stacks of items. Say: "From the collection of things other than school books, can you say something about who you are? Do you have many personal things? Do you find you think a lot about the future?"

studies items	decide	if child is past, present, or future oriented.

5. Make and decorate folders to store MOMENTO items in.

decorates folders	create	a storage area for saving valuabl momentos in.

EVALUATION:

Discuss "What's In My Desk" as if relates to the students' lives and says a lot about me and what I value.
Conclude:
"Sometimes what we do says more about what we value than what we say."

"Sometimes we need to do something about what we value."

As a result of sorting desk items in terms of the past, present and future, the student will become aware of his response to life in regards to the passage of time--whether he is past, present, or future-oriented.

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Hex Signs

Concept/Competency

VALUES

The choice of symbols for a hex sign will reflect what the student values and hopes to protect.

Developed by: Klonda Ball

LEVEL **3 - 6**   TIME **1 + hours**

ENTRY CONCEPTS:	**MATERIALS:**
--Ability to make value choices for symbolizing	Oaktag for each student Pencils, crayons Balsa wood, acrylic paints Strips of leather

SOCIAL EFFECTIVENESS

AFFECTIVE:

TEACHER TASKS:

STUDENT

		ENABLING BEHAVIORS:		LEARNINGS:
		The student:	In order to:	

TEACHER TASKS	The student:	In order to:	LEARNINGS
INTRODUCTION: The Pennsylvania Dutch decorate their barns with hex signs to ward off evil spirits. A hex sign with rain drops painted on it is believed to help insure crop abundance; a heart is to bring love and romance. Thus, a hex sign often reflects the values of the person who displays it.	listens	assimilate	background information on hex signs.
LESSON DEVELOPMENT: 1. Discuss hex signs and what purpose they serve.	participates	clarify	purpose for which hex signs are designed.

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2. Provide students with sheets of oaktag, pencil: and crayons. Allow them to choose three or more hex design symbols from the HEX DESIGNS chart which reflects some of the things they think are important in life. Symbols may be repeated to provide balance.

For example:

star for success

raindrops for abundance and prosperity

eagle for independence

draws	Identify	hex signs which reflect values of importance to him/her.
designs	organize	picture symbols of values.

HEX DESIGNS

	= raindrops for abundance and prosperity		= maple leaf for beauty
	= oak leaf for strength to meet life's challenges		= bird for happiness
	= heart for love and romance		= dove for peace and tranquility
	= tulip for religious faith		= rosette for joy
			= star for success
	= eagle for independence		= unicorn for honesty and integrity
	= clover leaf for good luck		

. Make hex design necklaces on balsam wood; paint figures with acrylic paints. String on leather strap for wearing around the neck.

designs art objects	formalize	concepts by creating new designs to wear on a necklace.

125   174

VALUATION:

ave students invent their own symbols and
esigns to represent other things in life
hat they value.

ave students examine each others' hex signs
nd decide which values are most important
o the group.

invents	create	a different set
symbols		of value symbolism
		in a hex sign.
examines	decide	which values are
		most important;

Star for
success

Heart for love
and
romance

Unicorn for
honesty and
integrity

From PERSONALIZING EDUCATION: Values
Clarification and Beyond by Leland W.
Howe and Mary Martha Howe, copyright ©
1975, Hart Publishing Company, Inc.

Given the opportunity to design their
own hex symbols, the students will
become more aware of their personal
values and represent them in a tangible
form.

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CAREER AWARENESS

Numerous and various types of career
options are available.

Career Fair

Developed by: Carole Draper   LEVEL K - 6   TIME Several days

<table>
<tr><td rowspan="2">SOCIAL EFFECTIVENESS</td><td>

ENTRY CONCEPTS:

--The ability to understand that most people
are involved in   me type of career

</td><td colspan="3">

MATERIALS:

Books, magazines, pamphlets, filmstrips, people,
etc. that are connected with specific careers.

</td></tr>
</table>

	TEACHER TASKS:	STUDENT		
		ENABLING BEHAVIORS:		**LEARNINGS:**
		The student:	In order to:	
AFFECTIVE:	**INTRODUCTION:** The teacher will first begin working with an intermediate group. She may want to introduce the area of careers by asking the students what their families' careers are, or their relatives' and/or friends'. She will list these responses on the board and ask the students if they can think of other choices that are not listed. The teacher will then list these.	names lists	recall fill in	family career choices. other career choices.

ESSON DEVELOPMENT:

From the list that was formed the teacher explains that each child is to select one career that he/she would like to research, or... if there is a career not listed that he/she would rather do, then select that one.	selects	Identify	career choices to research.
After deciding on a choice, the student begins researching, using basic research skills.	researches	find information	on career choice
After compiling his information on his career choice, the student decides on methods of disseminating the information, such as a report, a mobile, a fact file, a graph, etc.	develops materials	explain	career.
The teacher will then explain that all the student's information will be incorporated into a CAREER FAIR for the younger students (primary). Each student is responsible for constructing a booth on his/her career choice.	constructs booth	provide.	information of career choice.
). The student will include all of his/her means of disseminating the information.			
). After these career booths have been constructed, the teacher will then explain to the younger group that they will be taking a tour of these career booths in order to become aware of or to increase their knowledge of certain careers.	watches listens looks observes notices	be acquainted with, be aware of, become familiar with gain knowledge of	specific careers
The student is encouraged to ask questions about the careers.	asks inquires	gain knowledge of	specific career choices.

ne teacher and students will discuss the
areer booths that they saw. The students
III decide which career, or careers, they
ound most interesting and stimulating.
ne student will write, tape, or draw an
nportant concept of the career they are
ost interested in.
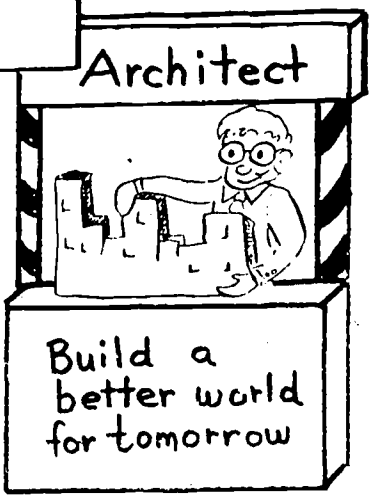
| discusses career booths | decide on | career he/she found most interesting. |
| writes, tapes or draws | conceptualize | important ideas about careers. |

NURSING

HELP
OTHERS

Architect

Build a
better world
for tomorrow

FLORIST

Give flowers

GO NA
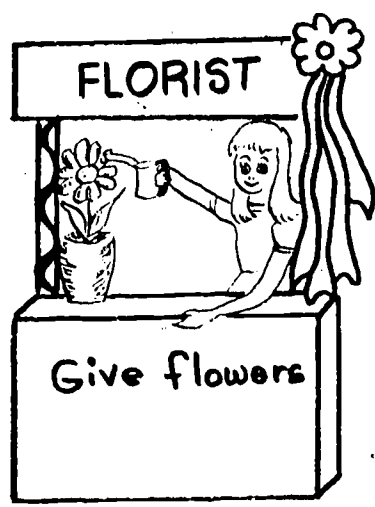
The student will become
aware of the different
kinds of careers and
understand how various
careers are related to
each other.

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Concept/Competency

Caricature AND Metaphor

Developed by: Susan Sager
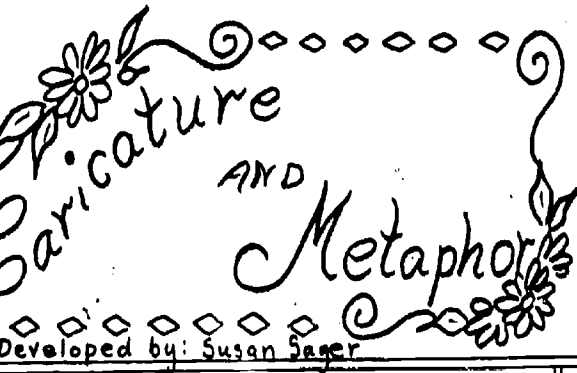
FIGURATIVE LANGUAGE

Caricature exaggerates the real.
Metaphor substitutes a symbol for the real.
Both are used to attract our attention and
to make complex, abstract ideas more
concrete and accessible.

LEVEL 3 - 8   TIME 1 hour

TRY CONCEPTS:

metaphor is one thing standing for another.
Is an implied comparison used to produce
vivid mental im... It is related to
alogy, fable, and parable.

MATERIALS:

A variety of political cartoons referring to
elections and other national and world events,
arranged on a bulletin board;
Chalk, chalkboard;
Drawing materials

ACHER TASKS:

STUDENT		
ENABLING BEHAVIORS:		**LEARNINGS:**
The student:	In order to:	
listens	review	examples of meta-phor and analogy.
recalls	illustrate	examples of meta-phor and analogy, fable and parable, from their own experience.

TRODUCTION:

eview the meanings of metaphor and
nalogy by recalling to the students'
minds examples of each that have been
studied.

sk the students to share additional
examples from their own experience.

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ircafure and Metaphor

ad the students to generalize from the
camples shared and state in their own words
ppropriate definitions of each concept.
ad them to see the relationships between
ie concepts.

ESSON DEVELOPMENT:

. Pointing out the display of political
cartoons and giving the students time to
examine them, ask the students to identify
examples of metaphor.

Using specific examples, ask the students
to identify the reality for which a given
metaphor is the symbol.

Ask the students to tell why they think
speakers, writers, and artists use
metaphor.

. Explain that caricature exaggerates a
reality rather than substituting a
symbol for it.

. Ask the children to point out examples
of caricature and justify their choices.

. Ask students to compare and contrast
caricature and metaphor and explain the
differences.

generalizes	conceptualize	the meanings of the terms metaphor analogy, fable, and parable, and the relationships between them.
examines	identify	examples of metaphor in political cartoons.
examines	discover	the realities which given metaphors symbolize.
imagines	infer	why metaphor is used.
listens	determine	the meaning of the term caricature.
selects	illustrate	examples of caricature in political cartoons
compares	differentiate	caricature and metaphor.

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1. Invite the students to pantomime a caricature and a metaphor and see if the others can identify it.	moves	demonstrate	caricature and metaphor through psychomotor activity.
Instruct the students to create their own political cartoons. Discuss possibilities.	draws	create	his/her own ideas of caricature and metaphor.

EVALUATION:

5. Ask: Why are political cartoons sometimes funny? Why do we laugh at them? What is their purpose?	judges political cartoons	appraise	the nature of humor and its uses.
Which newspaper cartoon do you think is the funniest? Why?			
Which student-drawn cartoon seems the most effective to you? Why?			

Given an opportunity to recognize, recall, analyze, create and evaluate many examples of metaphor and caricature, the student will demonstrate an understanding of the basic meaning of metaphor and caricature and the ability to distinguish between them.

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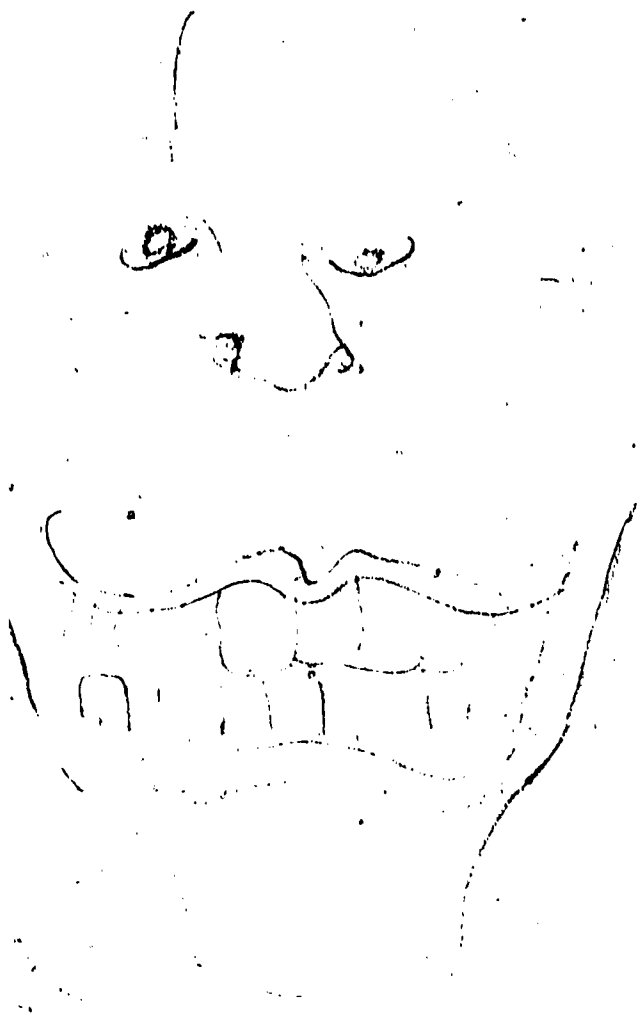
CARICATURE
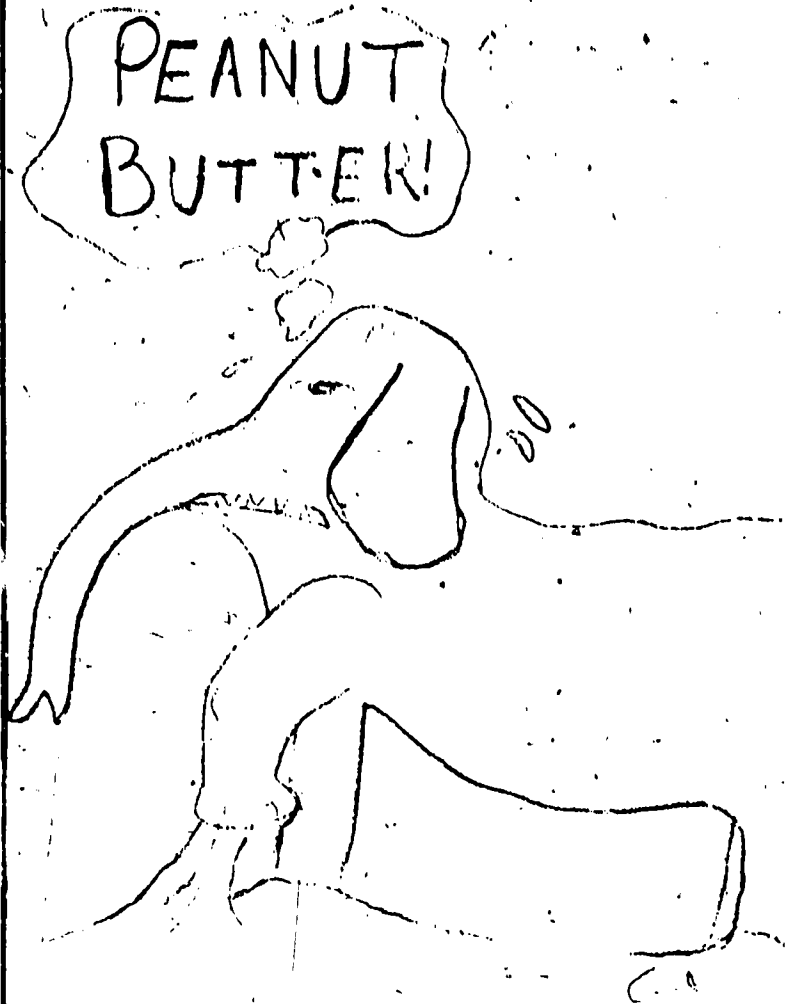
Drawn by George Brennan
5th Grade — Kyrene del Norte School

PEANUT BUTTER!

METAPHOR

Drawn by James Lundquist
5th Grade — Kyrene del Norte School

133
ERIC
Full Text Provided by ERIC

LITERATURE

Kids and Pirates

There is a mutual cause/effect relation-ship, in fiction, between action taking place in the external settings and activity taking place in the internal settings—the minds of the characters.

Developed by: Susan Sager   LEVEL 5 - 6 +   TIME 2 1-hour periods

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ENTRY CONCEPTS:

--familiarity with the first six chapters of A High Wind in Jamaica

--experience in interpreting fiction

MATERIALS:

A High Wind In Jamaica by Richard Hughes
   (Signet Books: New York, 1961);

Materials for writing and drawing

		TEACHER TASKS:	**STUDENT**	
			ENABLING BEHAVIORS:	**LEARNINGS:**
HUMANITIES			The student: In order to:	
AFFECTIVE		**INTRODUCTION:**		
		Say: "In our study of literature, we have used six 'question' words --who, where, when, what, why, and how--to call attention to six elements found in fiction: characters, setting, time, plot, theme, and style.	listens recall the names of	six basic elements found In fiction: characters setting time plot theme style
		Today we will focus on setting, not only in the usual sense of physical and geographical location, but in another, quite different, sense."	listens determine that	setting is the subject of this lesson--in the conventional sense and in a different sense.

ackground for the Teacher:

he novel focuses on children from two
amilies living in post-Emancipation Jamaica:
he English Bas-Thorntons and, to a lesser
xtent, the Creole Fernandezes. Hughes
escribes the tropical setting and con-
rasting life styles in a series of vivid
cenes.

fter a particularly destructive hurricane,
Ir. and Mrs. Thornton decide to send John
12), Emily (10), Edward (7), Rachel (5),
nd Laura (3) to boarding school in England.
hey are placed aboard the barque Clorinda
n charge of Captain Marpole, along with two
if the Fernandez children, Margaret (13) and
larry (6), who are also going to England to
ive with an aunt. The children quickly
idapt to their new shipboard life.

few weeks later, the Thornton parents
eceive a letter from Captain Marpole in
lavana reporting that the Clorinda was
oarded by pirates, who robbed her of her
oney and cargo, but even worse, took the
:hildren onto the pirate schooner, murdered
hem all, and cast their little bodies into
he sea.

he author now returns to the Clorinda,
ind tells a version of the capture con-
;iderably more accurate than Captain Marpole's:
Ihile the pirates are ransacking the barque
ind removing the booty to the schooner for
;orting, they also take the children aboard
the schooner to eat supper. In the gathering
larkness, the pirate Captain Jonsen and his
ate, Otto, are sorting out anything too

easily identifiable and throwing it overboard. At
the loud splashes made by a couple of empty trunks,
they hear an inexplicable roar of indignation from
the neighboring barque.

Once the sorting is over, Jonsen prepares to
return the children to the barque and get well
clear while the breeze and the darkness last.

But Marpole's lively imagination had misinter-
preted the splashes. Since there was no longer any
reason to wait, he ordered his crew to unfurl every
sail. And when Jonsen looks that way again, the
Clorinda is already half a mile to leeward. There
is no question of pursuing her. And thus, the
pirates find themselves saddled with the unexpected
and unwanted burden of seven children.

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IuS and Pirates
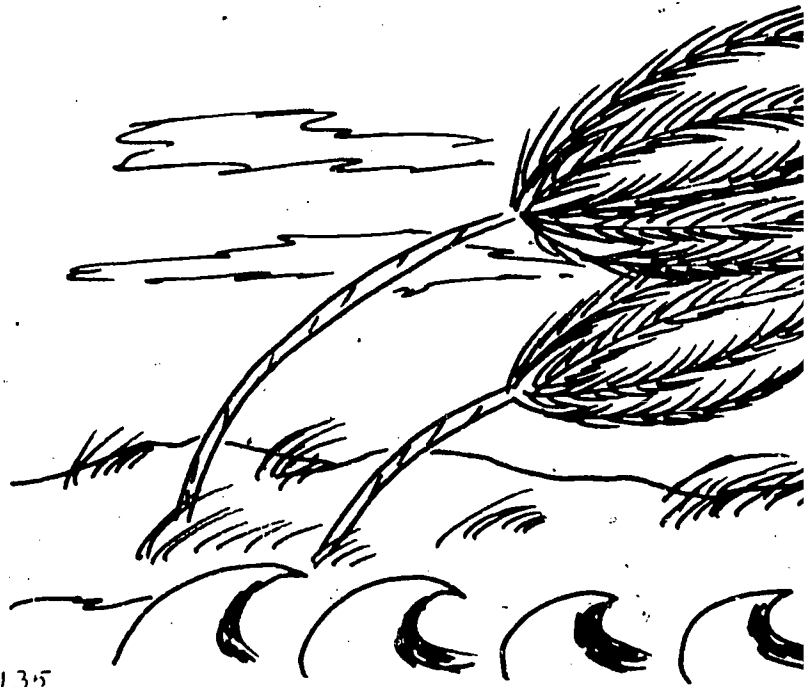
ESSON DEVELOPMENT:

., Say: "What major settings has Hughes described in this novel? These are the settings in which the action of the story has taken place." (Discuss.)	recalls, responds, discusses	demonstrate knowledge of	the major settings and incidents in Chs. 1-6 of A High Wind in Jamaica.
' "What major incidents have taken place in each of these settings? How did the settings help to determine what kinds of incidents might take place?" (Discuss.)	interprets information	determine	a possible relationship between setting and incident.
. Say: "In addition to the external incidents, there is another and very important kind of activity taking place in this story. In Chapter 6, Hughes described at some length the other kind of setting where this activity takes place. Both kinds of action and both kinds of settings are essential to the plot of the novel.	listens	become aware that	in addition to conventional action in a conventional setting, there is another kind of action in another kind of setting; both kinds of action and both kinds of settings are essential to the plot of the novel.
See if you can apply what you know about conventional action and settings to help you learn about this other kind of action and setting.	listens	determine that	what is known about conventional action and settings can be applied to this kind of action and setting.
Here's a clue: Something very important happened to Emily at the beginning of Chapter 6. What was it?	recalls	remember	something important that happened to Emily at the beginning of Ch. 6.

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| | listens, responds, discusses | relate | Emily's new consciousness to the incidents which might have triggered it. |
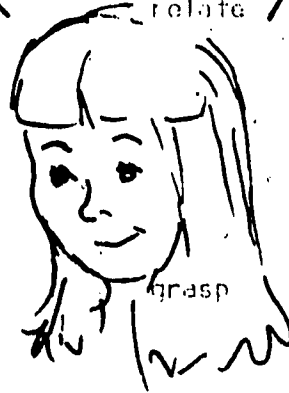
To rephrase it: For the first time, Emily became consciously aware of her own personal identity. With this new consciousness came sharp new perceptions and new anxieties.
What incidents might have triggered this sudden new awareness?"
(Discuss.)

"Now let's back track.
What's my analogy?
In the passage just discussed, what was the 'setting', and what was the 'action'?"
(Discuss.)

| considers further | grasp | the analogous relationships: mind/mental activity setting/action. |

"To sum up, we might say that Jamaica, the Clorinda, the pirate schooner, and Santa Lucia are the external settings where earthquake and hurricane, sea voyage, imprisonment, and accidental death take place; while the minds of Emily and the other characters are the internal settings where mental activity takes place.

| sums up | assimilate | the analogous relationships: external settings and action/ internal settings and mental activity. |

What are the implications of this event-- Emily's personal 'awakening'?
How do you think her new-found awareness will affect how Emily sees the world and what Emily does?"
(Discuss.)

| speculates | predict | the possible implications of Emily's new consciousness. |

"As I read Chapter 7, notice whether Hughes expands and develops this idea of the internal setting--the human mind."

| prepares to listen | notice | whether Hughes expands and develops the idea of the internal setting - the human mind. |

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Say: "Hughes begins with a descriptive passage about shipboard life and the different ways in which the children have adapted to it. You may draw portrait sketches of Edward and Harry or of Rachel and Laura while I read." (Read the first five paragraphs on p. 107.)	listens	comprehend and analyze	the continuing story.
Ask: "How do Edward and Harry differ from each other?"	compares and contrasts	examine	the ways in which Edward and Harry differ from each other.
(Read the long paragraph beginning at the bottom of p. 107.) Ask: "How does Emily differ from <u>both</u> Edward and Harry?	compares and contrasts	examine	the ways in which Emily differs from both Edward and Harry.
What elements from Emily's experiences and emotional responses are combined in her dreams? How is reality transformed into nightmare fantasy? Is Hughes saying something here about the effect incidents in the <u>external</u> setting have on activity in the <u>internal</u> setting?"	recalls and relates	analyze	how Emily's experiences and emotional responses are combined and transformed in her dreams.
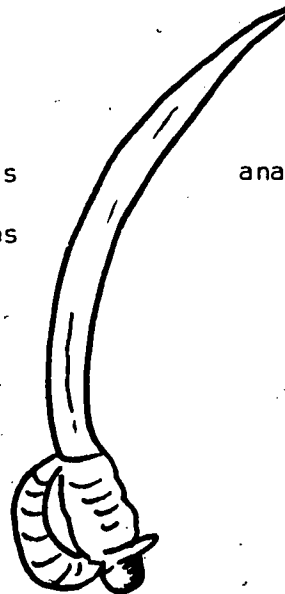
150   135

(Read the 'bridging' passage beginning at the bottom of p. 108 and continuing to the middle of p. 111. No special interpretation is required.)	listens	comprehend and analyze	the continuing story.
Say: "Hughes goes on to compare Rachel and Laura. He describes them from the outside, telling of their characteristic activities. Then he goes inside and attempts to describe their minds.	listens	become aware that	Hughes describes Rachel and Laura externally through their activities and and internally through their mental processes.
One of Hughes' major tenets is that adults and children think in quite different terms from one another, while babies think quite differently from either. This leads to problems in understanding and communication.	listens	determine that	Hughes believes that adults, children, and babies think in entirely different terms and categories from one another.
Do you agree with this in principle? See if you are able to agree with Hughes' elaboration of this idea!"	considers	determine whether he/she believes that	the radically different kinds of thinking of the three groups lead to problems in understanding and communication.
(Read from the middle of p. 111 to the end of section i on p. 115.)	listens	comprehend	the continuing story.

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Ask: "How do Rachel and Laura differ from each other? How does Emily differ from both?"	compares and contrasts	examine	the ways in which Rachel and Laura differ from each other; the ways in which Emily differs from both.
Hughes uses many <u>analogies</u> which contain <u>references</u> to history, mythology, and other literature. A well-educated adult will pick these up immediately. A less experienced young person sometimes has to dig a little harder!	listens and assimilates	become aware of	the author's use of <u>analogies</u> containing <u>references</u> to history, mythology, and other literature.
Here's an example: Hughes says of Laura that 'the child mind lived in the midst of the familiar relics of the baby mind, like a Fascist in Rome. What does he mean? What was going on in Italy in 1928 at the time that this novel was first published? What had gone on there many centuries earlier?" (Discuss.) (Some research may be needed.) "Is the comparison an apt one?" (<u>Part I</u>): (This follow-up can be done as homework or during a work period.)	listens, responds, discusses (Laura's child mind existed among many traces of her baby mind just as a Fascist in the Rome of 1928 lived among the ruins of Ancient Rome.)	comprehend and judge	a complex historical analogy.

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Instructions:

Compose a story in three paragraphs. In the first paragraph, make up and narrate objectively an incident in the external setting of the pirate schooner. In the second paragraph, tell how Rachel responds to the incident internally. In the third paragraph, tell how Laura responds to the incident internally.	composes a story	demonstrate an understanding that	the subjective interpretations of reality by different minds can differ vastly from each other as well as differing radically from the objective reality itself.
(Part i): Ask: "What do you think of Hughes' assertion that babies are not human and children are not sane? Do you think he is really serious? If you don't like it...then can you refute it? (Discuss.)	considers and discusses	accept or reject	Hughes' assertion that babies are not human and children are not sane.
(Part ii): Say: "Today I will read Part ii of Chapter 7. Listen analytically. Notice whether anything Hughes has said previously helps to explain what now happens. You may draw a portrait sketch of Emily while I read.	listens	determine	the important things to notice as the story proceeds.

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Kids and Pirates

(Read Part II, pp. 115-125, straight through with very little interpretation so that the students will feel the swiftness of the action and the emotional impact of the shattering climax.)

Ask: "Why did Emily act as she did? Step by step, what incidents in the external setting and responses in Emily's internal setting led to the catastrophe?"
(Discuss.)

I. (Part ii):

(Allow the students to respond to the story in any way they deem appropriate to help them assimilate the experience and "put it all together.")

5. (Part ii):

Say: "This grotesque mischance might have been prevented if Emily had been able to make adequate use of an essential thinking process.
Which process?
Why was Emily unable to use this process adequately?
Might a more experienced or wiser person have evaluated the situation differently and thus acted differently?"
(Discuss.)

VALUATION:

See Activity #5 for Part i and Activity #5 or Part ii.)

listens	find out	how the forces that Hughes has been describing come together to produce a catastrophe.
conducts a post mortem	explain	how and why the catastrophe occurred.
responds and interacts	synthesize	the elements of the experience.
listens, responds, discusses (evaluation)	conclude that	the process of evaluation, adequately used, is essential for determining a rational and appropriate course of action.

.Given a guided listening experience with Ch. 7 of A High Wind in Jamaica, the student will demonstrate the ability to identify both external and internal settings and actions, and to explain the mutual cause/effect relationship between them.

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For additional lessons in teaching the Humanities,
see "LORD & LADY", p.p. 244 - 255 and "LIFE",
p.p. 256 - 263.

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Concept/Competency

BACKGROUND IN MUSIC, ART AND DRAMA

Monsters of every variety--real and make believe--have an important place in human history, knowledge, and belief.

MONSTER MANIA

Developed by: Susan Sager **LEVEL** 1 - 6   **TIME** Flexible

ENTRY CONCEPTS:	MATERIALS:
--ability to distinguish fantasy from reality --interest in monsters, make believe and real	Monsters Who's Who by Dulan Barber (Crescent Books: New York, 1974) and other books about monsters; Selected classical music; selected art books; selected filmstrip-record dramatizations; materials for art and writing; equipment for making slides and tapes

HUMANITIES

TEACHER TASKS:

[*Note: This model demonstrates a general procedure that may be adapted for teaching any theme-centered unit.*]

STUDENT

ENABLING BEHAVIORS:	LEARNINGS:
The student: In order to:	

AFFECTIVE:

INTRODUCTION:

This unit of study may be initiated in a number of ways. The teacher might read aloud one of the excellent books on monsters currently available. Or a television show or current movie might spark the students' already existing interest in monsters. The teacher's task is simply to cultivate and guide this interest so that it will yield the greatest possible richness of cognitive and affective experience.

participates gain in a unit about monsters	a theme-centered total experience integrating the arts and humanities.

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onster Mania

ESSON DEVELOPMENT:

. Encourage the students to find out as
  much as they can about monsters. Sources
  of information can be folklore and
  mythology, factual and fiction books,
  reference works, television, and movies.
  A 3" x 5" reference card may be kept on
  every different kind of monster, and
  filed alphabetically.

  Have the students listen to music such
  as Moussorgsky's "Nigh on Bald Mountain"
  and Stravinsky's "Rite of Spring" and
  let their imaginations visualize the
  monsters suggested by the music.

  Allow the students to examine pictures of
  monsters in the fine arts in books about
  Ancient Egyptian and Mesopotamian
  cultures, Classical civilizations,
  Medieval bestiaries, and individual
  artists such as Hieronymus Bosch and
  Francisco de Goya.

  Have the students view and listen to
  filmstrip-record dramatizations of
  well-known stories dealing with monsters
  from folklore and mythology.

gathers information	acquire	a rich background of knowledge about monsters.
visualizes monsters while listening to music	acquire	familiarity with selected classical music.
examines pictures of monsters	acquire	familiarity with selected examples of work from the fine arts.
views and listens to filmstrip-record stories	acquire	familiarity with dramatized versions of well-known folktales and myths.

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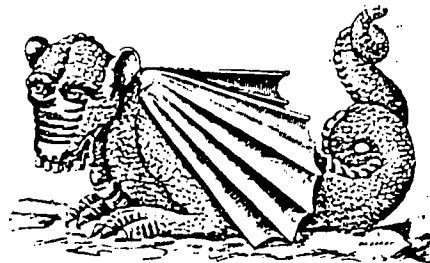
Have the students make a Monster Alphabet. Individuals can select and draw portraits of one monster for every letter of the alphabet. The portraits can be displayed, with sentence-strip labels, across one wall of the classroom. A brief descriptive article about each monster may be included. When the display is taken down, it may be made into a permanent scrapbook for the class.

Allow selected students to tape an auditory Monster Alphabet. Each monster name, preceded by an alliterative descriptive word (for example, Abominable Anthropophagi...Bilious Blob... Circumnavigating Cyclops, etc.)may be expressively spoken, followed by an appropriate brief musical selection. The tape may be used by older students to teach younger children a lesson in creative movement.

Have some students copy art prints previously studied, using a 35-millimeter camera and a copying stand.

Encourage interested students to dramatize "Beauty and the Beast," "Perseus and the Gorgon," or some other well-known story

selects, draws, and writes about a monster	help assemble	a Monster Alphabet.
matches monsters and music	assemble and tape	an auditory Monster Alphabet with appropriate musical selections suggesting monsters.
copies art prints	help assemble	a slide collection of monsters in the fine arts.
dramatizes a story	translate	narrative form into dramatic form.
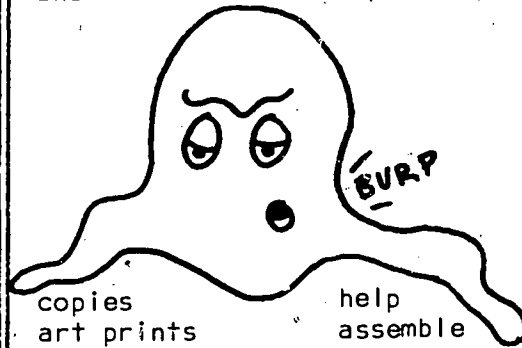
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- At this level, lead the students to develop--analytically--a comprehensive definition of monsters.

- The dictionary recognizes the following characteristics as possible indicators of monsters:

    1) abnormal form or structure,
    2) enormous size, and/or
    3) excessively wicked or cruel behavior

Have the students classify the full spectrum of monsters they have studied according to the standard system above. In addition, have them categorize monsters in as many ways as they can think of.

Have the students analyze--for logical soundness and adequacy of evidence-- arguments for or against the existence of Bigfoot (Yeti, Abominable Snowman), the Loch Ness Monster, and other disputed cases.

defines, compares, classifies, and categorizes monsters

isolate

the specific characteristics which identify monsters; the innumerable ways in which monsters can be categorized.

(Responses will vary.)
factual/fantasy
living/extinct
traditional/modern
folk/literary
organic/mechanical
humanoid/non-humanoid
monomorphic/polymorphic
etc.

dissects and examines arguments

demonstrate

the ability to analyze--for logical soundnes and adequacy of evidence-- arguments for or against disputed cases.

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Provide students the opportunity to:

1) compose and perform songs about monsters;

2) create a fantasy world mural populated with student-invented monsters; these could be polymorphic creatures, composed of parts of natural animals--but in unnatural combinations;

3) write original fantasy fiction or write and dramatize ar original play with monsters as characters;

Or...put it all together and create and produce a multimedia presentation for other classrooms.

'ALUATION:

Lead a class meeting or round table discussion on one of the following:

1) How can we tell whether a monster is real or make believe? What are the tests for reality?

2) How important have monsters been in human affairs throughout history? Why?

composes and performs	synthesize	music and monsters.
creates a mural	synthesize	art and monsters.
writes a play	synthesize	drama and monsters.
produces a multimedia presentation	synthesize	the humanities and monsters..
discusses and interacts	clarify and evaluate	ideas and beliefs about monsters.
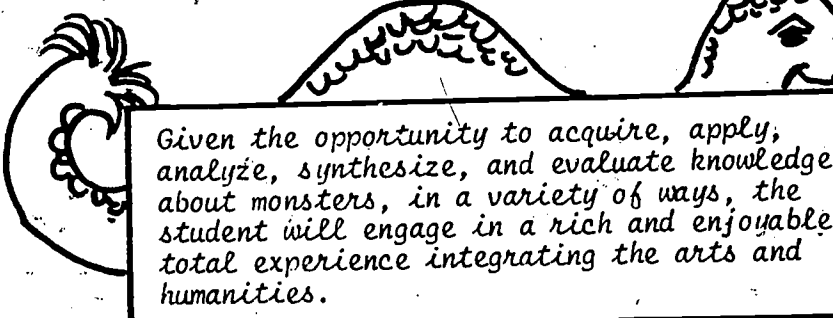
Given the opportunity to acquire, apply, analyze, synthesize, and evaluate knowledge about monsters, in a variety of ways, the student will engage in a rich and enjoyable total experience integrating the arts and humanities.

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HISTORICAL PERSPECTIVE

Each new generation has to face new problems as the result of constant change. The rate of change is accelerating rapidly. This necessitates new problem-solving skills--as well as a firm sense of values about where we want to go.

ROOTS AND BRANCHES

Developed by: Susan Sager

LEVEL ___3 - 6___   TIME _4 30-min. periods_

ENTRY CONCEPTS:	MATERIALS:

--ability to deal with concepts involving generations, ancestry, and descent
--ability to draw reasonable conclusions when analyzing data
	Charts illustrating family trees that
	   (1) "grow" down
	   (2) "grow" sideways
	Duplicated branching diagrams for students;
	History resource materials;
	Writing paper and pencils

	TEACHER TASKS:	STUDENT	
		ENABLING BEHAVIORS:	LEARNINGS:
		The student: In order to:	

HUMANITIES

AFFECTIVE:

INTRODUCTION:

(Ask the students whether they know what a "family tree" is. Discuss the ideas that are contributed. Ask whether the students know the purpose or possible benefits of tracing one's ancestors. During the course of the lesson, clarify any unfamiliar terms.)

listens, responds, discusses

gain awareness that

a "family tree" is a diagram of an individual's ancestry, relatives in the same generation and/or descendents.

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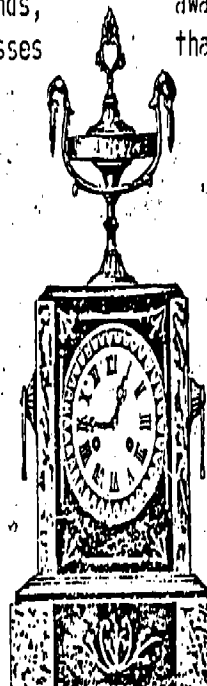
ESSON DEVELOPMENT:

If you feel as the author of this lesson does, say: "Something has always bothered me a little bit about calling a diagram of ancestry a <u>tree</u>.	listens	become aware of	certain incongruities involved in calling a diagram of ancestry a "family tree."
Trees grow <u>up</u> out of the soil, with their <u>branches</u> reaching skyward. Their <u>roots</u> reach <u>down</u> into the soil, seeking water and nutrients.	listens and visualizes	review	the basic structure of a tree.
If we see <u>our self</u> as the <u>trunk</u> of the tree...then the <u>roots</u> represent our <u>ancestors</u> and the <u>branches</u> represent our descendents." (Discuss.)	listens and discusses	identify with	a personal analogy: branches = descendents trunk = self roots = ancestors
"But a 'family tree' isn't shown like this. It seems to grow in the opposite direction--'down' instead of 'up.'" (Show illustrative chart.)	observes a chart	notice that	some family "trees" grow <u>down</u> instead of <u>up</u>.
"And often it even grows <u>sideways</u>!" (Show illustrative chart.)	observes a chart	notice that	some family "trees" grow <u>sideways</u>.

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ts and Branches

"Be that as it may, let's talk about our ancestors.	listens, responds discusses	determine that	we are going to talk about our own ancestors; and how many we have in each generation.
How many parents does every human being have? I mean biological parents, whether present or distant, living or dead.	(2)		
How many grandparents?	(4)		
Great-grandparents?	(8)		
Great-great-grandparents?	(16)		
What happens to these numbers as we go back each generation?"	(They double.)		
(Discuss.)			
(Distribute duplicated branching diagrams with a single line on the right for the student's name and birthdate, and two, four, and eight lines fanning out to the left for the names and birthdates of parents, grandparents and great grandparents.	accepts and studies a branching diagram	become familiar with	one kind of "family tree" branching diagram.
Have the students fill in as much of their diagrams as they can. Diagrams may be completed at home, using family members as sources of information.	fills in the lines of the diagram	gain information about	the names and birthdates of his/her own ancestors.
As an alternative, a student may make a family tree diagram for a famous person such as Queen Elizabeth II of England.)	completes another family tree	gather information about	the ancestry of a famous person.

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(Have students analyze and compare what was going on--during the time segments delineated by the births of the four generations--in technological development, historical events, popular culture, etc.).	investigates and researches generational time spans	develop	the ability to analyze and compare historical conditions during different generations.
The general form of the questions:			
"In the year you (your parent, etc.) were (was) born, what important technological advance (historical event, etc.) had just taken place? What was the population of the United States that year?" etc.	answers questions	demonstrate that he/she has acquired	a sufficient body of data from which to draw valid conclusions.
(Through research and further comparison and analysis, lead the students to develop a sense of historical sequence and continuity.	probes further	develop	a sense of historical sequence and continuity.
They should also be led to discover such significant trends as <u>accelerating</u> technological development and <u>geometrically</u> increasing population.)	analyzes data	discover	significant trends such as accelerating technological development and geometrically increasing population.

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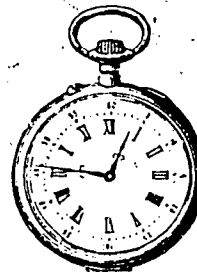
(As students become familiar with the history of their own and their immediate ancestors' generations, have each student write a story about a hypothetical typical day in the life of a parent, grandparent, or great grandparent when he/she was the same age as the student is now.

Using resource materials as well as personal interviews, students should include as much historical information as can be integrated into their stories. But there should be small, personal details of the kind that seldom get into history books.

The stories may be displayed on the classroom wall in different rows for each generation.)

/ALUATION:

. (During a class meeting, discuss the developments that have taken place in transportation just during the lifetime of one student's grandmother or great grandmother.)
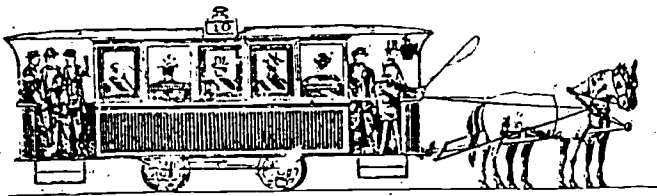
synthesizes historical information and imagination	compose	a story about a hypothetical typical day in the life of an ancestor at the students' same age.
uses resource materials and personal interviews	integrate	historical information and small personal details.
reads stories written by class	appreciate that	the way of life of each generatic differs from that of preceding and following generations.
listens, discusses, interacts.	conceptualize	the rapid developments that have taken place in transportation during the lifetime of a still-living relative.
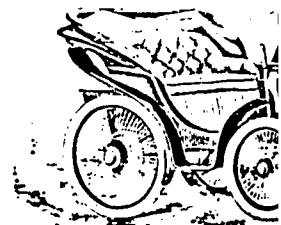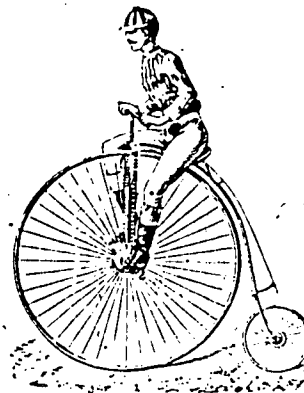
Questions to consider:

What are the implications of such rapid change?
What effect has it had on our life style?
Has it had this effect uniformly through-out the world?
Have all the changes been gains...or have there been losses as well?
What effect has rapid change had on our values and beliefs?
Why has the <u>rate</u> of technological development accelerated faster and faster in recent years?
Why does the population continue to increase?
What are the "best" ways to deal with such conditions?
What kind of world do we want to live in? Why?
How might we best achieve such a world?

Given the opportunity to work with family trees and do research about the time segments delineated by family generations, the student will develop a sense of historical sequence and continuity and an awareness of some of the conditions and problems created by accelerating change.

listens,
discusses,
interacts

consider

implications of such rapid change problems that might result from such rapid change possible ways of dealing with these complex problems; the kind of world that is desirable the best ways to achieve such a world.

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Cognitive

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Concept/Competency

DIDACTIC EQUIPMENT: FIGURAL
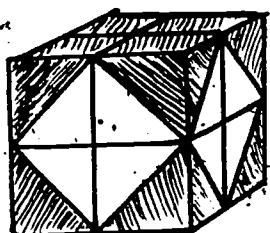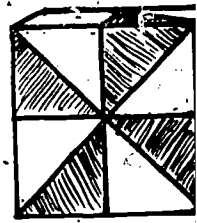
A block pattern figure on a square ground can be duplicated (translated), or it can be transformed (1) by conserving its area but changing its shape, or (2) by conserving its shape but changing its area through dilation or its orientation through rotation or reflection.

Developed by: Susan Sager

LEVEL K - 4   TIME 3 30-min. periods

MATERIALS:
Several dozen Parker Brothers
   Pattern Pending design blocks;
Pencils, scratch paper;
Graph paper or dittoed grids;
Book - Seeing Shapes;
Duplicated exercises for evaluation

STUDENT

ENABLING BEHAVIORS:		LEARNING
The student:	In order to:	
manipulates	become familiar with	Pattern Pending design blocks.

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Pattern Pending.

<table>
<tr><td>Ask: "How many faces does any cube have? How many edges? How many corners? How many faces meet at each corner? How many edges?</td><td>observes</td><td>identify</td><td>basic properties of cubes.</td></tr>
<tr><td>How many black faces does each of these cubes have? How many white faces? How many black and white faces? How are these cubes constructed?"</td><td>observes</td><td>identify</td><td>specific characteristics of Pattern Pending design blocks.</td></tr>
<tr><td>Say: "The square ground for a figure you wish to construct may be made up of different numbers of smaller squares, called cells. See if you can figure this out: How many rows of how many blocks would be needed for a four-cell design? A nine-cell design? A 16-cell design? (etc.) How is the computation on these problems different from that on related problems you may have solved in the past?</td><td>applies math concepts</td><td>solve</td><td>a problem on area.</td></tr>
<tr><td></td><td colspan="3">(2 rows of 2)
 (3 rows of 3)
 (4 rows of 4)
 (Usually we multiply the factors and generate the product. In this problem, we began with the product and worked backward to the factors.)</td></tr>
<tr><td>Shortly before an activity period, say: "I am going to ask one of you to construct a design on a nine-cell square ground. "</td><td>listens</td><td>determine</td><td>the task to be performed.</td></tr>
<tr><td>(Allow time for a student to do this while the rest of the group observes. As soon as the design is complete, have another student record it on graph paper or a grid.)</td><td>constructs a design</td><td>translate</td><td>verbal instructions into figural form.</td></tr>
<tr><td></td><td>records the design</td><td>translate</td><td>a tangible construc into a pictorial "P</td></tr>
</table>

"Now, I would like a second student to construct a nine-cell design. The figure on your ground will be equal in area to the first figure...but different in shape."

(Allow construction time and have the design recorded as above.)

"Take a good look at the two designs and analyze them. Can you calculate the least number of moves it would take to change the first design to the second? Record your solution."

(Allow a small, interested group to pursue this investigation during the activity period.)

At another session, say: "In our previous exercises, we have conserved the area of the figures but changed their shape. It is also possible to conserve the shape of a figure...but change its area--size-- or its orientation--direction in which it is pointing.

Thousands of years ago, a Greek mathematician named Euclid stated that geometric shapes have four invariant properties."

(Write on the board, read aloud, and explain:
1. Translation - Duplicating exactly
2. Dilation - Expanding or contracting
3. Rotation - Turning around
4. Reflection - Mirroring an image.)

constructs a design	transform	the original figure into an equal-area figure of a different shape.
analyzes the designs	calculate	the least number of moves needed to transform the first design into the second.
considers and designs	appraise and synthesize	the kind of shift in viewpoint needed to look at geometric figures in new way
listens and observes	learn	the mathematical vocabulary: translation, dilation, rotation reflection.
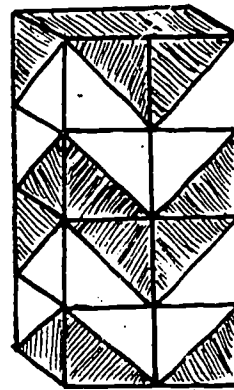
change this ...   to this!

158 212
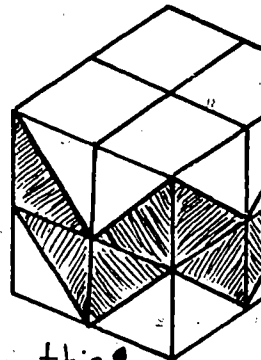
Have students demonstrate understanding of these terms by producing block patterns.	manipulates blocks	demonstrate	understanding of terms: translation, dilation, rotation, reflection.
• (Invite the students to create original block patterns and record their designs on graph paper or dittoed grids.)	arranges blocks	create	a variety of original patterns.

IALUATION:

• "I have here an exercise with pairs of figures for you to evaluate.	listens	determine	the instructions to be followed in doing the evaluation exercise.

If you think a pair of figures illustrates translation, write 1.

If you think it illustrates dilation, write 2.

If you think it illustrates rotation, write 3.

If you think it illustrates reflection, write 4.

Be prepared to defend your answers."

Given the opportunity to take part in a variety of activities with Pattern Pending design blocks, the student will demonstrate understanding of concepts involving

(1) conservation of area and transformation of shape

(2) conservation of shape and transformation of area or orientation.

Concept/Competency

Developed by: Susan Sager
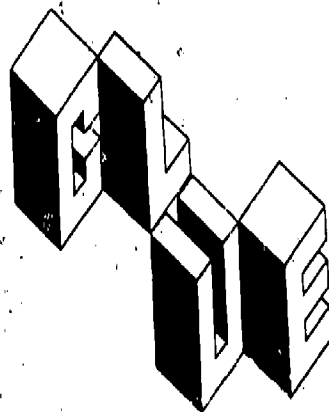
DIDACTIC EQUIPMENT: SYMBOLIC

To solve a mystery, it is first necessary to identify the elements of the mystery (such as the crime, circumstances, suspects, motive, and opportunity), and then to select the most productive strategies for converging on the solution.

LEVEL   3 - 6   TIME 3 45-min. periods

ENTRY CONCEPTS: Detectives seem to use a systematic step-by-step process to solve mysteries.	**MATERIALS:** One or more Clue Games (Parker Brothers) Chalkboard, chalk, pencils, Writing Paper Legal-size envelopes Book of short mystery stories

(left margin, vertical) EFFECTIVENESS

(left margin, vertical) INTELLECTUAL

(left margin, vertical) COGNITIVE:

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	
INTRODUCTION: During a class meeting, ask: "How many of you have read mystery stories or watched them on television or in the movies?" (Mention can be made of Ellery Queen, Columbo, Cannon, old Perry Mason reruns, or other current television shows, and such recent films as Murder on the Orient Express and Murder by Death.) Say: "Let's not get involved in rehashing the plots of half a dozen TV shows. What I would like to have you focus on are the general strategy and processes used by the investigator to solve a crime, rather than the details of any individual story plot.	remembers	recognize	general processes of investigation and detection used by solvers of mysteries

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(As the discussion progresses, help the students keep to the purpose of extracting and generalizing about the deductive processes used by solvers of mysteries.)	discusses	clarify
		understanding of deductive processe:

SSON DEVELOPMENT:

(Have the students seat themselves in a semicircle at a table facing the board.)	listens observes	become familiar with
		the game of Clue

Holding up a Clue game box, ask: "How many of you are familiar with the game of Clue?" (Note show of hands.)

"Good. These people will be able to help the rest of you learn this game during our activity periods. Meanwhile, to refresh the memories of those who have played Clue and introduce it to the rest of you, Clue is like a 'whodunit' mystery story.

The 'drama' takes place in Mr. Boddy's magnificent mansion. Mr. Boddy himself is apparently the victim of foul play. Fortunately, discovering the solution to this crime is much less complex than solving a mystery in a story or solving a crime in real life.

MR. GREEN

The object of the game is to answer these three questions:	listens observes	determine
1. Where was the crime committed?		
2. By whom?		the elements and processes used in playing Clue.
3. With what weapon?		

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The solution lies concealed in the case
file, which contains three cards answering
these three questions. The solution is to
be deduced logically through the process
of elimination."

Indicating the equipment, say: "Here is
the game board with the floor plan of
Mr. Boddy's mansion. The crime was
committed in one of these nine rooms...
(Indicate each in turn.)

The crime was committed by one of these
six suspects...(Name each while holding
up the card.) Here are colored tokens
to represent each one.

The crime was committed with one of these
six weapons...(Name each while holding
up the implement.)

At this point, have the students play
the game.

"Now, I'm going to ask a question to see
how well you can apply your knowledge
of mathematical operations.

If we are limited to nine possible
locations, six possible suspects, and
six possible weapons...then how many
possible solutions are there to the
crime?"

(Notice how students attempt to solve
this problem. Do they use blind rules
of thumb? trial and error? logical
reasoning? Help them to "map" suggested
solutions on the board. For example,

PROF. PLUM

| plays Clue | acquire | experience in using deduction in a game situatio |
| transfers learning | solve | an unfamiliar problem related to the Clue game. |

· 217
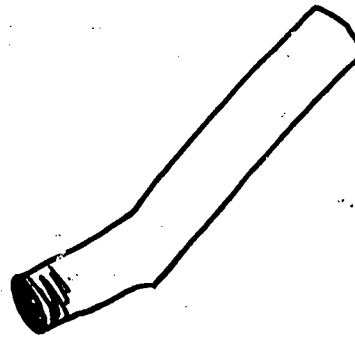
list the nine locations, six suspects
and six weapons in three columns and
have the students speculate about how
to determine the number of possible
combinations.)

If students are perplexed, say: "Okay.
Maybe we need to simplify this a little
in order to discover the principle we're
looking for. What if we only had two
locations, two suspects, and two weapons?
How many possible solutions would there
be then?"

After students have worked this out by
trial and error, ask: "Can you state
your method of solution in the form of
a specific equation?

Now...Can you state your method in an
equation that will give us the solution
to our larger problem with the Clue game?"

(As this may be beyond the computational
ability of some of the students, help
them to work it out in steps.)

"Now...Can you state this equation as a
formula--a kind of universal equation
that would give us the number of possible
solutions for any number of locations,
suspects, and weapons? How will you go
about this? Will you need special
symbols and a key?

simplifies   extract

(2 x 2 x 2 = 8)

(9 x 6 x 6 = 324)

(L x S x W = N)

a general princip]
for solving pre-
probability proble

213

163
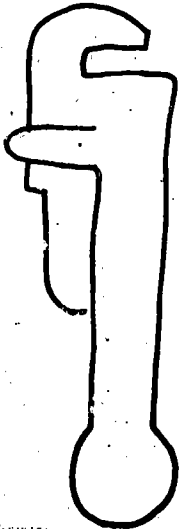
Now let's try some <u>probability</u>. If you just guessed wildly at a solution to a Clue game mystery, before you started to play, what would be the chances--the probability--of your being right?.... Those aren't very good <u>odds</u>, are they? How could you improve your odds as the game progressed?

3. During our activity period, six of you may play Clue. You will use deductive reasoning and elimination logic to solve the crime. Each activity period, another group of six may play Clue until everyone can use efficiently the processes necessary to reach a solution.

4. "See if you can write a good mystery story that a clever reader could solve logically by using the clues that you provided. Write the solution to your crime, with supporting evidence, on a separate sheet of paper which you fold and place in an envelope.'

Have a friend critique and proofread your mystery. Then make a fair copy, writing on only one side of the paper, to post in our Mystery Corner where everyone will have a chance to solve it.

reasons	solve	a probability problem
plays Clue	practice	basic elimination logic deductive reasoning
composes	extend comprehension	an original mystery story
critiques	extend	skills in proofreading, editing, and evaluation

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EVALUATION:

5. What is the best way to solve a logic
   elimination problem? the worst way?
   Why?

   I am going to read you a short mystery
   story but leave off the ending. See if
   you can guess the correct solution to
   the mystery. Be prepared to defend
   your answer.

MRS. PEACOCK

Lettering from <u>Fantastic Alphabets</u>,
Jean Larcher, Dover Pub., Inc., 1976.

considers   judge   the best way to
                                  solve logic
                                  elimination prol
                                  problems.
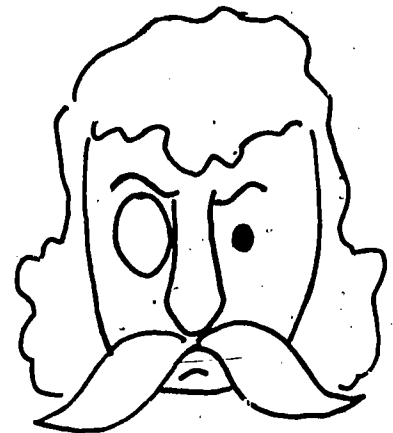
COL. MUSTARD

Given the opportunity to become
familiar with the game of Clue,
play it, and participate in a
variety of related activities,
the student will become proficient
in identifying the elements in any
kind of perplexing problem or
mystery and in selecting the most
productive strategies for solving
it.

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165
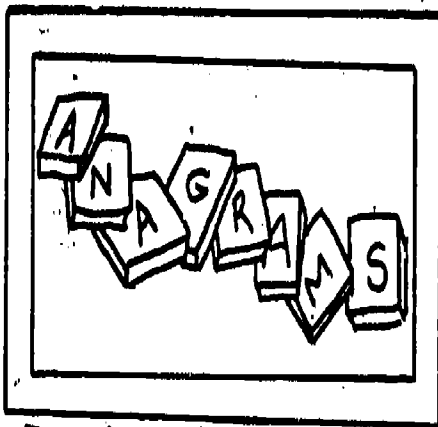
ANAGRAMS

DIDACTIC EQUIPMENT: SYMBOLIC

Words are formed through the use of individual letters.

Developed by: Carole Draper

LEVEL __K - 6__   TIME __30 minutes__

EFFECTIVENESS	ENTRY CONCEPTS:	MATERIALS:
	--The ability to spell --The ability to react quickly	Anagrams (separate small wooden squares with a letter printed on each).

INTELLECTUAL	TEACHER TASKS:	STUDENT	
		ENABLING BEHAVIORS:	**LEARNINGS:**
		The student: In order to:	

| COGNITIVE: | INTRODUCTION:
The teacher displays the game and discusses the rules of the game.
(1) All letters are turned face down on the surface.
(2) The children take turns turning over individual letters until someone spots a word spelled out.
(3) If the word is correct, that child gets the total number of points listed on each letter square. | listens
absorbs.   comprehend
understand | the rules of the game. |

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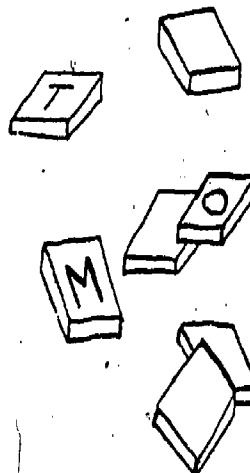
LESSON DEVELOPMENT:

1. The students begin playing the game and
    continue to do so until someone achieves
    the goal set by the group, such as 100
    points.

EVALUATION:

The teacher will ask the students if they
acquired any new words while playing the
game.

Did it help their spelling process?

Did it increase their capabilities of
spotting a word quickly?

Did they like the game?

How did they feel when playing the game?
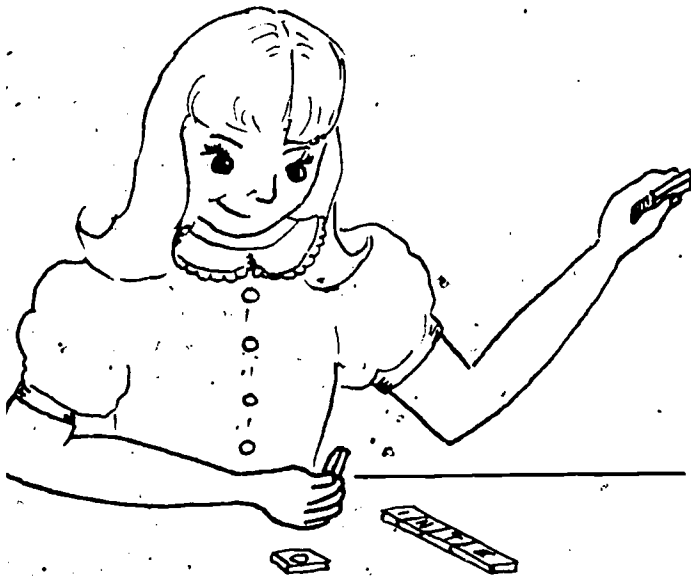
uncovers	synthesize
recognizes	construct
analyzes	
responds	identify
	build

the spelling
of words.

new words.

vocabulary.

The student will increase
his vocabulary skills,
his spelling skills, and
his eye-hand coordination
through the use of manip-
ulative materials.

Number Hunt

Developed by: Carole Draper

DIDACTIC GAMES: SYMBOLIC

Specific objects contain common properties.
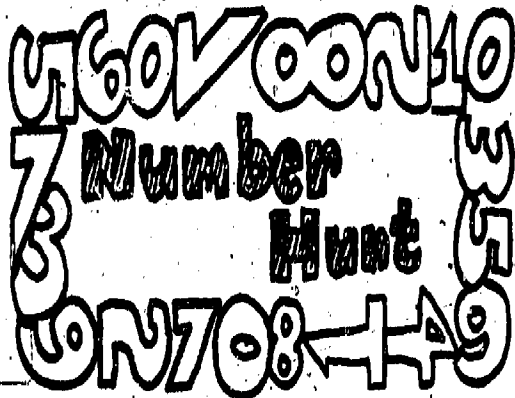
LEVEL K - 6   TIME 30 minutes

ENTRY CONCEPTS: --The ability to ascertain that certain objects may contain common properties.	**MATERIALS:** Mini-learning Center Pencil Paper

(left margin: INTELLECTUAL EFFECTIVENESS)

TEACHER TASKS:	**STUDENT**	
	ENABLING BEHAVIORS: The student: In order to:	**LEARNINGS:**

(left margin: COGNITIVE)

INTRODUCTION:

The teacher will explain to the child that he will learn what to do by reading the directions given in the mini-center.

LESSON DEVELOPMENT:

1. The student is to answer questions found in the mini-center in relation to these shapes: (following page)

examines   *answer*   specific questions about the attributes of certain shapes in relation to certain numerals.

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2. The questions are:

    (1) What numbers are in the rectangle
    but not in the circle, square or triangle?
    (2) What numbers are in the triangle but
    not the rectangle?
    (3) What numbers are in the square but not
    in the circle?
    (4) What numbers are in the rectangle
    but not in the triangle and square?
    (5) What numbers are in the square but
    not in the rectangle?
    (6) What numbers are in the circle but
    not in the rectangle?
    (7) What is the sum of the numbers in
    the square only?
    (8) What is the sum of the numbers in
    the rectangle only?
    (9) What is the sum of the numbers in
    the circle only?
    (10) What is the sum of the numbers in
    the intersection of the circle and square?
    (Intersection: the area where the
    geometric figures overlap.)
    (11) What is the sum of the intersection
    of the triangle and square?
    (12) What is the sum of the intersection
    of the square, rectangle and triangle?

EVALUATION:

The teacher and students will discuss the
answers to the questions. The students will
design their own questions in relation to
the shapes and numbers.
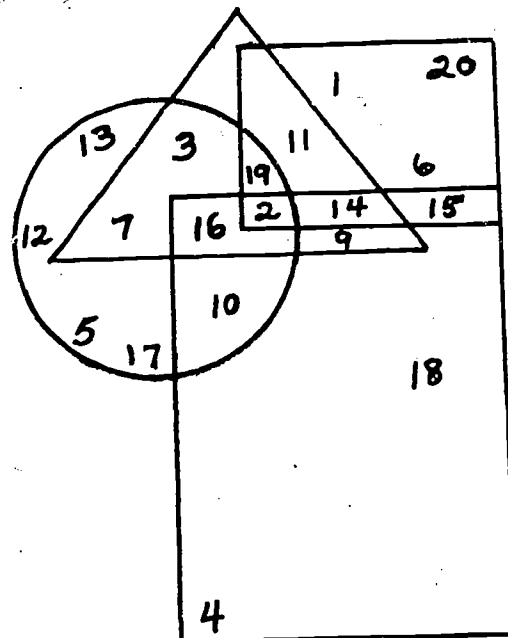
Given the opportunity to do
this exercise, the student
will become aware that many
ideas, objects, numbers,
concepts, etc., have common
attributes.

MAGIC SQUARE
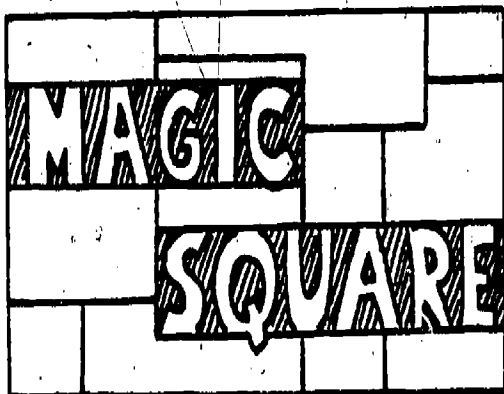
DIDACTIC GAMES: SYMBOLIC

Words can be formed by the interchange of a group of letters.

Developed by: Carole Draper

LEVEL K - 6   TIME 15 - 30 minutes

INTELLECTUAL EFFECTIVENESS	**ENTRY CONCEPTS:** --The ability to spell --To possess a basic vocabulary	**MATERIALS:** Mini-learning center Paper Pencil

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	*In order to:*	
COGNITIVE: INTRODUCTION: The teacher will explain that the child is to read the directions at the mini-center which will explain what he is to do.	listens	understand	procedure.
LESSON DEVELOPMENT: 1. The child is to list as many words as he can form from the letters in the magic square. Each of these letters must touch each other.	indicates lists	discover	words created by the interchange of specific letters.

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Magic Square

G	I	R	L
C	R	O	W
A	V	I	D
E	M	G	D

Such words include: girl, crow, grid, arrow, mirror, grow, give, row, came, rave.

EVALUATION:

The teacher and students will discuss the words the students discovered. The students will create their own magic square.

8½ x 11 File Folder

MAGIC SQUARE

G	I	RL
C	RO	W
A	V	I D
E	M	GD

INSTRUCTIONS
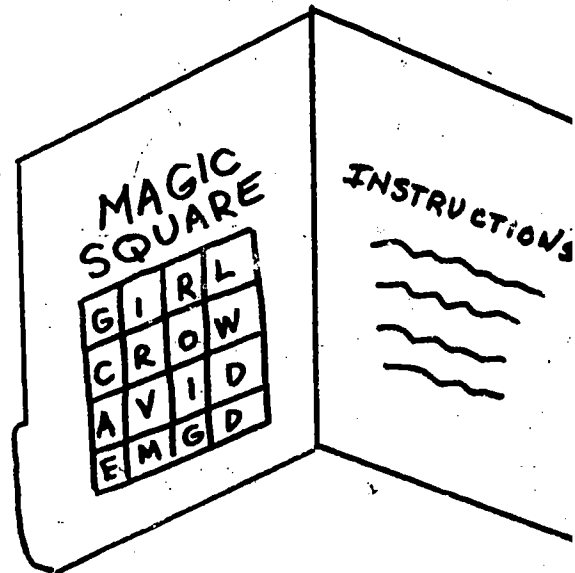
Mini-Learning Center

Through the use of a "magic square," the student will become more proficient in forming words and improving his spelling capabilities.

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DIDACTIC GAMES: SEMANTIC

A story can be written which uses the alphabet as a pattern for the words to be used.

ALPHABET APPETITE

Developed by: Carole Draper

LEVEL K - 6   TIME 20 - 30 minutes

EFFECTIVENESS

ENTRY CONCEPTS:

--The ability to know the sequence of the alphabet

MATERIALS:

Pencil
Paper

INTELLECTUAL

TEACHER TASKS:

	STUDENT	
	ENABLING BEHAVIORS:	**LEARNINGS:**
	The student: In order to:	

COGNITIVE:

INTRODUCTION:

The teacher will explain that the students are going to write an alphabet story. They are to write their story according to the sequence of the alphabet. Thus, the first word will begin with A, and the last word will begin with Z. The child may include other words if necessary in order to have the story make sense.

| listens | understand | directions. |

230

231
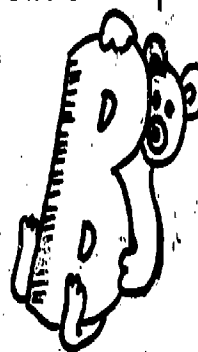
Fast Freddie Fights Fires

DIDACTIC GAMES: SEMANTIC

Alliteration is a technique used to promote creative writing.

Developed by: Carole Draper

LEVEL **K - 6**   TIME **20 - 30 minutes**

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--To possess a broad-based vocabulary

MATERIALS:

Paper and pencil

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:	LEARNINGS:
The student:	In order to:

COGNITIVE:

INTRODUCTION:

The teacher will explain what <u>alliteration</u> is: A form of expression whereby all the words, or the main words, in a sentence or short verse begin with the same letter. For example: "Fast Freddie Fights Fires Furiously" or "Silly Sue Saved Sausages Since Saturday."

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LESSON DEVELOPMENT:

1. The student will write a creative story, using the alphabet in sequential order. He may write on any topic he wishes -- real or imaginary.

EVALUATION:

The students will share their stories with each other.

— — — — — — — — — — — — — — — — —

ALPHABET STORY
By Patti Drake
(HIP Student)

An ant and a bear came to a dam where an elephant found a goldfish. He had indulged himself to a jaybird he had killed. The lion mangled the bird. "Now," said the fish. "Open that pest." Mr. Quail walked up to the rest by the dam. Mr. Quail said, "To mangle with someone else's bird is to make a wrong understanding of yourself." The lion vowed never to mangle with no bird other than his own. "Moral of this story is never mangle with stuff that isn't yours," said the Zebra.

(X word is missing.)

writes
creates
imagines
develops

compose
produce

a written story.

Given the alphabet, the student will write a creative story putting his words in sequential order according to the alphabet.

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ustiuuuio

ESSON DEVELOPMENT:

The student will write 5 sentences (or as many as they want) or verses using an alliterative form.

VALUATION:

he students will share their compositions ith each other.
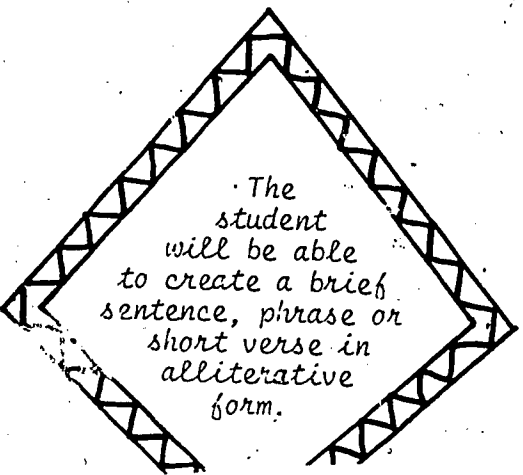
writes
records
composes
formulates

arrange and
create

phrases, sentence
or short verse in
alliterative form

·The student will be able to create a brief sentence, phrase or short verse in alliterative form.

235
175

KATE

Developed by: Carole Draper   LEVEL ___4 - 6___   TIME ___30 minutes___

INTELLECTUAL EFFECTIVENESS	ENTRY CONCEPTS: The ability to use a dictionary.	MATERIALS: Mini-Learning Center Paper and pencil Dictionary

	TEACHER TASKS:	STUDENT

		ENABLING BEHAVIORS:	LEARNINGS:
		The student: In order to:	

COGNITIVE:	INTRODUCTION: The teacher will explain that the child is to use the mini-center to find out what he is to do. The teacher will encourage the child to read and follow the directions for himself. LESSON DEVELOPMENT: 1. The child will have a specific number of words from which to choose the correct response to questions concerning their definitions. The words are: indicate adjudicate syndicate lubricate allocate eradicate educate authenticate reciprocate	chooses decide	correct response to the question.

2. The questions the child will answer are:

(a.) How can Kate spread her knowledge?

(b.) How can Kate keep the wheels turning?

(c.) How can Kate point the way?

(d.) How can Kate give a fair share?

(e.) How can Kate act as judge?

(f.) How can Kate declare it's the real thing?

(g.) How can Kate repay in kind?

(h.) How can Kate weed out and eliminate?

(i.) How can Kate pool together?

. The child may need to use the dictionary to find out the meaning of some or all of the words.

VALUATION:

he teacher and students will discuss the nswers to the questions. The teacher will sk the students to write or discuss orally ther sentences for these words.

> The student will be able to differentiate among a group of words having "cate" as an ending.

names	tell meaning	of selected word.

9 X 12 FILE FOLDER

MINI-
LEARNING
CENTER

KATE
1
2
3
4

finds	gain knowledge of	the meaning of a particular word.

ANSWERS:
a. educate
b. lubricate
c. indicate
d. allocate
e. adjudicate
f. authenticate
g. reciprocate
h. eradicate
i. syndicate

Concept/Competency

We can perform all five thinking operations--Cognition, Memory, Convergent Production, Divergent Production, and Evaluation--on Figural content.

Thinking with Shapes
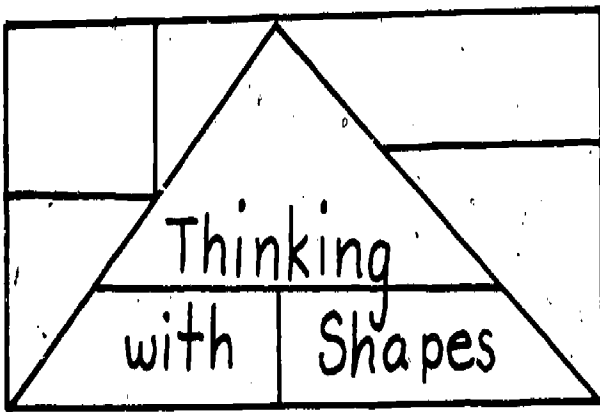
Developed by: Susan Sager   LEVEL 1 - 4   TIME 2 45-min. periods.

ENTRY CONCEPTS:	**MATERIALS:**
When dealing with figural content, we can notice likenesses/differences in shape, size, color, complexity, directionality, and other attributes.	Pattern blocks; Duplicated study pages and test pages from he SOI-M Workbook, p. 49; Tangram puzzles; pencils and crayons; Dittos of "skeleton" drawings; Box of kitchen matches.

(left margin, vertical: INTELLECTUAL EFFECTIVENESS)

TEACHER TASKS:

STUDENT

(left margin, vertical: COGNITIVE:)

TEACHER TASKS:	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to;	
INTRODUCTION:			
Say: "In this class we have done a lot of work with Figural content. That means shapes, sizes, colors, lines and so on.	listens	review	concepts dealing with Figural content.
Today we are going to think about shapes In several different ways. Did you know that your brain can do five kinds of thinking?"	listens and observes	grasp	the concept that there are five intellectual operations: cognition, memory, convergent pro- duction, divergent production and evaluation.
(Write each phrase on the board and then read it aloud:)			

178   2~~4~~0

Thinking About Shapes

Cognition--Recognizing shapes
Memory--Remembering shapes
CoNvergent Production--Producing known shapes
Divergent Production--Creating new shapes
Evaluation--Making choices about shapes

SSON DEVELOPMENT:

Say: "For our first thinking activity--Cognition--we will use the Pattern Blocks."

(Gather the children into a circle on the floor and give a generous portion of blocks to each one. Allow time for free exploration.)

Holding up different shapes one by one, ask: "What's this?"

To lead students to classify and analyze, ask such questions as:
"Which shapes have 3 sides? 4 sides? 6 sides?
Which small shapes can be put together to make other, bigger shapes?
Which big shapes can be taken apart to make other, smaller shapes?
You will be able to use these blocks again during your free period, if you wish."

Cognition Memory CoNvergent Production Divergent Production Evaluation	of Figural	Units Classes Relations Systems Transformations Implications	CSU CSC MSR NSS DST ESI

listens	identify	the process and material to be used for the first activity.
manipulates blocks	determine	their charac- teristics.
observes blocks	identify	individual shapes.
examines	discover	ways to classify blocks, relation- ships among the shapes; modular characteristics of the blocks.

179   241
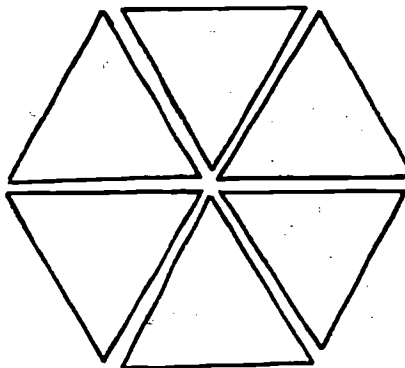
Say: "For our second thinking activity--
Memory--we will use these study pages.
Later, we will use test pages to help
you test your memory of these shapes."

listens	Identify	the process and material to be used for the second activity.

(Direct the children to take seats at
tables. Distribute study pages dupli-
cated from SOI-Memory Workbook, p. 49.
Ask the students to study the pairs of
figures and inform them that they will
be asked to draw the members of each
pair. Allow the students to study the
pages for approximately 60 seconds.

studies page	memorize	related pairs of figures.

Remove the study pages and present the
test pages. Ask the student to draw
the missing member of each pair. Provide
pencils. Ask the students to turn their
papers face down as soon as they complete
the task.)

recalls	draw	the missing members of related pairs of figures.

Say: "For our third thinking activity--
CoNvergent production--we will use
tangram puzzles. A tangram is a square
that has been sectioned into seven
pieces. Your task is to take these
seven pieces and reproduce the system--
that is, to reform the original square.
As you have discovered during your
previous work with tangrams, there is
only one way to do this. With most
CoNvergent production tasks, there is
only one right answer."

listens	Identify	the process and material to be used for the third activity.

(Distribute manila envelopes containing
tangram pieces. Place the model square
on the chalkboard tray so that the
children can see the figure they are to
reproduce. Allow time for work.)

organizes	construct	a square from the seven tangram pieces.

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	listens	identify	the additional figures to be formed with the tangram pieces.
"When you have formed the square, see if you can form these other shapes from the same seven pieces: the triangle, the parallelogram, the rectangle, and the trapezoid." (As you name each shape, place its model in the chalk tray. NOTE: These further tasks involve NFT-- CoNvergent production of Figural Transformation.)			
To encourage insight and analytical thinking, say: "Using two of your triangle pieces, can you form a square? a bigger triangle? a parallelogram? Put your seven-piece square together again. Do you see the two several-part triangles that it is made of?	organizes	construct	a square, a triangle, and a parallelogram using two triangle pieces only.
Do you see how you could make a seven-piece triangle? parallelogram?	organizes	construct	a square, a triangle, and a parallelogram and then a rectangle and a trapezoid, using all seven pieces.
What transformations would you have to make? What further transformations would you have to make to produce a rectangle? a trapezoid?	states	describe	the processes used to construct each figure.
When you have finished these tasks, replace the tangram pieces in their envelope."			

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.. Say: "For our fourth thinking activity--
Divergent production--we will use
'skeleton' drawings, like this one."
(Hold up a dittoed 'skeleton' drawing.)
"In the last kind of thinking we did--
CoNvergent production--we looked for
the one right answer. In this kind of
thinking--Divergent production--there
is no one right answer. Many, many
different solutions are possible."

Hold up the drawing one way and ask:
"What does this line make you think of?"
Rotate the drawing and ask: "Now what
does it remind you of?"
Rotate the drawing twice more.
Each time ask:
"Now what could it be part of?"
(Allow time for many possible answers.)
Say: "This is called a 'skeleton'
drawing because it is just the bare
bones of a drawing. You have to supply
the flesh. You are to build a drawing
around this line.

Everybody will have a different idea,
and everybody's drawing will be different
from every other drawing. When you
finish, this original line should still
be visible and should be a logical part
of the drawing you have created. You
may begin." (Allow time for students
to develop drawings.)

i. Say: "For our fifth thinking activity--
Evaluation--we will be doing some match
tricks. You will try to decide the best
solutions to the problems presented."
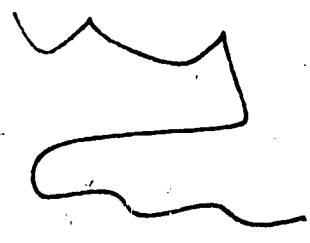
listens	Identify	the process and material to be used for the fourth activity.
examines	discover	many possible ideas on which to build a picture.
imagines	create	an original drawing built around a "skeleton" line.
listens	identify	the process and material to be used for the fifth activity.
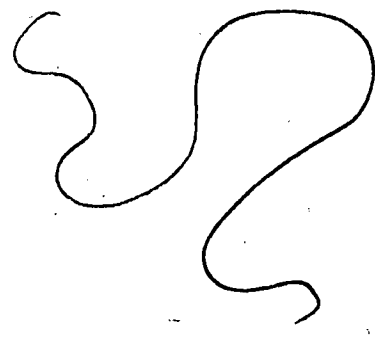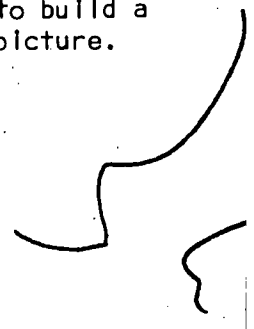
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(Gather the children into a circle on the floor. Lay out four squares composed of 13 matches like the diagram right.) Say: Can you remove just one match and have three squares left? There must be no matches left over. They must all help to form squares. Can you figure out before removing any matches which one would be the right one to remove?"

(Give each child a chance to visualize the best match to remove and then have him check it out be removing it.)

When a student discovers the solution, ask: "How did you decide that that would be the right match to remove?"

(Now lay out nine squares composed of 24 matches like the diagram right.) Say: "Can you remove exactly eight matches and have two squares left? As before, there must be no matches left over. They must all help to form squares. Can you figure out before removing any matches which ones would be the right ones to remove?"

(Give each child a chance to visualize the best matches to remove and then have him check it out by removing them.) If the students seem baffled, say: "What if the two squares don't have to be the same size?"
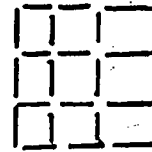
examines   discover   possible ways to solve the first match problem

experiments   test   his choices of possible solution: to the problem.

states   explain   the reasons for his decision.

examines   discover   possible ways to solve the second match problem.

experiments   test   his choices of possible solutions to the problem.

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(If the children are still unable to
choose the correct solution, tell them
that they may think it over and try
again another day.)

VALUATION:

ay: "You have done a good job of thinking
oday.
hich activity did you like best?
hat was hardest?
ow did you feel when you were trying to
raw those figures from memory?

e have been working with geometric figures
oday. How about some living geometry?
an three of you, lying on the floor, form
 human triangle?
an four of you form a square? a parallelo-
ram?
an six of you form a hexagon?"
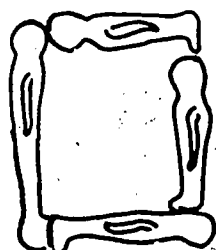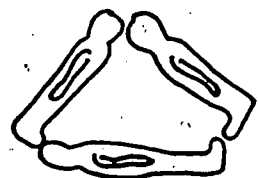
lapted from SOI Abilities Workbook by
uy Meeker, Ed.D., and Dennis Shadduck.
sed with permission by SOI Institute.

| evaluates | appraise | his feelings about and attitudes toward the five thinking activities. |
| moves | model | "living" geometric figures through psycho-motor activities. |

Given the opportunity to use and observe others usir
the five intellectual operations on figural content,
the student will demonstrate the ability to recogni:
classify, notice relations between, complete patterr
arrangements of, notice changes that have been made
and extrapolate information from items of figural
content.

"Students need to learn far more than the basic skills. For children who may still be in the labor force in the year 2030, nothing could be more wildly impractical than an education designed to prepare them for specific vocations or professions or to facilitate their adjustment to the world as it is. To be "Practical" an education should prepare them for work that does not yet exist and whose nature cannot even be imagined.

This can only be done by teaching them how to learn, by giving them the kind of intellectual discipline that will enable them to apply man's accumulated wisdom to new problems as they arise-- the kind of wisdom that will enable them to recognize new problems as they arise."

Charles E. Silberman

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Thinking with Symbols

We can perform all five thinking operations--Cognition, Memory, Convergent Production, Divergent Production, and Evaluation--on Symbolic content.
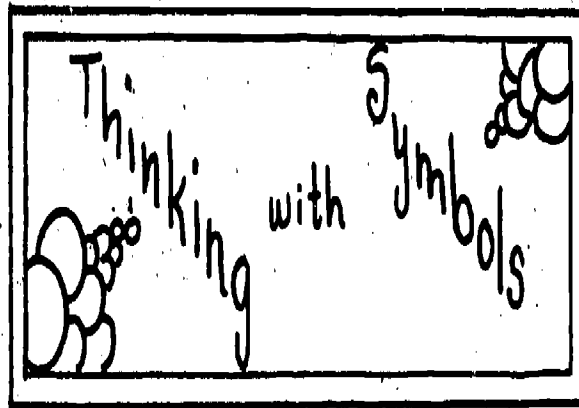
Developed by: Susan Sager

LEVEL ___1 - 2___   TIME __2 45-min. sessions__

	INTELLECTUAL EFFECTIVENESS	

ENTRY CONCEPTS:

--Ability to deal in a rudimentary way with numerals and letters

MATERIALS:

Copies of dittoed HIP Puzzle--Scrambled Animals;
Dittoed exercise based on SOI-C Workbook, p.82;
Xeroxed exercise from SOI-N Workbook, p. 107;
Pencils, crayons, chalkboard, chalk;
All 5 SOI Workbooks for teacher information

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:	LEARNINGS:
The student: In order to:	

INTRODUCTION:

Say, "Since you have been at school, you have learned a lot about Symbolic content such as numerals and letters...Symbols are signs that stand for something else. For example, this (writing a numeral 4 on the board) can stand for these (drawing 4 apples). And this (writing an s on the board) can stand for the sound - 'ssss'."

"Today we are going to think about symbols in several different ways. Do you remember the 5 kinds of thinking that your brain can do?" (Write each phrase on the board and then read it aloud.)

listens	learn or review	the meaning of the term, symbolic content.

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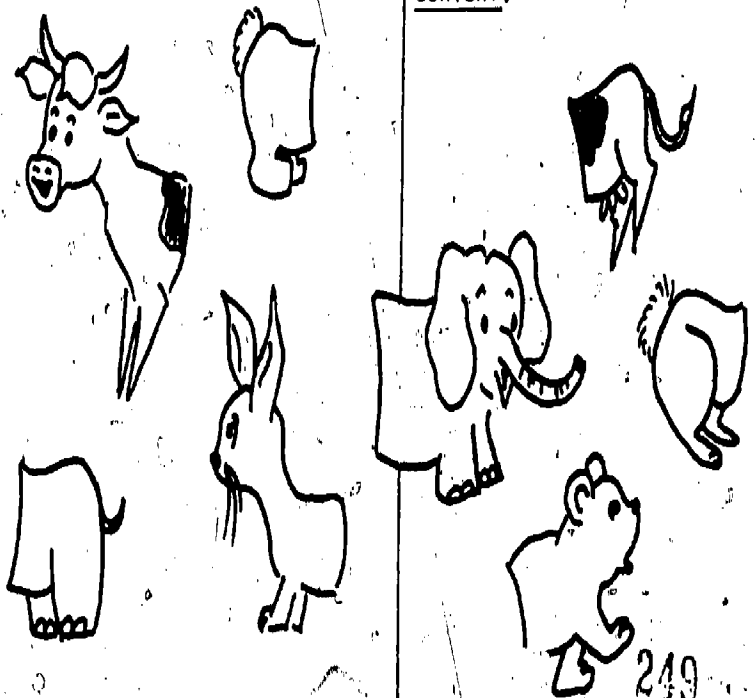
Thinking About Symbols

1) Cognition - Recognizing Symbols
2) Memory - Remembering Symbols
3) CoNvergent Production - Producing correctly the required symbols
4) Divergent Production - Generating new ideas from symbols
5) Evaluation - Making decisions about symbols

ESSON DEVELOPMENT:

"For our first thinking activity - Cognition - we will use these special HIP Puzzles and worksheets." Distribute HIP Puzzles, worksheets, pencils and crayons.

"This HIP Puzzle is called Scrambled Animals. Can you tell what animal names these letters will spell when they are 'unscrambled' and written in the correct order?" (Allow time for comments.) "You may take this puzzle home and share it with your family.

Now look at the worksheet with picture of balloons. Each balloon has a word written on it containing an initial consonant blend like 'bl-'. Underline all the consonant blends that are the same. Then color all the balloons with the same blend the same color. Then find a different initial consonant blend and underline it in each word where it appears. Choose a different color for this group of word balloons. Do this for each different group of initial consonant blend word balloons. When all are colored, draw a string from each balloon to the bow."

Cognition		Units·
Memory		Classes
CoNvergent Production	of Symbolic	Relations
Divergent Production		Systems
Evaluation		Transformations
		Implications

CSU
CSC
MSR
NSS
DST

ESI
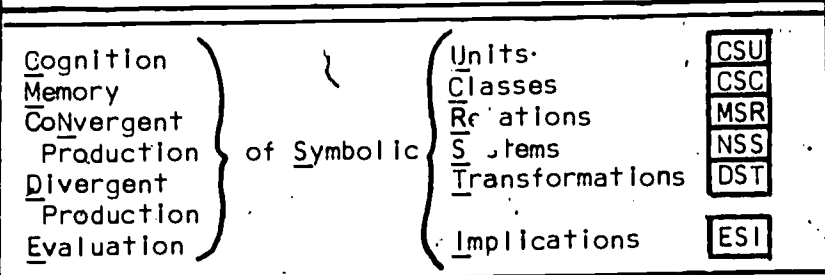
listens	Identify	the process and material to be used for the first activity.
observes	determine	what animal names will be correctly spelled when the letters are placed in the proper order.
analyzes	classify	words into categories according to the initial consonant blend which they contain

bl cr sl
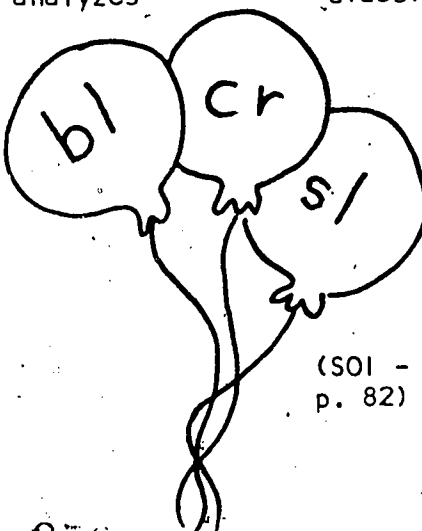
(SOI - See p. 82)

(While the students are completing the cognition task, write the following pairs of numbers on the board for the Memory task.)

(1)	(2)	(3)
6 - 10	12 - 13	8 - 4
4 - 8	1 - 2	10 - 5

(4)	(5)
5 - 15	2 - 12
4 - 12	3 - 18

listens and observes — identify — the process and material to be used for the second activity.

"For our second thinking activity--Memory-- we will look at the numbers in the boxes.
Look at each two pairs of numbers. What relation is involved? (Allow the students to examine and discuss, in turn, the two pairs of numbers in each box.) Notice and remember the relation involved in each two pairs of numbers. You will be required to describe these relations from memory." (Allow the students to study the board for approximately 60 seconds. Erase.)

studies — memorize — the relation involved in each two pairs of numbers.

"Now...Mike, can you describe the relation involved in the two pairs of numbers in box (1)?" (Continue calling on different students to describe the relation involved in each two pairs of numbers.)

recalls — describe — the relation involved in a set containing two pairs of numbers.

3. "For our third thinking activity - coNvergent production - we will use these worksheets with triangular patterns of ordered numbers and letters. (Distribute worksheets. As the students are looking them over, write the following example from the SOI-N Workbook, p. 106, on the board.)

listens and observes — identify — the process and material to be used for the third activity.

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   1          (A)   7
              (B)   ⑧
  2   3       (C)   9
              (D)   10
 4   5   6    (E)   11

___  ?  ___  ___
```

(Explain how the pattern was completed
to obtain the answer. Allow time for
discussion.)

"Figure out the ordered pattern of   examines   isolate   the items needed
numbers or letters in each triangle on   in order to com-
your worksheet. Then choose the correct   plete ordered
missing number or letter from the five   patterns of number:
alternatives given, and circle it. You   and letters.
may begin."

"For our fourth thinking activity -   listens   identify   the process and
Divergent production - we will play a   material to be
game called "Guess My Rule."   used for the
                                                                                             fourth activity.

(Ask a student to name two numbers.   plays a game   discover   the rule by which
Respond with one number - the addition   three numbers are
or subtraction of the two figures given   related.
by the student, for instance. Continue
in this manner until a student thinks
that he has discovered a rule for
naming the number. Then test his
discovery by asking him to respond to
two numbers that you give. If he does
so correctly, have him verbalize the
rule.
See the SOI-D Workbook, p. 77, #1.)

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"For our fifth thinking activity - Evaluation - we will look at given letter sets and then at three alternatives. You will try to judge which of the three-letter combinations is most like the given standard."	listens and observes	identify	the process and material to be used for the fifth activity.
(Write the following from the SOI-E Workbook, p. 97, on the board.)	considers	judge	which of three alternative letter combinations is most like the given standard.

A. oes   1. oit   B. lee   1. ret
          2. orr   2. boo
          3. ocr   3. cor

C. cde   1. cbc   D. dod   1. bug
          2. hij   2. dec
          3. dek   3. gog

"Look at set A. The standard given is oes. Which three-letter alternative is most like the standard given? Why?"

(Continue in this manner with the rest of the items. Each time, allow discussion and ask a student to verbalize the reason or rule.)	considers	conclude	why the alternative chosen is most like the standard given
ALUATION: You have now done five thinking activities with symbols. Which one did you like the best? Which was hardest? Why?	evaluates	appraise	his feelings about and attitudes towar the five thinking activities.
You have been working with symbols today. Can you build 'living' numerals or letters by lying on the floor? Who can be a 1? Can two of you form a 2? a 3? Can three of you form a capital A? B? etc."	moves	model	"living" numerals and letters through psychomotor activities.

Given the opportunity to use and observe others using the five intellectual operations on symbolic content, the student will demonstrate the ability to recognize, classify, notice relations between, complete patterned arrangements of, notice changes that have been made in, and extrapolate information from, items of symbolic content.

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FORMATION OF LETTERS

ABCDEFG
HI JKLMNO
PQRSTUV
WXYZ

Formation of Letters)
dapted from _Action_ _in_ _Learning_ by
mma M. Langhorst and Marie L. McPherson.
deal School Supply Co., Oak Lawn, Ill.,
974.

(Thinking With Symbols Unit)
Adapted from _SOI_ _Abilities_ _Workbook_
by Mary Meeker, Ed.D., and Dennis
Shadduck. Used with permission by
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Picture Perfect

Information can be ordered into a
verbally meaningful experience.

Developed by: Carole Draper   LEVEL __K - 1__ TIME __30 min.__

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
The student is aware that stories have a
logical sequence - beginning, middle, end.

MATERIALS:
Several pictures from a familiar story

COGNITIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	
INTRODUCTION: The teacher will read a story to the students several times, displaying the pictures as she reads. This enables the child to become familiar with the story sequence.	listens and absorbs	comprehend and recognize	the sequence of events in the story.
LESSON DEVELOPMENT:			
1. The teacher arranges pictures of the story in a scramble fashion along the chalk tray.	observes	recall	sequence of the story.

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cture Perfect

    The teacher has a child rearrange the
    pictures to show the logical sequence.

    The teacher may continue doing this
    activity with other stories and
    pictures.

/ALUATION:

ne teacher will ask the students such
Jestions as:

--What occurred at the beginning of the
  story?
--What happened in the middle?
--What events occurred at the end?
--Can you tell me what the sequence of the
  story is?
--Can you make up your own story and
  illustrate it so we can unscramble your
  pictures?

rearranges   demonstrate   the logical
                                     sequence of the
                                     story.

*Given several pictures from
a familiar story, the student
will be able to successfully
demonstrate the logical
sequence of a story.*

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Polygons

Developed by:
Susan Sager

BASIC GEOMETRIC FIGURES

Polygons can be classified by
counting and comparing their
sides and angles.

LEVEL ___K - 2___   TIME ___1 hour +___

INTELLECTUAL EFFECTIVENESS	
ENTRY CONCEPTS: Experience gained from lightly-directed play with design blocks, tangrams, and a variety of other geometric forms, and from lightly-directed activities with rulers and protractors.	**MATERIALS:** A variety of triangles and regular quadrilaterials, plus one example of each of the regular polygons with five through ten angles; Rulers and protractors; Chalkboard and chalk

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:	LEARNINGS:
The student: In order to:	

INTRODUCTION:

Say: "You have had the experience of handling many different plane and solid geometric figures.

What does <u>plane</u> mean?
How many <u>dimensions</u> does a plane figure have?
What are they?
What does <u>solid</u> mean?
How many <u>dimensions</u> does a solid figure have?
, What are they?

The student:	In order to:	LEARNINGS:
listens/ responds	review	concepts about plane and solid geometric figures.
	(flat; two; height, width) (bulky; three; height, width, thickness)	

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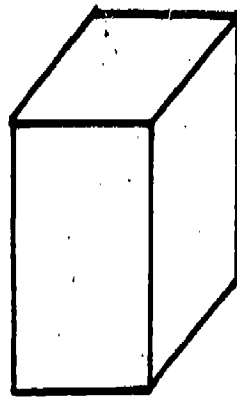
Polygons

Today we will be working with plane
figures, which are called polygons.
The word polygons comes from the old
Greek language. Poly- means many and
-gons means angles."
(Write word elements and their meanings
on the board.)

LESSON DEVELOPMENT:

"Here are some examples of polygons.
What do you notice about them?

How would you define the word polygons?
Does your definition fit all these
figures?

Figures with three angles are called
_____.
Tri- means _____.

Figures with four sides are called
quadrilaterals.
So quadr- must mean_____
and laterals must mean_____.

Figures with more than four angles are
named according to how many angles
they have.
This figure has _____ angles.
It is called a pentagon.
So penta- must mean_____."

(Continue in the same way with a
hexagon, heptagon, octagon, nonagon,
and decagon, each time listing the new
word element and its meaning on the
board.)

listens   acquire   new vocabulary.

responds   demonstrate   knowledge of
(Answers will vary.)   concepts and
                                        vocabulary
                                        relating to
                                        polygons.

(A polygon is a plane
 figure with three or
 more angles.)

(triangles;
 three.)

(four:
 sides)

(five;

 five)

(etc.)

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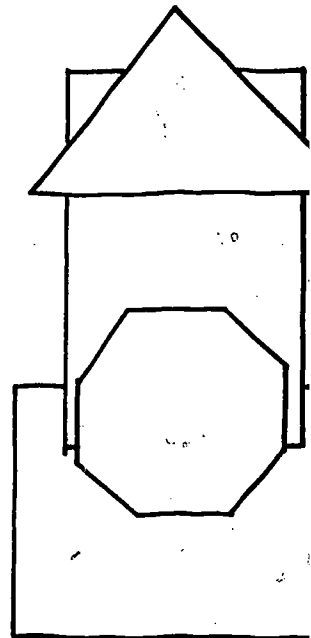
1. "What might you see around you that is shaped like a triangle?

Like a rectangle?

What famous building in Washington, D.C. is based on the figure that has five angles?

What could you eat or walk on that might be shaped like a hexagon?

What do you see every day that is shaped like an octagon?"

2. Divide the class into two groups and say: "I will give all the triangles to one group and all the quadrilaterals to the other group. I will display the rest of the polygons in the chalk tray." (Distribute the figures.)

"What characteristics do these figures have that you can notice?

See if you can classify your figures into several groups according to some characteristics they have in common. For example, do the corners of any figures fit exactly into the angle where floor and wall meet or where two walls meet? This is called a right angle."

(Allow time for the students to handle and discuss the figures and devise their own systems of classification.)

responds	demonstrate
(Certain traffic warning signs, etc.)	
(Speed limit signs, mileage signs, etc.)	
(the Pentagon)	
(certain snack crackers or floor tiles)	
(stop signs)	
listens	identify
examines	isolate
investigates	detect
analyzes	establish

the ability to relate mathematical concepts to life experience.
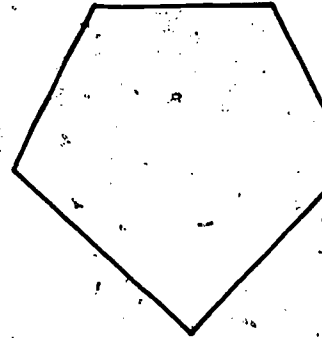
the processes and materials to be used in the lesson.

specific characteristics of plane figures.

figures which have one or more right angles.

suitable categories.

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"Triangle people, what categories have you established?" (List on chalkboard.)	responds · · · · · · describe	a system for classifying————— triangles.
"Quadrilateral people, what categories have you established?" (List on chalkboard.)	responds · · · · · · describe	a system for classifying quadrilaterals.
All right. Now, I am going to trade off the figures so that each group gets a chance to work with both kinds. Also, I am now going to give you some additional tools to work with--rulers and protractors.	listens · · · · · · determine	procedures to be used for further ·checking character- istics of plane figures.
Examine the figures again and see if you need to revise your categories." (Allow time for this activity as before.)	examines · · · · · · isolate	additional charac- teristics of plane figures in order to revise system of classification.
"Triangle people, on what basis did you devise or revise your categories? What categories did you finally agree on?" (Record elicited category descriptions in organized, parallel form. As you read each one aloud, provide the correct name for the category.)	responds · · · · · · describe (comparison of sides) (comparison of angles) (all <u>three</u> sides equal; two sides equal; no sides equal) (one angle a <u>right angle</u>; one angle <u>greater than</u> a right angle; one angle <u>much less than</u> a right angle)	a revised system of classification. (equilateral triangle isoceles triangle; scalene triangle) (right triangle; obtuse angle; acute angle)

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"Quadrilateral people, on what basis did you devise or revise your categories?	responds describe	a revised system of classification.
	(comparison of sides) (comparison of angles)	
What categories did you finally agree on?" (Record category descriptions and provide correct names as before.)	(two equal parallel short sides and two equal parallel long sides;	(rectangle or parallelogram;
	four equal sides;	square or rhombus;
	one short side parallel to one long side and two equal sides parallel to each other)	trapezoid)
	(four right angles;	(square or rectangle;
	two obtuse angles diagonally opposite and two acute angles diagonally opposite;	rhombus or parallelogram;
	two obtuse angles side by side and two acute angles side by side)	trapezoid)
After we evaluate our lesson on polygons, you may create symmetrical designs using these shapes. You may use pattern blocks, design blocks, or graph paper, rulers, and colored pencils. Do you think you could build three-dimensional as well as two-dimensional symmetrical designs?"	listens determine	the procedures and materials to be used for the creative activity following the formal lesson.

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/ALUATION:

"What did you learn about polygons today?   considers   judge   the effectiveness
What did you learn about the process of   of the lesson.
classification? Do you think it is
important to be able to describe in words
relationships that you can see? Why?
What might help you to do this even
better?"

Given the opportunity to become familiar
with polygons, relate them to shapes
seen in the environment, compare and
analyze them, create designs with them,
and evaluate learnings about them, the
student will devise a logical system
for classifying polygons based on count-
ing and comparing sides and angles.

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Snakes and Swans

SHAPE PERCEPTION - SYMMETRY
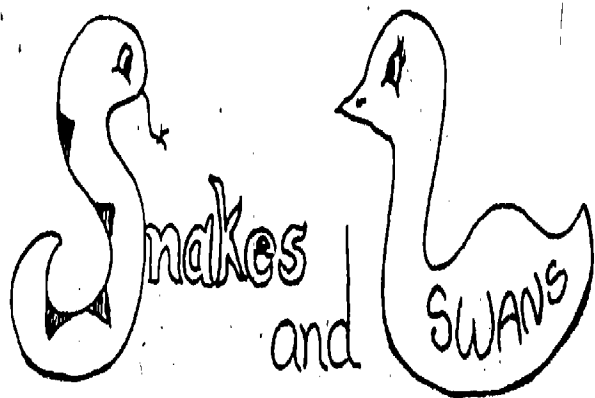
When an arrangement of figures has bilateral symmetry, one half of the arrangement is the reflection or mirror image of the other half.

Developed by: Susan Sager

LEVEL K - 2   TIME 2 30-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

--Ability to recognize left-to-right directional orientation in figural items

MATERIALS:

Chalkboard and chalk; Yard sticks & label cards;
Exercises with 4 half-designs to be completed;
Snakes and Swans puzzles, or equivalent;
Two sets of square silhouette cards -
   Snakes and swans (backs and fronts have
   opposite orientations)
White mimeo paper and scissors

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	In order to;	

COGNITIVE:

INTRODUCTION:

Say: "Today we are going to learn about something interesting called symmetry. Symmetry is much easier to show than to tell about. So we will be doing some fun activities that will make it clear to you what symmetry is.

LESSON DEVELOPMENT:

1. (Draw a large rectangle on the chalkboard. Draw a vertical axis down the center. Tell the students what you are doing.)

listens	become aware that	there is something unfamiliar but interesting called symmetry.
observes and listens	become oriented to	the first activity-- building a base of knowledge and comprehension.

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Then say: "Pretend the rectangle Is a piece of paper. Pretend that you folded the paper along its axis and cut a design like this"

(Starting at the axis, draw a shape in one half of the rectangle, similar to the one in the illustration.)

uses his/her imagination	visualize	the result caused by the action of folding and cutting paper.

Ask: "When I unfold the paper, what will happen?
What will it look like?
Who would like to draw the other half of the design?"
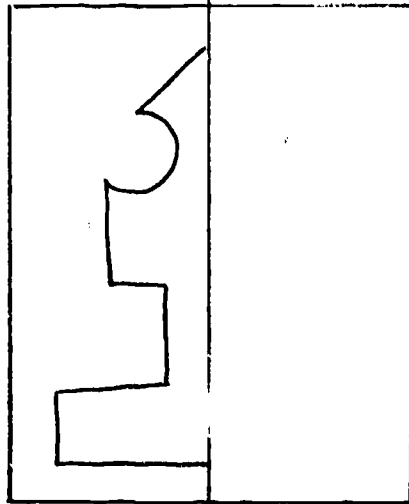
predicts a result	demonstrate	comprehension of one kind of cause/effect relationship.

(Have a student draw the missing half of the design in the empty half of the rectangle.)

draws the missing half of a symmetrical design	demonstrate	the psychomotor ability to pro- duce the accurate reflection of an outlined shape.

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Verbally summarize the concept: "Now we have a symmetrical design. One half reflects the other half. One half is the mirror image of the other half. It is identical...except that it points in the opposite direction. This design has bilateral--or two-sided--symmetry on a vertical--or up-and-down--axis.	listens and observes	assimilate and integrate	the concepts: symmetrical reflection mirror image vertical axis bilateral symmetry.
Here are some more half designs, so that everyone can try drawing the missing halves. You will be completing designs with bilateral symmetry on a vertical axis.	completes unfinished symmetrical designs	reinforce	psychomotor skills and concepts involving symmetry.
(Distribute duplicated sheets with four half designs in rectangles for students to complete.)			
After most of the students have had a chance to complete the designs, say: "Many things in nature have bilateral symmetry, including people." (Facing the group, stand stiffly, feet slightly apart, arms out, like a fold-and-cut paper doll.) Say: "Imagine that there is a line right down the center of me--a vertical axis. What do you notice?" (Discuss.)	listens and observes	extend his/her	understanding of bilateral symmetry
"People are bilateral in design. So are some other living creatures. Can you name some?" (Discuss.)	names creatures with bilateral symmetry	demonstrate	the ability to recognize examples of bilateral symmetry in the environment.
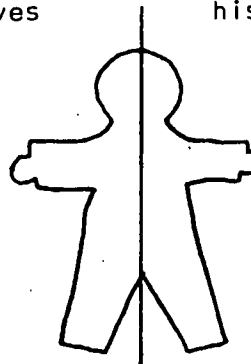
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"People can also engage in bilateral <u>activities</u>. Watch what I do now."

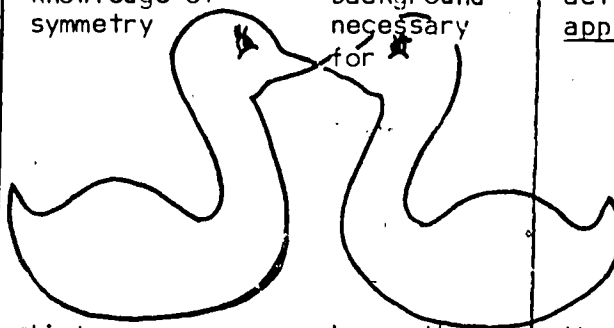|			
listens, responds, and observes	develop an awareness that	the ferm <u>bilatera</u> can refer to <u>function</u> as well as to <u>structure</u>.

(Again, make a large rectangle on the board, with a vertical axis. Taking a piece of chalk in both hands, simultaneously draw <u>both halves</u> of a symmetrical design.

observes and participates	see and demonstrate	a psychomotor activity involvin bilaterality.

Say that everyone who wishes to try this may do so during the free activity period that follows.)

On another occasion, say: "Let's see how well you understand symmetry. Let's see if you can <u>transfer</u> what you know, and recognize symmetry in new and different situations."

recalls knowledge of symmetry	develop background necessary for	the second activity-- <u>application</u>.

(Display the Snakes and Swans* puzzles, if available, or two identical abstract snakes and two identical abstract swans drawn on large squares of cardboard or cut out of wood.)

Say: I will hold up the two swans side by side several times. Each time I will do something to one or both swans. I will <u>rotate</u> it--turn it around--or <u>reflect</u> it--flip it over." (Demonstrate.)

listens and observes	learn the meaning of	the concepts: rotation reflection.

"Each time I make one of these transformations. tell me whether the two swans make a symmetrical arrangement on both sides of an imaginary line between them. Answer yes or no."

observes and responds	demonstrate	the ability to distinguish symmetrical and asymmetrical side-by-side arrangements of identical figures.

*See last page.

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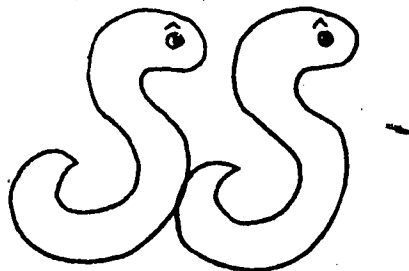
Change the orientation of the swans to
one another several times, each time
asking, "Is   a symmetrical
arrangement?

(Do the same   the snakes, changing
their orie   n to each other on
opposite   , of an imaginary vertical
axis. Continue until the students can
identify symmetrical and asymmetrical
arrangements with assurance.)

Elicit a g oralization by saying: "How
can we tell when an arrangement is
symmetrical?"

(See the Concept/Competency at
the beginning of this lesson.)

Say: "Now you will have a chance to
arrange many pairs of identical cards
side by side with different relation-
-ships to each other. Then you will
classify each arranged pair as
Symmetrical or Not-Symmetrical.

We will work in two groups. I will place
two class label cards on the floor for
each group, and separate them by a
yardstick.

Working with your group, you will
arrange and correctly classify all the
possible different side-by-side arrange-
ments of two identical cards. How many
such possibilities do you think there
will be?"

observes and responds	demonstrate	the ability to generalize the concept of symmetry.
verbalizes concepts	develop	an operational definition of symmetry.
listens	determine	procedures to be used during the third activity-- convergent production and analysis.
arranges silhouette cards	discover	all the possible side-by-side symmetrical and asymmetrical arrangements of pairs of identical cards.
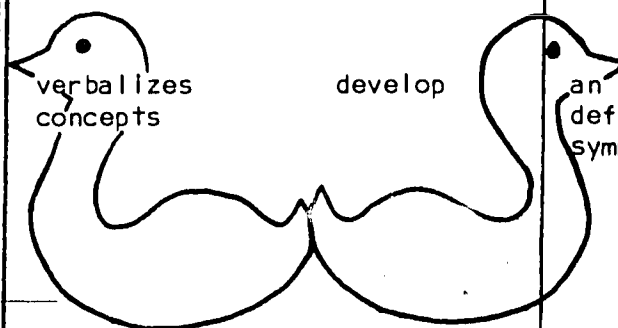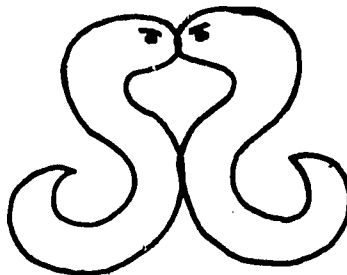
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- (Provide scissors and white paper. Have the students fold vertical axes, then cut a design with bilateral symmetry. Show them how to make various cuts. Tell them to try many kinds of cuts and make the designs as complex and beautiful as possible.

  Display the completed designs backed on colored construction paper. Provide a sentence-strip label that reads: Fold-and-Cut Designs with Bilateral (Line) Symmetry on a Vertical Axis.)

EVALUATION:

- Discuss:
  What do you know about symmetry that you didn't know before?
  Why do you think that it might be important to know about symmetry?
  Which activity did you like best? Why?

Purchase: "Snakes and Swans" made in Switzerland for Creative Playthings. Designed by Fredun Shapur.

folds and cuts	engage in	the fourth activity-- synthesis
considers the lesson on symmetry	take part in	the fifth activity-- evaluation

Given a variety of experiences with symmetry, the student will demonstrate awareness that in bilateral symmetry, one half of the system is identical or similar to the other half, except that it reflects or mirrors it.

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RAINBOW COLORS

Developed by Susan Sager

COLOR PERCEPTION

The "rainbow" colors of the six-color wheel are red, orange, yellow, green, blue, and violet. The primary colors are red, yellow and blue. The secondary colors mixed from them are orange, green and violet.

LEVEL __K -2__   TIME __One hour plus__

ENTRY CONCEPTS: Different colors are produced when we mix various combinations of red, yellow and blue paint.	**MATERIALS:** Chalk, chalkboards Set of eight crayons for each student Prism, light source Newspaper Drawing paper Boxes of watercolors Water jars

Side label: INTELLECTUAL EFFECTIVENESS

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS: The student: In order to:		LEARNINGS:

Side label: COGNITIVE:

INTRODUCTION:

Say: "Class, I would like you to close your eyes and think about <u>color</u>. Try to recall some of your experiences with color."

(Allow time for recollection.)

"Now, open your eyes. What facts can you tell me about color?"

(Conduct <u>concept diagnosis</u>: Accept without comment all contributions, correct or erroneous, and list them on the board. This indicates the students current level of knowledge about color.)

The student:	In order to:	LEARNINGS:
meditates	remember	many previous experiences with color.
recalls	state	as many facts as possible relating to color.

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Rainbow Colors

"Today we are going to do some activities with color that may add to your knowledge about it." (Distribute boxes of crayons with eight colors.)	listens	determine	the procedures and materials to be used during the lesson.
LESSON DEVELOPMENT: 1. "When you paint, what three basic colors do you use that are <u>not</u> produced by mixing two other colors?	recalls	demonstrate	Knowledge acquired b previous paint-mixin experience with a limited palette of primary colors only.
Remove these three colors from your crayon box. Place them on the table with their points touching so that they are like the spokes of a wheel. Leave an equal amount of space between them, like three equal pieces of pie." (Allow students an opportunity to arrange crayons correctly.)	places crayons	show	ability to translate verbal instructions into tangible form.
"These are called <u>primary colors</u>. Prim- comes from the old Latin language. It means <u>first</u>." (Write the element and its definition on the board.)	absorbs	retain	information about English word element that come from Latin
"These colors are called primary colors because they are the first, most basic colors from which all other colors can be mixed. You can produce other colors by mixing two primary colors. Can you produce a primary color by mixing two other colors?	listens	learn	the definition of primary colors.

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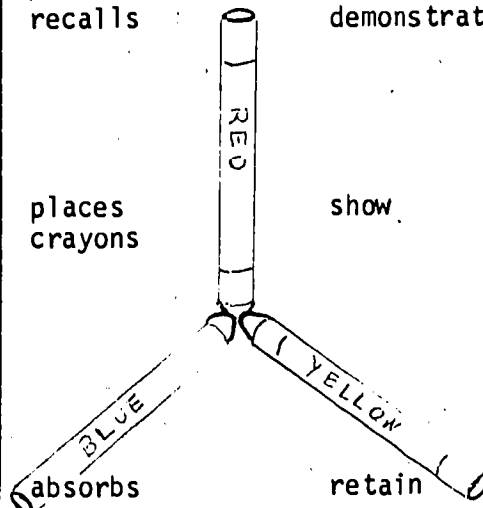
2. "Colors are used in many special ways. For example, some colors are used as signals. Can you think of some examples in which colors are used this way? What about red?" (etc.)
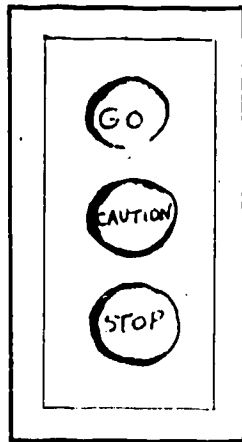
3. "What color would you get if you mixed red and yellow paint? Take that color and place it between the red and yellow crayons in your color wheel.

What color would you get if you mixed yellow and blue? Place that color between yellow and blue.

What color would you get if you mixed blue and red? Place that color between blue and red.

reports   relate

(red-stop light, sign
      fire truck
      no parking zone

yellow-caution light, sign
      school bus
      waiting zone

green-go light
      mileage sign

blue-signs indicating
      traveler facilities
      along highways

orange-signs indicating
      road construction

etc.)

considers   determine

color concepts with general life experiences.

how primary and secondary colors are related to each other
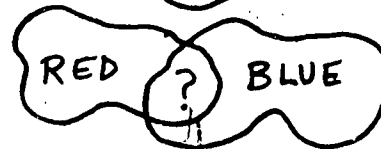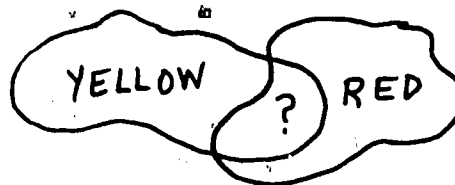
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he colors we produce by mixing two rimary colors are called <u>secondary</u> olors.	compares	distinguish	contrasting character-istics of primary and secondary colors.
ɔu now have a six-color 'wheel'. Leave n equal amount of space between your spokes' like six equal pieces of pie. hat does this six-color range remind you f? Why?	examines	discover	the similarity between a color wheel and a rainbow.
ə will now create a rainbow right here ı our room. To do this, we will shine iite light through a prism in a dark ɔom." Set up and utilize this demonstration. llow the students the opportunity to Iscuss the results.)	listens observes	investigate	the behavior of light with a prism.
iis range of colors is called the ɔectrum. <u>Spect-</u> comes from the Latin ɔrd meaning <u>to see</u>." Vrite the element and its definition on ıe board.)	examines	analyze	the etymology and meaning of the word <u>spectrum</u>.
ıe spectrum represents the range of ɔlors we can <u>see</u> when white light is ɔparated into the different colors ıat it is made up of. If you want to ıow more about how this works, look up ıe articles on <u>color</u>, <u>light</u> and <u>rainbow</u> ı an encyclopedia."	investigates	discover	additional concepts about the nature of light and color.

LIGHT

PRISM

RED
ORANGE
YELLOW
GREEN
BLUE
VIOLET
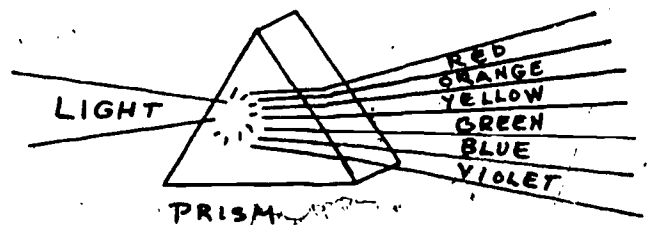
"Now you may create a crayon drawing of a rainbow. How will you arrange the colors? Which color will be on top?

(Allow discussion of this point.)

If students are divided between red and violet, say:

"You're both right. Do you know how this is possible?"

(After allowing further discussion, explain the primary and secondary arcs of a complete rainbow.)

"If you will put on your rainbow color very heavy and waxy, you may paint over your picture with watercolor and produce a watercolor crayon resist mixed media work."

(Distribute newspapers and drawing paper. When the students are well advanced on their drawings, distribute boxes of watercolors and water jars.)

hypothesizes	predict	how colors will be arranged in a rainbow.
listens	augment	knowledge of the characteristics of rainbows.
composes	create	an attractive watercolor crayon resist picture of a rainbow.

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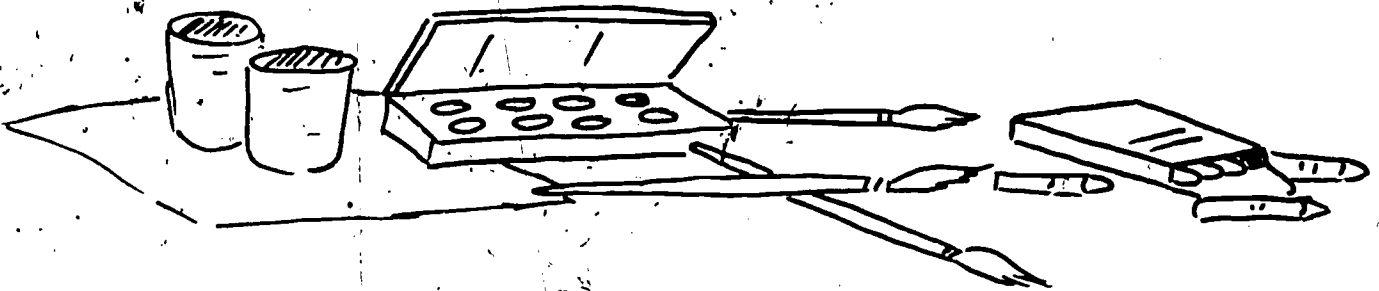
ALUATION:

"Now let's look at the list of facts
you dictated to me at the beginning of
the lesson. Do we need to eliminate
or modify any of these statements?
What do we need to add? What have
you learned about color today that
you didn't know before?

And let's look at the watercolor crayon
resist drawings. Which ones have rich
colors that show brilliantly through
the watercolor? Which ones have placed
the rainbow in an interesting setting?
Which look stormy and dramatic?
peaceful and tranquil?
How were these effects produced?
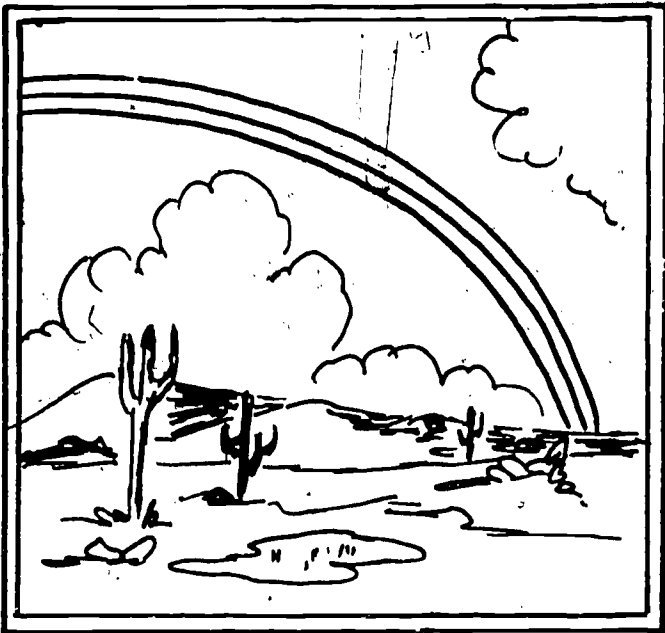
| appraises | decide | the correctness and completeness of previously listed statements about color. |
| considers | evaluate | watercolor crayon resist pictures of rainbews. |

*Given appropriate experiences
with color, the student will
distinguish the primary and
secondary colors and deter-
mine gradations in hue.*

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The DULL and BRIGHT of it!

/ / / | \ \

Developed by Susan Sager

Pure colors are more intense and seem to advance -- in contrast with neutral colors which are less intense and seem to recede. A color is made increasingly neutral as more of its complement is added to it.

LEVEL   K - 6   TIME 2 45-min. periods +

INTELLECTUAL EFFECTIVENESS	ENTRY CONCEPTS:	MATERIALS:
	There seem to be several different kinds of any one color. Some kinds are brighter than others. Some are softer -- not as bright.	Color Wheel Large color intensity demonstration cards; Small paint color chips in a range of intensity for each primary and secondary color; Painting materials, including red, orange, yellow, green, blue, and violet tempera paints; Art prints

|	TEACHER TASKS:	STUDENT	
		ENABLING BEHAVIORS: The student:	LEARNINGS: In order to:
COGNITIVE:	INTRODUCTION: Say: "Boys and girls, when we name a color, such as red, we may not all be talking about the same thing. There are many different kinds of red. Look around our classroom. Who has on a bright red shirt? Whose shirt is less bright -- a softer red?" (Repeat with several other colors.) LESSON DEVELOPMENT: 1. Say: "When a color is as bright and clear as it can be, we say that it is pure. When it has been softened and changed until we almost can't recognize it any more, we say that it is neutral."	listens and observes identify listens and learn observes	different intensities of the "same" color (hue). the meaning of the terms pure/ neutral and more intense/less intense.

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(On the chalkboard, diagram the continuum:
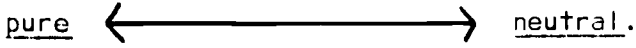
pure $\longleftrightarrow$ neutral.

Place demonstration cards from both ends of the red continuum under their respective labels.)

Say: "Pure red......neutral red."
(Repeat for yellow and blue.)
Summarize: "Pure colors are more intense. Neutral colors are less intense."

(Have pairs of students work together to arrange paint color chips for the primary and secondary colors in continuum series from pure (more intense) to neutral (less intense)).

arranges color chips		demonstrate	the ability to perceive gradations in color from more intense to less intense.

Ask: "If you were mixing colors, how would you make a bright pure color more neutral?"

hypothesizes	speculate	how pure colors can be made neutral.

(Allow students to experiment in mixing colors with tempera paints -- red, orange, yellow, green, blue, violet (no black or white). Lead them to notice what happens when a drop or more of its complement (opposite) is mixed with a pure primary or secondary color.)

experiments	determine	what happens when its complement is added to a pure color.

(Provide several large art prints for the students to analyze.)

Say: "Look at this print. what do the pure, bright colors seem to do?

What do the neutral, dull colors seem to do?

examines art prints	distinguish	what pure colors seem to do in contrast to neutral colors.
(stand out, come forward, advance)		
(be less noticeable, go back, recede)		

Why do you think the artist used pure, bright colors for this part of the picture?"	ponders	inquire	why artists choose intense colors for some areas of their paintings.
. Say: "Today you will create your own paintings, using what you have learned in studying and experimenting with color. Decide which part of your picture will be most important -- which part you want to stand out or <u>advance</u>. What kind of colors will you use for that part?"	listens (<u>pure</u> colors)	determine	the purpose for and the procedur to be used in tl activity.
&(Provide painting materials and informal guidance. Circulate among students and verbalize what each student is doing with pure and neutral colors.)	synthesizes learnings	create	a painting in which the intensity of colors, is consciously controlled to produce desired effects.

EVALUATION:

5. Discuss: "Why is it important for artists to know about <u>intensity</u> in color? What other occupations might need to know how color intensity works and how it can be varied?"	considers	judge	which occupatio require a know- ledge of color ; the ability to it skillfully.

Given the opportunity to experience and use varied intensities of color, the student will demonstrate an understanding of the terms pure/neutral and more intense/less intense and the ability to use this understanding in his/her own work.

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"We must cultivate talent in the way soil nurtures a seed. It provides for the growth of the seed but it does not tell the seed what to become."

--Sidney J. Parnes

"We are told by one and all to face reality. The question is, whose reality?"

--George Stoddard

"To construct and to create are quite different. A thing constructed can only be loved after it is constructed, but a thing created is loved before it exists."

--Gilbert K. Chesterton

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The **DARK** and **LIGHT** of it!

COLOR - VALUE

Lighter colors seem to advance. Darker colors seem to recede. Tints of a color can be produced by adding a small amount of the color to white. Shades can be produced by adding black to the color. Gradations in lightness/darkness are called value.

Developed by Susan Sager | LEVEL ___K - 6___ | TIME _2 45-min. periods_

	INTELLECTUAL EFFECTIVENESS	

ENTRY CONCEPTS:

There are several different kinds of any one color. Some kinds are lighter than the basic color. Some are darker.

MATERIALS:

Large value demonstration cards; small paint color chips in a range of value for each primary and secondary color; painting materials, including red, yellow, blue, black, white tempera paints; art prints emphasizing value

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:	LEARNINGS:
	The student:	In order to:	

COGNITIVE:

INTRODUCTION:

Ask: "Who is wearing the lightest color today? Who is wearing the darkest color? We are not including white and black as colors today. Who is wearing the lightest tint of red? Who is wearing the darkest shade of red?"

| listens and observes | identify | different values of the same color-- light/dark; tint/shade. |

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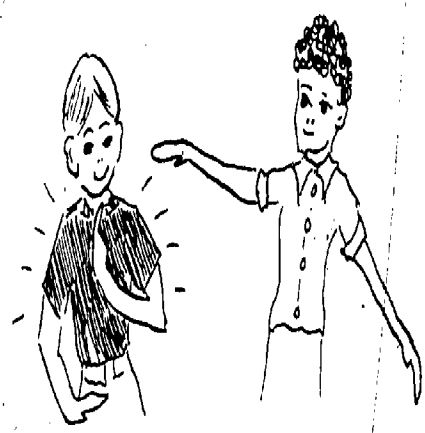
Say: "We start with a bright, pure color. When we <u>lighten</u> the color, we say that it is a <u>tint</u> of the color. When we <u>darken</u> the color, we say that it is a <u>shade</u> of the color. The range of light and dark we see in a picture is called <u>value</u>."

(On the chalkboard, diagram the continuum:

<u>tint</u> ← | pure color | → <u>shade</u>

Place demonstration cards for pure red and for both ends of its value continuum under the respective labels.).

Say: "Pure red....<u>tint</u> of red....<u>shade</u> of red."

(Repeat for yellow and blue.)

Summarize: "<u>Tints</u> of a color are <u>lighter</u> than the color. <u>Shades</u> of a color are <u>darker</u>."

(Have pairs of students work together to arrange paint color chips for the primary and secondary colors in a continuum series from <u>tint</u> (lighter value) through pure color to <u>shade</u> (darker value)).

listens and observes   learn   the meaning of the terms tint/ shade and lighter value/darker value

arranges   demonstrate   the ability to
color chips   perceive gradatio
                                         in value of a giv
                                         color from lighte
                                         tint to darkest
                                         shade.

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Ask: "If you were mixing colors, how would you make a pure color lighter? darker?

(Allow students to experiment in mixing colors with tempera paints -- red, yellow, blue, white, black. Lead them to notice what happens when a drop or more of pure color is added to white; and when a drop or more of black is added to a pure color. Notice that lighter tints are mostly white; hence, color is added to white. Black darkens colors very quickly; hence, black is added to colors.)

(For analysis, provide several large art prints in which value is a more important element than hue.)

Say: "Which areas in this picture seem to advance or come forward? Which areas seem to recede or go back?

We might compare light and dark value to being out in the sunlight or deep in a shadowy cave."

Say: "Today you will have an opportunity to paint with a very 'limited palette'-- only black and white!

See how great a range of values you can mix. See if you can make parts of your painting advance -- come out in the sunlight -- and recede -- sink back into the shade."

hypothesizes	speculate	how pure colors can be made lighter or darker
experiments	determine	what happens when a pure color is added to white, a when black is add to a pure color.
examines art prints	distinguish	what light colors seem to do in contrast to dark colors.
	(lighter areas) (darker areas)	
listens	determine	the purpose for and procedure to be used in the activity.

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Provide painting materials and informal guidance. Circulate among students and verbalize what each student is doing with light and dark values.)

synthesizes learnings

create

a painting in which gradations in value are consciously controlled to produce desired effects.

ALUATION:

Ask: "Why are we able to 'see' what is happening in black and white photographs, even though the 'real' world is in full color?

considers

judge

why value is important in helping us see what is happening in photographs and in the real world.

Why is value important?"

Discuss.

Given the opportunity to experience and use gradations in value, the student will demonstrate an understanding of the terms tint/shade and lighter value/ darker value and the ability to use this understanding in his/her own work.
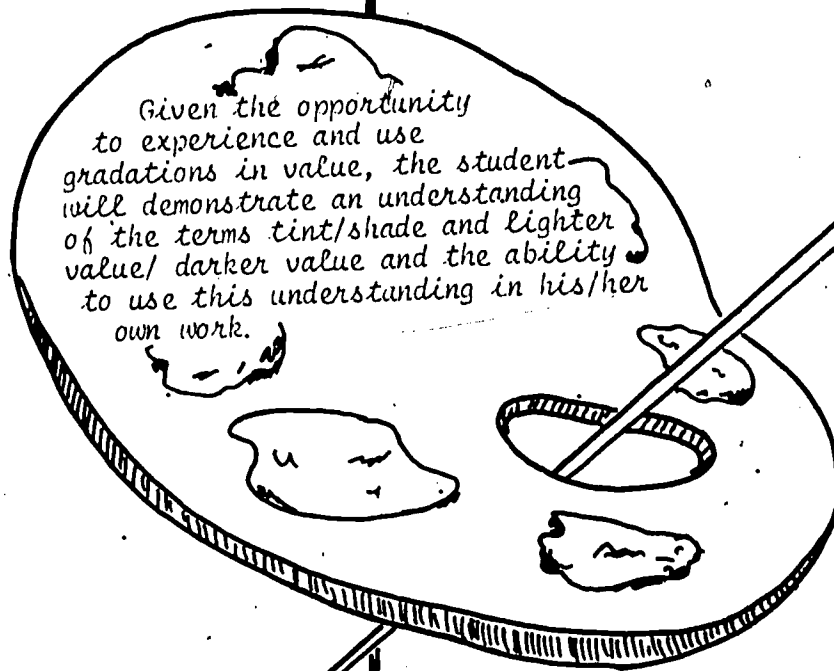
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Concept/Competency

PERSONAL SPATIAL ORIENTATION

Compasses help us to determine the cardinal and intermediate directions. We can determine our own location relative to given fixed points.

DIZZY DIRECTIONS

Developed by Susan Sager

LEVEL K - 4   **TIME** 45 minutes

INTELLECTUAL EFFECTIVENESS	ENTRY CONCEPTS:	MATERIALS:		
	The directions are north, south, east and west.	Compasses; Large label cards for north, south, east, west; Duplicated quizzes (optional)		

	TEACHER TASKS:	STUDENT		
			ENABLING BEHAVIORS:	LEARNINGS:
			The student: In order to:	

COGNITIVE:	INTRODUCTION:		The student:	In order to:	LEARNINGS:
	Say: "We are always located somewhere in space. We can help to describe our location by referring to the points of the compass."		listens	comprehend	the concept of personal spatial orientation relative to the points of the compass.
	(Show the students a compass or compasses. Allow them to examine it.)		examines a compass	become acquainted with	the structure and function of the compass.

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ay: "This needle always points <u>north</u>. If e rotate the compass until the needle point lines up with the line labled <u>N</u> for north... hen we can also determine which direction s <u>south</u> (<u>S</u>) and which directions are <u>east</u> E) and <u>west</u> (<u>W</u>).	listens	become aware that	when the direction <u>north</u> is ascertained, the other three cardinal directions can also be determined.
ESSON DEVELOPMENT:			
(Place the properly aligned compass at a central place in the room. Provide four students with direction label cards with tape hinges on the backs and have them correctly label the four walls of the classroom.	places labels	identify	north, south, east, west walls of the classroom. (Vary according to the characteristics of the classroom.)
Ask the children to lie on the floor with their heads pointing north, legs together, arms straight out, so that the body forms a cross.)	lies in the shape of a cross	experience	a body image of the four cardinal points of the compass.
Ask: "When your head is pointing <u>north</u>.... which direction are your feet pointing? Which direction is your left arm pointing? Which direction is your right arm pointing?	responds	demonstrate	knowledge of the four cardinal points of the compass.
If you traveled the direction your head is pointing, where would you eventually come to? What might you see there?	extrapolates	visualize	eventual destination if northerly direction is persistently followed.
If you traveled the direcrion your legs are pointing, where would you eventually come to? What might you see there?"	extrapolates	visualize	eventual destination if southerly direction is persistently followed.

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Have the students sit up.

Say:
"Girls, go and touch the <u>north</u> wall.
Return.
Boys, go and touch the <u>south</u> wall.
Return.
Girls, go and touch the <u>east</u> wall.
Return.
Boys, go and touch the <u>west</u> wall.
Return.

Now, you are going to have to do some
fast thinking.
Nancy, go and stand in the <u>northwest</u>
corner.
Sam, go and stand in the <u>southeast</u> corner.
Ed, go and stand in the <u>northeast</u> corner.
Wendy, go and stand in the <u>southwest</u>
corner.

Very good, students. You are <u>applying</u>
what you know about directions to a new
situation."

3. Say:
"Now I am going to ask you to stretch
your minds a little further. People in
the center of the room, what direction
are <u>we</u> from the north wall? east wall?
south wall? west wall?
What direction are we from Nancy? Sam?
Ed? Wendy? How did you figure this
out? You are doing a good job of
<u>reasoning</u>!"

touches designated walls	reinforce through psychomotor activity	a concept of the cardinal points of the compass.
relates previously learned facts	identify	the <u>intermediate</u> points of the compass: north-west, northeast, southeast, south-west.
performs mental transformations	deduce	his/her own direction relative to given fixed points.

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(Have the children sit in four lines to
form a square in the center of the room.
The four edges of the square should be
parallel to the four walls of the
classroom.

Teach them to play a variation on
"Alliterative Add-a-Word" in Games
to Improve Your Child's English by
Abraham B. Hurwitz and Arthur Goddard.

The first person in the north line says,
"I went north and I saw n_____ n_____,"
filling in any adjective and noun pair
beginning with the letter n.

Play proceeds clockwise to the first
person in the east line, the first
person in the south line and the first
person in the west line.

Each says a sentence containing his/her
direction and an adjective and noun
beginning with the same letter as his/her
direction.

The game is cumulative. So when play
proceeds to the second person in each
line in turn, the second player repeats
the adjective/noun pair contributed by
the first player and adds a pair of
his/her own.

plays a
game

gain greater
fluency in

production of
alliterative
adjective-noun
pairs beginning
with N, E, S, or W
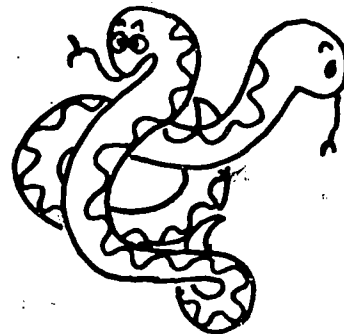
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Examples:

I went <u>north</u> and I saw _____.

I went <u>east</u> and I saw _____.

I went <u>south</u> and I saw _____.

I went <u>west</u> and I saw _____.

Stress <u>fluency</u>.

EVALUATION:

5. When the students have had ample
opportunity to become familiar with
the directions and their personal
orientation relative to the points
of the compass, administer the follow-
ing oral or written quiz:

(1) North is the opposite of _____.
(2) East is the opposite of _____.
(3) The _____ corner joins the south
wall and the west wall.
(4) The _____ corner joins the
north wall and the east wall.
(5) The west wall is between the _____
wall and the _____ wall.
(6) The south wall is between the _____
wall and the _____ wall.

When I am in the center of the room
I am...

(7) _____ of the north wall;
(8) _____ of the east wall;
(9) _____ of the northwest corner;
(10) _____ of the southwest corner.

(Responses will vary:)
...naughty nuisances
neat nephews, etc.
...endless elephants,
evil eagles, etc.

...sorrowful secretaries,
silly serpents, etc.

...wonderful weasels,
wild winters, etc.

completes   judge
test items

his/her mastery
of concepts of
personal spatial
orientation
relative to the
points of the
compass.

N

W —

Given the opportu...ity to work with
compasses and participate in a variety
of activities, the student will be able
to determine the cardinal and intermediate
directions and to determine their own
location relative to given fixed points.

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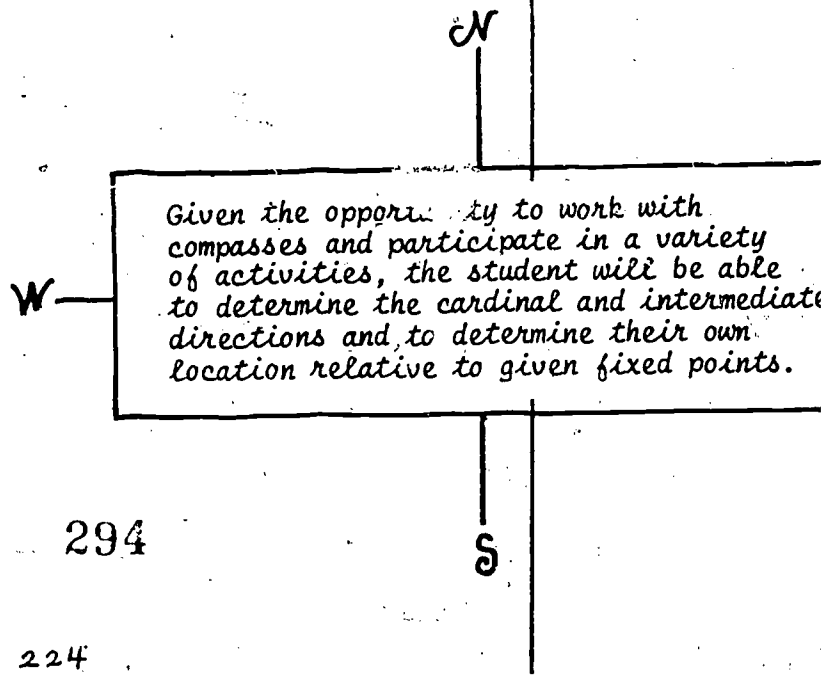
...over time, a continuing and steadfast focus on the positive in life, on our strengths, and on the strengths of others can help to restore in our students their personal energy, their feelings of power, their sense of worth so that they can see themselves as positive forces who can contribute to the task of building a better world.

> Robert C. Hawley
> Human Values in the Classroom

Caterpillar: ...and who are you?

Alice: I...I hardly know, Sir, just at present--at least I know who I was when I got up this morning, but I think I must have changed several times since then.

> Lewis Carroll
> Alice in Wonderland

No more fiendish punishment could be desired, were such a thing physically possible, than that one should be turned loose in society and remain absolutely unnoticed by all the members thereof.

> William James
> The Principles of Psychology

The Magic Window
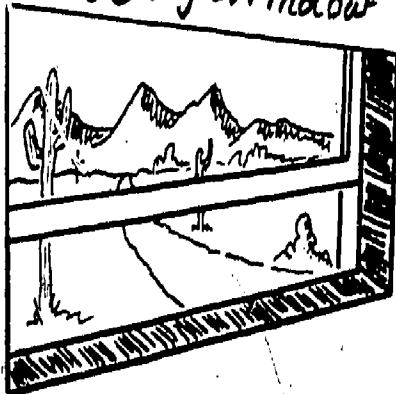
Developed by Susan Sager

GENERAL PERSPECTIVE

Clues for judging the location of objects in three-dimensional space - or their representation on two-dimensional plane surfaces are: (1) relative apparent size; (2) overlapping; (3) placement in the picture plane; and (4) relative intensity of color.

LEVEL _1 - 6_   TIME _2-4 45 min. periods._

		STUDENT	

ENTRY CONCEPTS:

When we look at scenes around us, or at pictures of such scenes, we are able to judge that some objects are relatively near to us, while others are relatively far away.

MATERIALS:

Standard optical illusions mounted on large cards; study prints, photographs, slides, view-master sets; chalkboard and chalk or chart paper and marker; materials for collage-making and/or painting.

TEACHER TASKS:

	STUDENT	
	ENABLING BEHAVIORS:	LEARNINGS:
	The student: / In order to:	

INTRODUCTION:

Say: "Today we are going to investigate some interesting things about seeing."

(Show the students a series of standard optical illusions displayed on large cards. Ask the appropriate question about each one: Which line is longer? etc.)

Subject each visual judgment to a reality check: Measure the lines, etc.

Teacher Tasks	The student:	In order to:	Learnings:
(introduction)	views optical illusions	perceive	apparent relation-ships of lines and shapes in common optical illusions.
(reality check)	measures lines, etc.	determine	how the reality of these figures differs from their appearance.

INTELLECTUAL EFFECTIVENESS

COGNITIVE:

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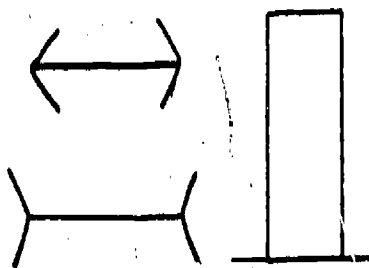
HE MAGIC WINDOW

n summarizing, ask: "Can we always be sure
hat what we apparently _see_ is what we _know_ to
e true? Why do things often _appear_ to be
ifferent than they actually _are_? How were
hese optical illusions able to fool us?"
iscuss.

ESSON DEVELOPMENT:
.   (The Knowledge/Comprehension activities
    for this unit consist of a wealth of
    opportunities for conscious _seeing_. It is
    fortunate if your schoolyard has an
    unobstructed view of a variety of objects
    in deep space - buildings, streets, trees,
    hills, mountain ranges, etc. But whether
    or not this is the case, seeing actual
    objects in _three-dimensional_ space must be
    supplemented by many experiences with
    seeing study prints, photographs, slides
    and other two-dimensional representations
    of objects in space. This is essential,
    because comprehension of the analogies
    used to describe the appearance of objects
    that are nearer or farther from the viewer
    depends on the ability to compare what
    is seen to a picture hanging vertically
    on a wall - the plane of vision or picture
    plane.)

    After an experience of intensive seeing
    out-of-doors, ask:
    (How do we know _these_ houses and trees are
    near to us, while _those_ houses and trees
    are farther away? What are the visual
    clues?"

hypothesizes	consider	why appearances differ from reality.
views many actual and represented scenes	acquire much visual experience regarding	the clues which help us determine how objects are located in space.
recalls visual impressions	verbalize	clues that lead him/her to recognize that some objects are _near_ and others are _far_.
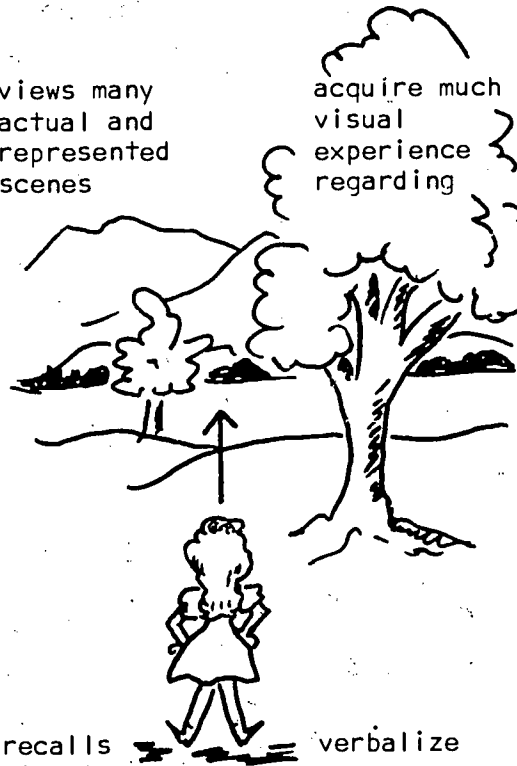
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(Elicit observations about apparent size, overlapping, placement in the plane of vision, and intensity of color.)

(After returning to the classroom, have the students help to systematize and chart the results of the investigation. Material in parentheses may be omitted for younger children.

organizes his/her observations	make	a chart presenting a list of visual clues to near/far

Visual Clues to Near/Far

(Linear Perspective)
Size -   larger/smaller,
Overlapping -   in front of/in back of
Placement -   lower/higher (below
                       horizon)
                 higher/lower (above
                       horizon)

(Aerial Perspective)
Color -   more intense/more neutral
                 less bluish/more bluish

ponders list of visual phenomena	discover	possible reasons for the visual clues to near/far

Discuss and analyze:

"Why do things which are farther away appear to be _____ (than) things which are nearer?"
....smaller...
....in back of...
...higher in the picture plane (sometimes).
....more neutral or bluish in color...

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(Depending on the maturity of the students, have them do, at different times, one or both of the following:

(1) Have the students make collages - using geometric cutouts or magazine picture cutouts - which give the illusion of objects in space through differences in size, overlapping, and placement.

(2) Have students paint pictures of three mountain ranges, one behind the other, representing depth through size, overlapping, and placement, as above - but primarily through differences in color intensity.)

VALUATION:

(Conduct a group critique of the artwork produced.)

Ask: "Which collages/paintings give an especially effective illusion in deep space? Why?"

engages in creative activities	synthesize and utilize	concepts about basic linear and aerial perspective.
appraises art projects	decide	which works most successfully to create the illusi of objects in three-dimensional space.

Given experience with much conscious viewing of objects in three-dimensional space and their two-dimensional representations, the student will be able to determine the visual clues that help him/her judge the location of objects in space, and develop the ability to represent these relationships verbally on a chart and visually on a sheet of paper.

Concept/Competency

LINEAR PERSPECTIVE

INCREDIBLE THE VANISHING POINT

Developed by: Susan Sager

In one-point perspective, horizontal lines which in reality are parallel
(1) _remain parallel_ when _parallel_ to the plane of vision;
(2) _appear to converge and vanish at one point on the horizon when perpendicular to the plane of vision._

LEVEL   3 - 6   TIME 2-4 45 min. periods

INTELLECTUAL EFFECTIVENESS	ENTRY CONCEPTS:	MATERIALS:
	When two otherwise identical objects are located at widely different distances from the viewer, the near object sometimes seems to overlap -and appears to be larger, lower/higher on the picture plane, and brighter in color than- the far object.	Yardsticks, sheet of rigid clear plastic, cardboard cutouts of geometric plane figures, including rectangles and trapezoids; chalkboard and chalk; two cardboard boxes and low table; drawing materials, including rulers; dittoed incomplete drawings in one-point perspective.

	TEACHER TASKS:	STUDENT	
		ENABLING BEHAVIORS: The student: In order to:	**LEARNINGS:**

COGNITIVE:

TEACHER TASKS	The student:	In order to:	LEARNINGS
INTRODUCTION: Review or introduce the terms vertical - horizontal - diagonal; perpendicular - parallel - converging; "magic window", picture plane, or plane of vision; rectangle - trapezoid.	listens and observes	learn or review	basic terms and concepts about lines and planes and their relationships in space
Have students demonstrate their meaning (1) with objects such as yardsticks, a sheet of rigid clear plastic, and cardboard cutouts; (2) with diagrams at the chalkboard.	manipulates objects and draws diagrams	demonstrate	comprehension of these basic meanings

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SSON DEVELOPMENT:
   (Arrange two cardboard boxes on a low table
   parallel to the edge of the table, which
   represents the plane of vision. Have
   students kneel at a point midway between
   the two boxes and sight toward the
   "horizon." Have them state in their own
   words what seems to happen. Discuss.)

observes
objects in
space

perceive and
describe

Visual Illusions:
1. All verticals
remain vertical.
2. Top and base
lines of walls
parallel to the
viewers plane of
vision remain hori·
zontal and paralle
and these walls re·
main rectangles.
3. Top and base
lines of walls per·
pendicular to the
viewer's plane of
vision appear to
converge toward a
point on the hori-
zon -- and these
walls appear to
become trapezoids.

   (Have students to outside, take an
   analogous position, standing, between
   two one-story building's, and sight
   toward the horizon. What happens?
   Have them mentally extend the roof
   and base lines of the perpendicular
   walls to the horizon. What happens?

makes
additional
observations

discover

the pattern of
consistency and
regularity in
these visual
phenomena.

   Have students squat down well below
   normal eye level and sight toward
   the horizon. What happens?

sights at,
below normal
eye level and
above

discover
that

the horizon is
synonymous with
eye level and
seems to sink or
rise according
to the position
of the viewer.

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Ask students to "put it all together" in their minds. What <u>generalizations</u> can be made as a result of these observations?).	organizes and relates, observations	apply generali- zations to	subsequent experiences in visual perception
(Have students attempt to explain: At normal eye level, why do roof lines of perpendicular walls seem to slant <u>down</u>, while base lines seem to slant <u>up</u>? Analyze and discuss.)	examines visual phenomena	explain	how or why these laws operate
(Depending on the maturity and interest of the students, have them engage in one or more of the following activities:			
(1) Give students dittoed drawings in one-point perspective with <u>no visible construction lines or points.</u> Have students lay rulers along roof lines and base lines of perpendicular walls and extend them to the horizon. What happens?	extends roof lines and base lines of perpendicular walls to horizon	make visible	construction line and vanishing point used in producing the drawing
(2) Give students dittoed drawings in one-point perspective with <u>no visible perpendicular walls</u> -- but with a vanishing point marked on the horizon. Utilizing only what is given, have students correctly supply the missing walls, including the vertical edges where the buildings terminate.	rules lines from top & bottom "inside" corners of front walls to vanish-ing point; lays in verticals where side walls terminate	supply	missing perpen-dicular walls
(3) Interested students may be encouraged to construct simple or complex one-point perspective drawings from scratch.)	creates "building-scapes"	utilize	understanding of the rules of one-point perspective

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(After extensive experience in observing
visual phenomena of one-point perspective,
and translating, interpreting and
analyzing these phenomena, have students
tell, diagram, or write what would seem to
happen under the following conditions:

You have an unobstructed view, stretching
away to the horizon, of:

1. a road or railroad tracks
2. rows of trees or power poles
3. rows of clouds or hot-air balloons

....which you view while standing:

    a. in a hole up to your eyes
    b. on the level ground
    c. on a mountain top.)
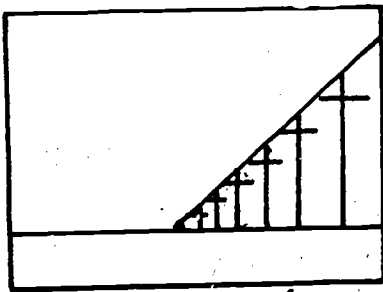
creates a   judge
mental picture
based on
verbal des-
criptions of
visual situations

transformations
that would occur
in these visual
illusions when
the eye level of
the viewer was
raised or lowered
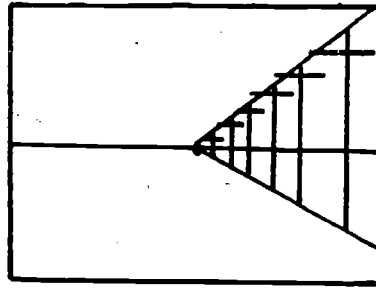
b. on level ground

c. on a mou
top

a. in a hole
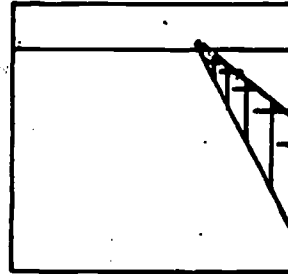
Given extensive guided experience in
viewing rectangular solids parallel
to his/her plane of vision, the student
will become aware of the importance of
eye level and plane of vision in deter-
mining the appearance of objects in
space, and will formulate and use the
rules of one-point perspective.

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MODEL FOR FIRST INCOMPLETE PERSPECTIVE DRAWING
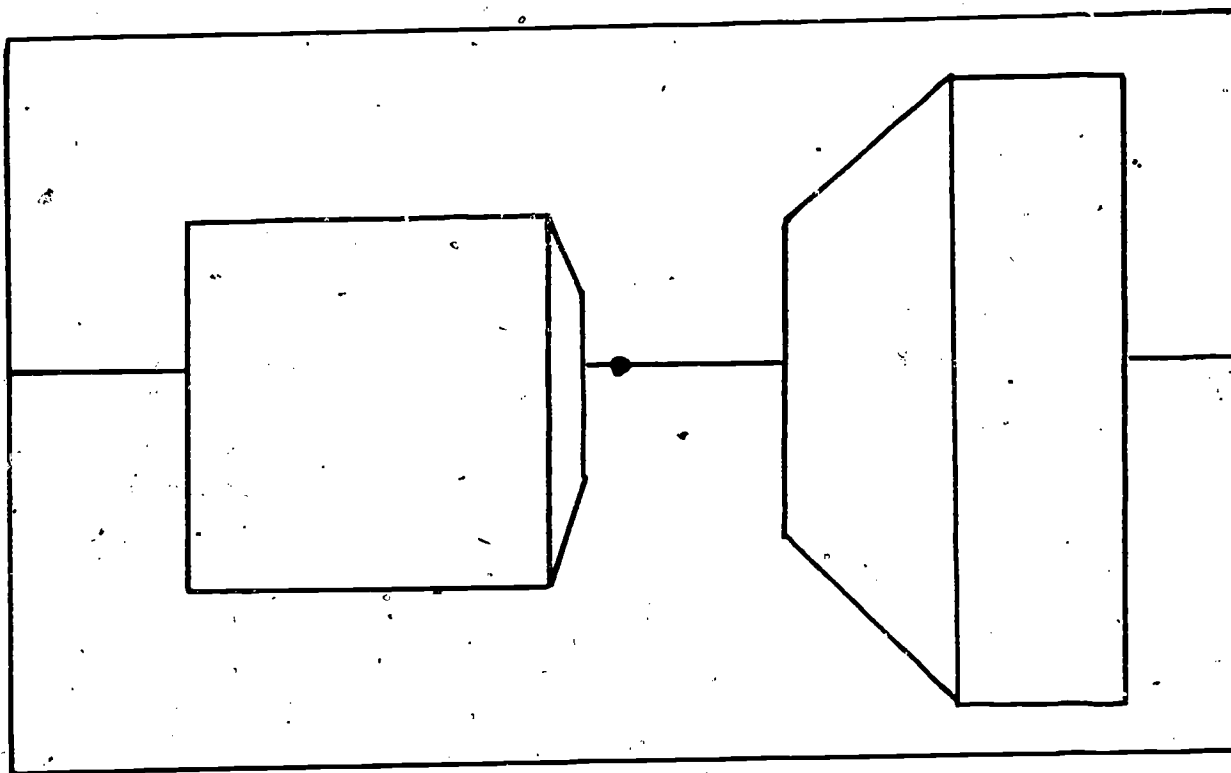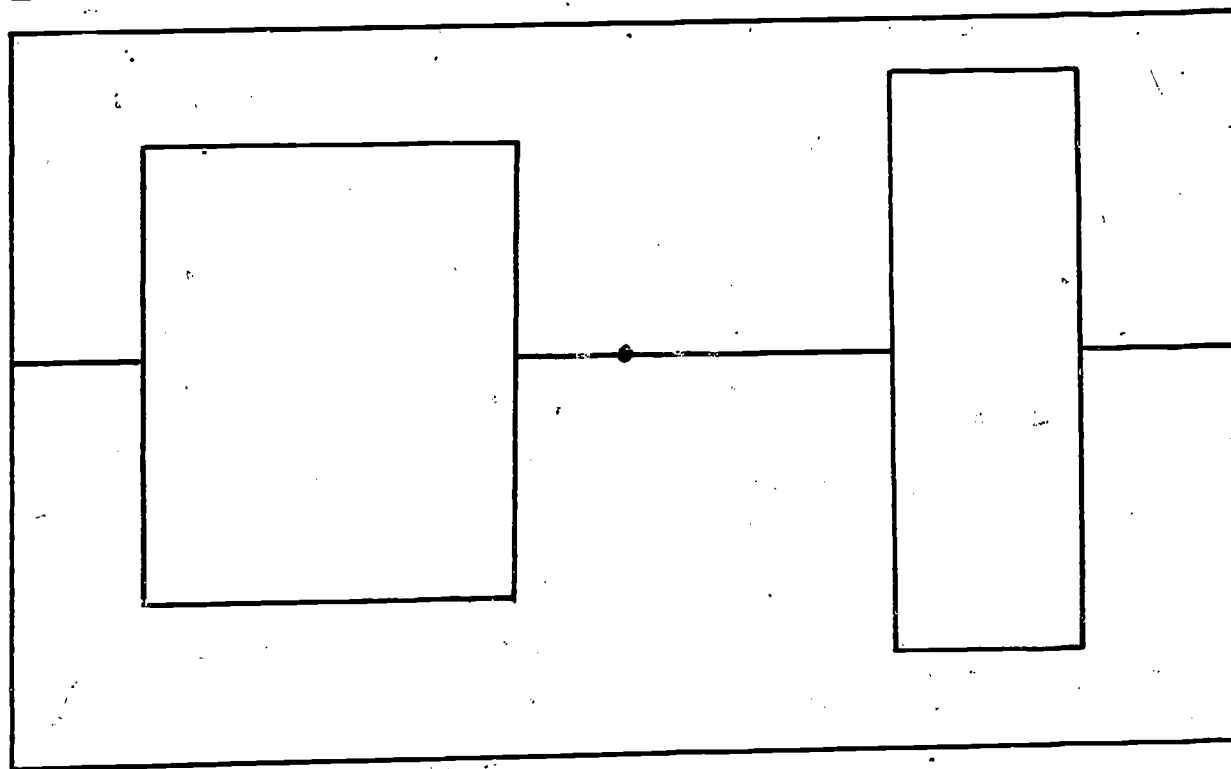
MODEL FOR SECOND INCOMPLETE PERSPECTIVE DRAWING

Concept/Competency

Vocabulary Elements:
OPPOSITE ACTION VERBS

Recognizing specific elements in words
leads to understanding the "basic"
meanings of many large groups of words.

Developed by Susan Sager   LEVEL 3 - 6   TIME 1 hour

INTELLECTUAL & EFFECTIVENESS

ENTRY CONCEPTS:

Many English words contain elements from
Latin and Greek.

MATERIALS:

Lists of words containing the bases
    puls-, pel - (push)
    tract- (pull)
Chalk, chalkboard
Pencils, paper

COGNITIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	
INTRODUCTION:			
Tell the students that many English words contain elements from Latin and Greek.	listens	review	word elements with which he is already familiar.

Introduce two new bases from Latin which are opposite action verbs:
 	
    puls-; pel- (push)
 	
    tract- (pull).
 	
List on chalkboard.
	listens and observes	recognize	the contrasting bases meaning push and pull.

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LESSON DEVELOPMENT:

. Ask the students to think of as many words as they can which contain these elements. List them on the board in two contrasting groups.

. Ask the students to pantomime the meanings of selected contrasting action words.

. Teach the game "Derivation." Explain that many words can be <u>derived</u> from a single base word through the addition of prefixes and suffixes. Invite pairs of students to the board who wish to challenge each other. Call out a base word, and see who can write the most derived words in a given timed period. Write the words in <u>columns</u>.

Example: <u>pulse</u>

impulse	repulse
impulsive	repulsive
impulsively	repulsively

etc.

---

recalls   list

(impulse   tractor
impel   traction
expell   retract
repulsive   subtract)

moves   differentiate

plays a   produce
game

---

words that contal <u>puls- pel-</u> and <u>tract</u>.

the meanings of words containing contrasting elements through psychomotor activity.

as many words as possible through the process of <u>derivation</u>.

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Ask the students to compose sentences of two independent clauses connected by /but/ to show

(1) contrasts in the meaning of two base elements, and

(2) contrasts in meaning that can result from using different prefixes with one base.

composes sentences

interpret

the meanings of

Examples:
(1) I found the lady attractive
/but/
she found me repulsive!

(2) The invaders propelled themselves toward the castle gate with a battering ram,
/but/
the defenders repelled them by pouring boiling oil on them.

The emphasis here is on playing with the humorous possibilities of the words being studied, and on the enjoyment of language.

'ALUATION:

Instruct students to fill the blanks of incomplete sentences with words, containing studied elements, which are the most appropriate to the meaning of the sentences. They should be prepared to justify their choices.

considers alternatives

judge

the words most appropriate to the meaning of given sentences.

appraises

weigh

the value of the just-concluded lesson on Latin elements in English words.

Given an opportunity to recognize, recall and use words containing the base elements puls-, pel-, and tract-, the student will demonstrate an understanding of the basic meanings and uses of two contrasting groups of words.

SILLY SENTENCES

FUNCTIONAL GRAMMAR

Grammar involves parts of speech
with different _forms_ and _functions_
and the order or sequence in which
words are arranged. It is the basic
framework of the language on which
we construct our meanings.

Developed by: Susan Sager   LEVEL 3 - 6   TIME 4 30-min. periods

	ENTRY CONCEPTS:	MATERIALS:
INTELLECTUAL EFFECTIVENESS	--experience in working with parts of speech --ability to identify adjectives, nouns, verbs, and adverbs	Duplicated word lists for analysis exercise; Chalkboard, chalk, writing paper, pencils; Dictionaries; Materials for drawing; Background sources on grammar for the teacher

	TEACHER TASKS:	STUDENT	
		ENABLING BEHAVIORS:	**LEARNINGS:**
		The student: In order to:	
COGNITIVE:	**INTRODUCTION:** Say: "You may have heard that 'grammar is a lot of nonsense'--especially from someone who has had an unhappy experience in an English class.	listens become aware that	a commonly held attitude toward grammar states that "grammar is a lot of nonsense."
	The statement is quite true in a sense. Absolute nonsense can be written in absolutely correct grammatical form."	listens assimilate the idea that	a statement can be nonsensical in _meaning_ while being quite correct in grammatical _form._

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fter writing them on the chalkboard, say:
Witness the first four lines of 'The
abberwocky' from <u>Alice Through the Looking</u>
<u>lass</u>:

    'Twas brillig, and the slithy toves
    Did gyre and gimble in the wabe.
    All mimsy were the borogroves,
    And the mome raths outgrabe.'

hese lines are perfectly 'grammatical'...
ut does anyone really know what they
mean'?"
Di.scuss.)

ESSON DEVELOPMENT:

. Say, "Such stuff may be nonsense; but
  without the 'nonsense' called grammar,
  there could be no <u>sensible</u> sentences,
  either.

  <u>Grammar is the basic framework of the</u>
  <u>language on which we construct our</u>
  <u>meanings</u>.

  Put certain parts of speech--nouns,
  verbs, and so on--in a certain order...
  and presto! You have a grammatical
  sentence--which may also be nonsense.

reads and listens	become familiar with	the opening four lines of the famous nonsense poem,"The Jabberwocky."
responds and discusses	develop	the idea of structure versus content--grammar versus meaning.
listens	realize that	without grammar, neither nonsense sentences nor sensible sentence; would be possible.
listens	grasp	a definition of the term <u>grammar</u>.
listens	become aware that	grammar involves parts of speech with different <u>forms</u> and <u>functions</u>--and the <u>order</u> or sequence in which the words are arranged.

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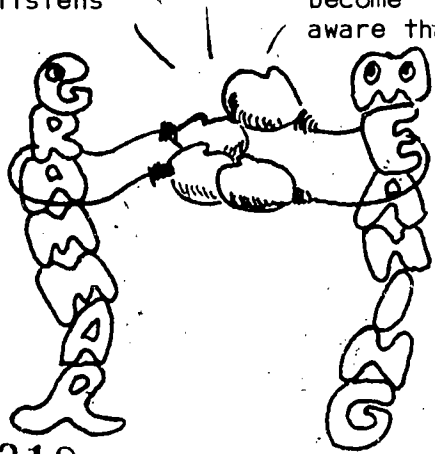
lly Sentences

After writing the seven headings below across the chalkboard, say: "Here's one possible sentence <u>pattern</u>. Can you fill it in with <u>words</u> to make a sentence?"

listens, observes, and contributes words	determine that

a given grammatical <u>pattern</u> or sequence can be filled in with <u>words</u> to make a sentence.

<u>Adj.</u> <u>Adj.</u>	<u>N</u>	<u>V</u>	<u>Adj.</u>	<u>N</u>	<u>Adv.</u>

Example:

Big green monsters devoured beautiful ladies rapidly.

(Responses will vary.)

(Have a different series of words suggested that will fill in these same "slots." Repeat the process until students realize that the grammatical <u>pattern</u> remains identical although different <u>words</u> are substituted.)

suggests alternate series of words	demonstrate that

when a different series of <u>words</u> is slotted into the same grammatical <u>pattern</u>, the <u>pattern remains identical</u>.

(To reinforce and apply what was taught in the first activity, have various students suggest <u>alternate</u> grammatical patterns, and have other students supply different series of words to "plug in" to them.)

suggests alternate grammatical <u>patterns</u>	demonstrate that

a variety of different sentence patterns are possible.

(Give the students duplicated lists of the 40 alphabetized words shown on the next page. Explain that this list can be broke down into four separate lists (10 word each) of <u>Adjectives</u>, <u>Nouns</u>, <u>Verbs</u>, and <u>Adverbs</u>.

listens and examines word lists	determine that

the list of 40 words can be broken down into four separate lists (10 words each) of <u>adjective</u> nouns, verbs, and adverbs.

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Have the students fold sheets of writing paper in halves twice, vertically, to produce four columns. ·Have them label the columns, as shown.on the previous page, with the names of four underlined parts of speech.

Have the students go through the list, separating out words of the four different parts of speech and listing them in their respective columns.

There are four rules to follow:

(1) Begin each <u>adjective</u> with a capital letter.

(2) Add -<u>s</u> to each <u>noun</u>.

(3) Add -<u>ed</u> to each <u>verb</u>.

(4) Put a period after each <u>adverb</u>. (All regular adverbs end in -<u>ly</u>.)

When we finish, what will we have?

SILLY SENTENCES!)
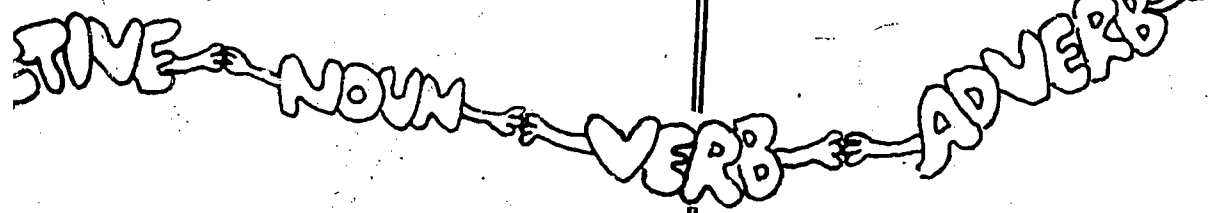
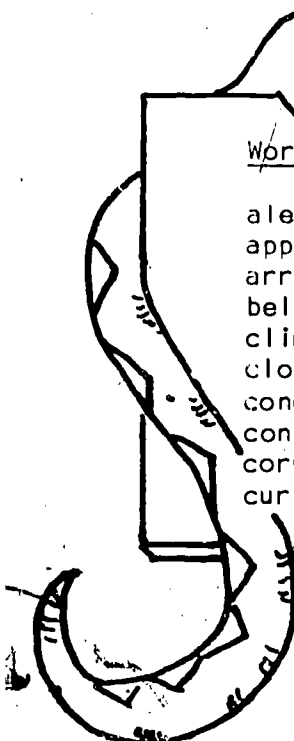|		
folds paper and labels columns	provide	four columns, with the headings <u>Adjectives</u>, <u>Nouns</u>, <u>Verbs</u>, and <u>Adverbs</u>.
sorts words alphabetically	demonstrate	the ability to classify words into groups according to their parts of speech.
changes the <u>forms</u> of nouns and verbs	assure that	grammatical sentences are produced.
begins sentences with capitals and ends them with periods	assure that	correctly marked sentences are produced.
listens	determine that	this activity will produce Silly Sentences-- four-word sentences grammatically correct in <u>form</u> but nonsensical and funny in content.

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Word List for Silly Sentences:

alertly	dance	incubator	pajamas
appetite	directly	intangible	posterior
arrogant	eccentric	kangaroo	pretend
bellow	educator	leap	pyramid
climb	emotion	loftily	reverberate
cloudy	figuratively	lurk	ridiculous
congregation	firmly	meaninglessly	rotate
continually	gather	melancholy	sacred
corpulent	generously	negotiate	stupendous
curiously	horrible	nervously	weed

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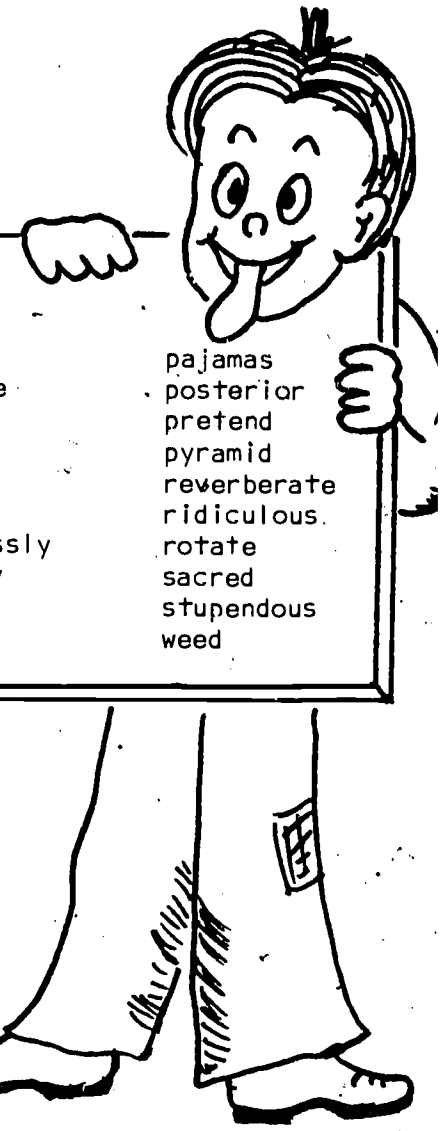
Illy Senterices

(If the students sort the words out correctly in alphabetical order, they will all have the same Silly Sentences. But any grammatically correct adjective-noun-verb-adverb sequence is acceptable.

Investigates different combinations of words

discover that

any combination of words--in th correct forms a the correct adjective-noun-verb-adverb sequence--will produce a grammatically correct Silly Sentence.

. Have students select some fancy vocabulary with which to create their own Silly Sentences. Some of the more ingeniously ridiculous may be illustrated with appropriate caricatures and displayed on the classroom wall.

selects fancy vocabulary

create and illustrate his/her own

original Silly Sentences.

VALUATION:

. (Lead students to express their reactions to the lesson.

Ask them to describe their former feelings toward grammar.

Have their attitudes changed since the lesson? How?

Discuss.)

listens, responds, discusses

evaluate his/her

feelings and attitudes toward "grammar before and afte the lesson on Silly Sentences

Given instruction in how to produce Silly Sentences--basic adjective-noun-verb-adverb sequences--the student will demonstrate an awareness of the basic nature and function of grammar.

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Lord & Lady

Developed by: Susan Sager

Concept/Competency

INSTRUCTION IN USING BASIC PROCESSES

The technique of close reading-- using the basic processes of acquisition; translation, interpretation, and extrapolation--helps us to get at the meaning of difficult, but great, literature.

LEVEL 5 - 6 +   TIME 3 45-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:	MATERIALS:
--Familiarity with Macbeth in story form	Duplicated copies of Macbeth's and Lady Macbeth's speeches;
--Awareness of figurative language	Taped recordings of the speeches read by actors;
--Previous experience in consciously using four basic thinking processes, separately, in short exercises	Annotated edition of the complete text of The Tragedy of Macbeth; Stories from Shakespeare by Marchette Chute

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COGNITIVE:

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: In order to:	LEARNINGS:

TEACHER TASKS:	The student:	In order to:	LEARNINGS:
INTRODUCTION: Say: "Many people consider Shakespeare very heavy going. They try to read one of his plays without adequate preparation, and they soon give up in discouragement. To make a comparison: If you're going to tackle Mount Everest, you've got to have the proper equipment--and some solid experience in climbing smaller mountains!	listens to an analogy	become aware that	tackling Shakespeare successfully requires the right skills and background experiences.
Today we're going to focus on a technique called close reading which uses four basic thinking processes: acquisition, translation, interpretation, and extrapolation."	listens and observes ✓	obtain an overview of	a lesson on close reading utilizing the processes of: acquisition translation interpretation extrapolation.

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Throughout the lesson, write the underlined
ords on the board for visual emphasis.)

This technique will help you to understand
rinted material that you formerly thought
as completely out of reach. Keep that image
f Mount Everest in mind. Shapespeare is
ull of images. And an awareness of these
omparisons he uses so vividly can greatly
ncrease our understanding and enjoyment of
is work."

ESSON DEVELOPMENT:

. Say: "You are familiar with the story of
   Macbeth. Today we'll examine two speeches
   from this drama, one by Lady Macbeth and
   one by her lord.

   These particular speeches are not part of
   a dialogue between two or more characters
   in the play. They are called soliloquies,
   from the Latin elements -sol(i)- (alone)
   and -loqu- (speak). The character speaks
   while either entirely alone on the stage
   or while standing apart from the other
   characters.

   The soliloquy is an interior monologue,
   representing what is going on in the
   person's mind. It may take the form of
   an invocation--from in- plus -voc- (call)
   --in which the character calls on someone
   or something to enlist their aid.
   Or it may take the form of a debate,
   in which the character considers the
   points for and against a particular
   course of action.

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listens	learn that	awareness of the Images Shakespeare uses can increase our understanding and enjoyment of his work.
listens	determine	procedures to be used for the first activity-- acquistion (data level).
listens and observes	acquire knowledge of	the meaning of the terms: dialogue soliloquy interior monologue invocation debate.

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First, Lady Macbeth. She has just received a letter from her husband. It tells of his strange meeting with three witches, who promised that he would be king of Scotland. Her mind leaps, as his has done, to the golden crown that lies waiting...and to the final step that lies between them and the throne: disposal of the current occupant.

After a messenger arrives with the news that King Duncan is to visit Macbeth's castle that very night, Lady Macbeth, in a magnificent, blood-chilling speech, calls on the powers of darkness to harden her heart and help her to be cruel."

(Distribute copies of Lady Macbeth's speech.)

"Follow Lady Macbeth's speech as I play a recording of it. You may not understand every word--but you cannot help sensing an atmosphere of appalling evil."

(Play a tape of Lady Macbeth's speech. Afterwards, allow students to comment on it.)

"Now, Macbeth. After his arrival home, his wife hints at the opportunity that has come within their very walls, but Macbeth shrinks from the idea of murder. Later, restless and agitated, he leaves the banquet hall where the king is being entertained, and struggles with himself and with the thought of assassination."

listens	acquire	background information necessary for understanding Lady Macbeth's soliloquy.
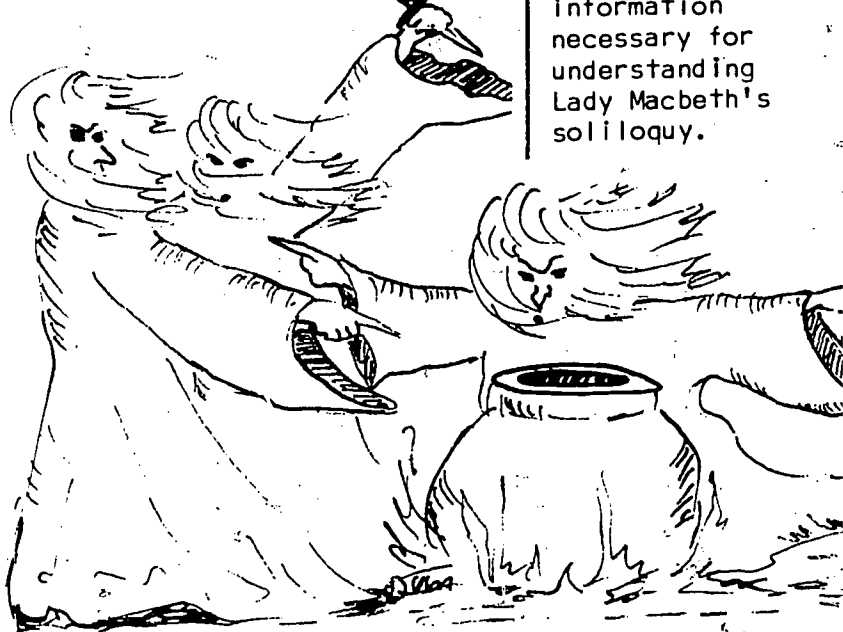
listens and reads	become familiar with	Lady Macbeth's soliloquy on tape and in print.
responds and discusses	increase his/her	familiarity with the speech.
listens	acquire	background information necessary for understanding Macbeth's soliloquy.

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(Distribute copies of Macbeth's speech.)

"Again, although you will not understand every word, you will sense Macbeth's agony of uncertainty and the revulsion he feels."

(Play a tape of Macbeth's speech. After-wards, allow students to express their reactions to it.)

Say: "Shakespeare wrote poetry--and poetry communicates to us mostly through our feelings. It is often difficult or impossible to assign a literal meaning to a passage of poetry, and usually unnecessary as well. But when the poetry is part of a drama that tells a story, it is useful to know how to determine its literal meaning.

Putting a communication into a parallel form--for example, changing it from figurative language into a statement of literal meaning--is called translation.

Today we will translate each sentence of our lord's and lady's soliloquies, to see if we can get at their literal meaning.

First, Lady Macbeth."

(Read the first sentence to the students. Then reread it, clause by clause, and have the students paraphrase it orally in everyday, literal language):

|		
listens and reads	become familiar with	Macbeth's soliloquy on tape and in print.
responds and discusses	increase his/her	familiarity with the speech.
listens	acquire	background for the second activity-- translation (concept level).
listens	learn	the definition of the process of translation.
listens	determine	procedures to be used during the activity.
listens and responds	demonstrate	the ability to paraphrase a sentence from Shakespeare in everyday, literal language.

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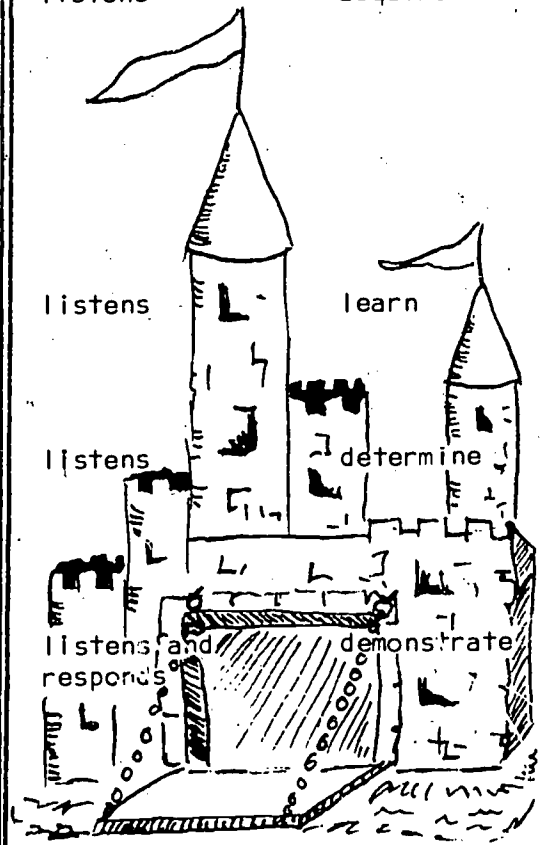
Come, you spirits
That tend on mortal thoughts,/
    unsex me here,/
And fill me
    from the crown to the toe, topfull
Of direst cruelty!

(Continue in the same way with each
sentence in the speech, using it as
an exercise in oral translation.)

"Now, Macbeth.

Let's translate the first two
sentences orally, using the same
procedure we used with Lady
Macbeth's speech."

When this has been done, say: "Macbeth
goes on to list five reasons against
doing the deed. He is able to come up
with only one reason for doing it, and
that is an inadequate one.

In this passage, Shakespeare uses
figurative language heavily in a series
of vivid and extravagant images.

    NOTE:

(Responses will vary:)

        Come, you spirits
That influence men's minds,/
    take away my feminine
    gentleness and compassion,/
And   fill me
    from   head to toe
With the most terrible cruelty!

repeats   reinforce
the
process

translates   reinforce
the first two
sentences

listens   learn that

listens   determine
                     that

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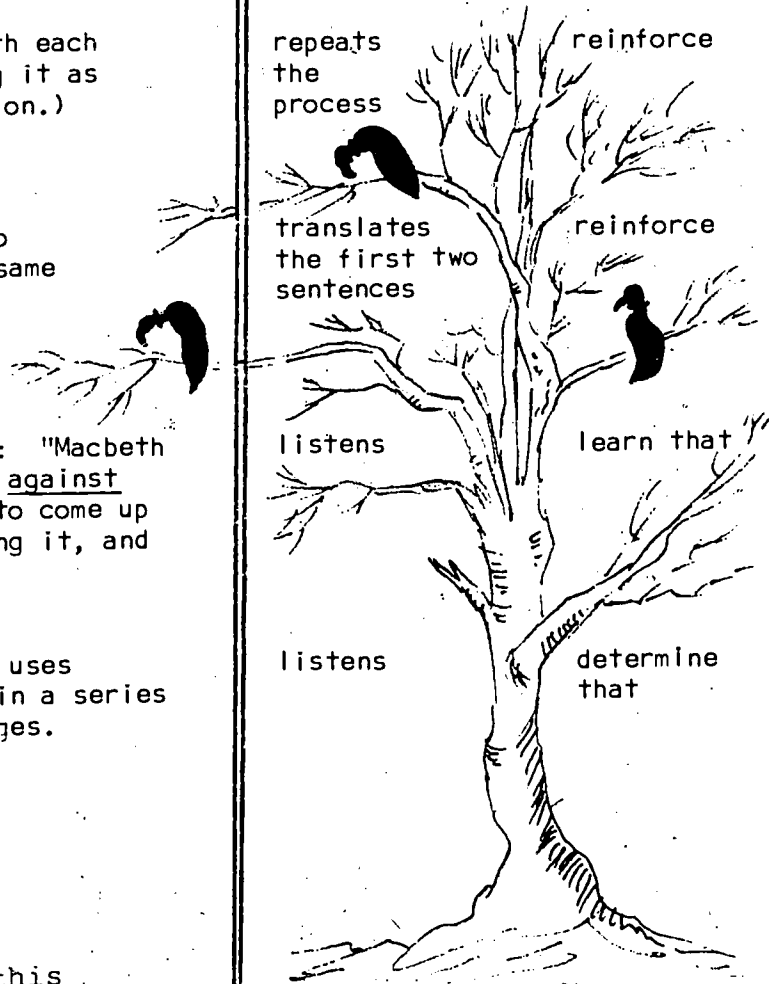
skill in trans-
lation.

the ability to
translate
Shakespeare's
poetry into
modern-day
prose.

Macbeth presents
five reasons
against
assassination and
only one reason
for it.

this passage
consists of
reasons for and
against assassin-
ation imbedded in
a complex back-
ground of
figurative langua

Say: "You have done a good job of translating these speeches of Lady Macbeth and Macbeth.			
Now, we will reexamine both speeches in their entirety. We will see how the parts of each speech relate to the speech as a whole; and how the two speeches relate to each other. This process is called _interpretation_.	listens	determine	procedures to be used during the third activity-- _interpretation_ (generalization level).
First, Lady Macbeth. What does her entire concern seem to be, as expressed in this speech? How does each part of the speech support your conclusion?" (Discuss.)	listens, responds, discusses	clarify his/her	understanding of Lady Macbeth's character and motivation.
"Now, Macbeth. What does Macbeth's major concern seem to be? How does it differ from his wife's? How does each part of the speech support your conclusion?" (Discuss.)	listens, responds, discusses	clarify his/her	understanding of Macbeth's character and motivation.
"Compare Lady Macbeth's character with that of her husband. Who seems to be the most hard hearted? Which character is the most complex? What do the speeches reveal about the personality of each?" (Discuss.)	compares Lady Macbeth and Macbeth	demonstrate	ability to distinguish important differences in characte between Macbeth and Lady Macbeth.

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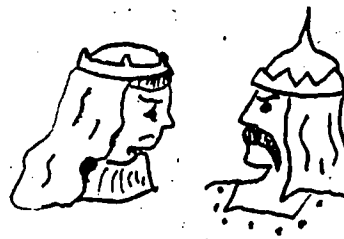
Say: "Now let's go beyond what we can learn from directly examining these two speeches, and speculate on what might happen to Lady Macbeth and Macbeth as they embark on their bloody course of action.	listens and observes	determine	procedures to be used during the fourth activity-- extrapolation (implication level
Projecting into the future and imagining what might happen is called extrapolation.			
The tendency established in Lady Macbeth's character is her concern with the practical problems of how the job is to be done.	listens and observes	summarize	important basic tendencies in the characters of Lady Macbeth and Macbet
The tendency established in Macbeth's character is his concern with the moral implications of the act.			
Will the established tendencies continue and become ever more apparent? Or is there a possibility that each character might be changed by the action and take on quite different tendencies?	listens and responds	speculate	whether the established tendencies will continue or whether they will be changed by the actions engaged in.
Will Lady Macbeth continue to be practical and hard hearted? Or will she become haunted by moral considerations?" (Discuss.)	listens, responds, and discusses	judge	whether or not Lady Macbeth will change.

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"Will Macbeth continue to be plagued by a guilty conscience? Or will he become concerned with the practical problems of how to carry out acts and conceal guilt, growing ever more cruel and hard hearted?"
(Discuss.)

"Supposing that there is such a role reversal as this in the characters of the lady and her lord, at what point will it start to take place?"

(Allow the students to speculate, but leave the discussion open ended. Their knowledge of Macbeth is limited, and the purpose here is to give them conscious experience with the process of extrapolation, not to reach any definite conclusion.)

VALUATION:

The students may evaluate the accuracy of their close reading in a number of ways. Those who wish to pursue the matter of character development may want to read the lay, complete or in part.)

deally, this lesson should be given in conjunction with the opportunity to attend a live production of the play; view a screening of the 1948 Orson Welles film; or to watch the PBS Humanities in Drama version, first telecast in 1975 and since repeated. In this case, ask the students to watch the development of both characters and be on the lookout for any significant turning points.

listens, responds, and discusses	judge	whether or not Macbeth will change.
supposes	speculate	at what point a role reversal might take place.
reads the play	evaluate	the degree of accuracy achieved during the close reading of passages from the play.
attends a live production, screening, or telecast of Macbeth	acquire and enrich	his/her understanding of the entire drama.

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A passage in III.ii. 1-56 reveals such a turning point. Macbeth has just plotted the deaths of Banquo and Fleance, but has not yet openly revealed his plan to his wife.

Sensing something, she uneasily asks, "What's to be done?" He cynically replies, "Be innocent of the knowledge, dearest chuck, till thou applaud the deed."

In the television drama, the camera moves in for a closeup of Lady Macbeth's face: dawning comprehension of her husband's intention is followed by an expression of growing horror and dread.)

closely watches a key scene	consider	how action modifies character.
listens to key dialogue	judge	how dialogue reveals character.
observes body language	appreciate	how non-verbal communication underscores dialogue and adds another dimension of meaning.

Given instruction in close reading--using the basic processes of acquisition, translation, interpretation, and extrapolation--the student will demonstrate the ability to get at the meaning of two famous soliloquies in The Tragedy of Macbeth.
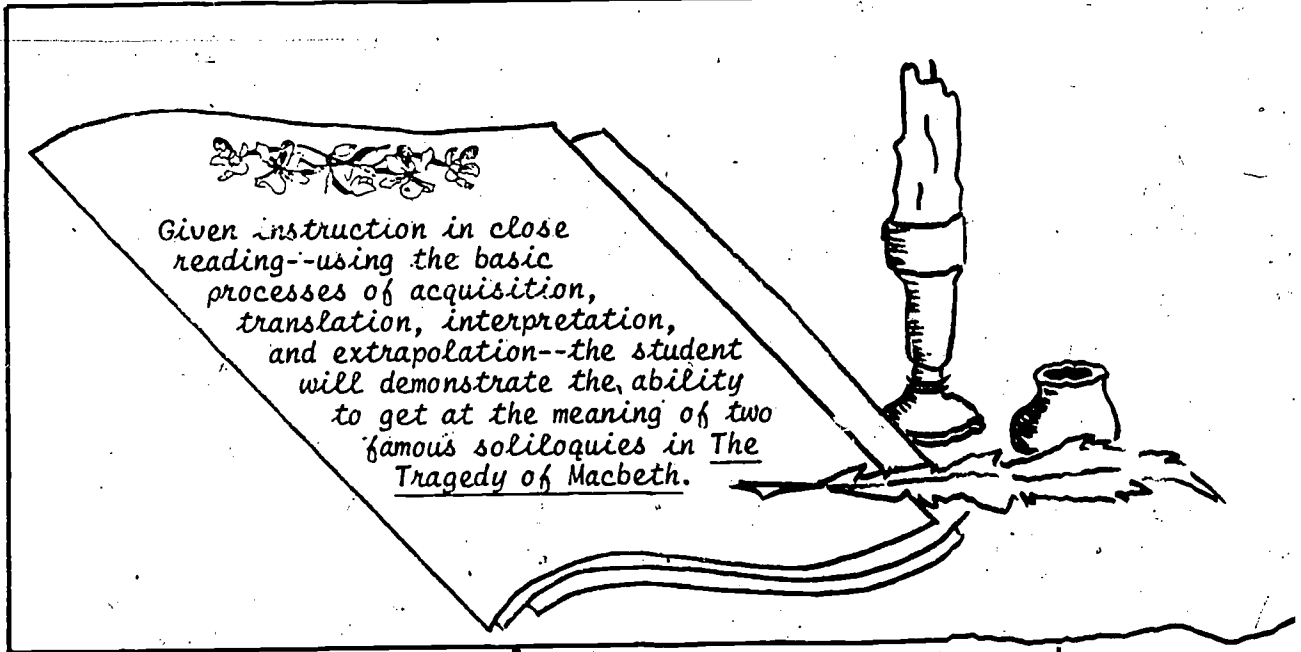
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41                Come, you spirits
42    That tend on mortal thoughts, unsex me here,
43    And fill me, from the crown to the toe, topfull
44    of direst cruelty!  Make thick my blood,
45    Stop up the access and passage to remorse,
46    That no compunctious visitings of nature
47    Shake my fell purpose, nor keep peace between
48    The effect and it!  Come to my woman's breasts,
49    And take my milk for gall, you murdering ministers,
50    Wherever in your sightless substances
51    You wait on nature's mischief!  Come, thick night,
52    And pall thee in the dunnest smoke of Hell,
53    That my keen knife see not the wound it makes,
54    Nor Heaven peep through the blanket of the dark
55    To cry "Hold, hold!"
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                              -The Tragedy of Macbeth
                               I. v. 41-55.

GLOSSARY:


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45    remorse. - pity
46    compunctious... nature - natural feelings of pity
46    compunctious - remorseful
48    The ... it - that is, between pity and the effecting of my dreadful purpose
49    murdering ministers - spirits of murder
50    sightless - unseen (invisible)
52    pall-cover, as with a pall
52    dunnest - darkest
54    Nor ... dark - nor Heaven peer through the darkness which covers, as
      with a blanket
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MACBETH

1 If it were done when 'tis done, then 'twere well
2 It were done quickly. If the assassination
3 Could trammel up the consequence, and catch,
4 With his surcease, success, that but this blow
5 Might be the be-all and the end-all here,
6 But here, upon this bank and shoal of time,
7 We'd jump the life to come. But in these cases
8 We still have judgment here, that we but teach
9 Bloody instructions, which being taught return
10 To plague the inventor. This even-handed justice
11 Commends the ingredients of our poisoned chalice
12 To our own lips. He's here in double trust.
13 First, as I am his kinsman and his subject,
14 Strong both against the deed. Then, as his host,
15 Who should against his murderer shut the door,
16 Not bear the knife myself. Besides, this Duncan
17 Hath borne his faculties so meek, hath been
18 So clear in his great office, that his virtues
19 Will plead like angels trumpet-tongued against
20 The deep damnation of his taking off.
21 And pity, like a naked newborn babe,
22 Striding the blast, or Heaven's cherubin horsed
23 Upon the sightless couriers of the air,
24 Shall blow the horrid deed in every eye,
25 That tears shall drown the wind. I have no spur
26 To prick the sides of my intent, but only
27 Vaulting ambition, which o'erleaps itself
28 and falls on the other.

— The Tragedy of Macbeth
I. vii. 1 - 28.

GLOSSARY:

2-4 If ... success- If only murder could have no aftereffects but be
                      final and successful at Duncan's death (surcease)
3   trammel - to entangle in a net
6   But - even
7   jump - risk
11   chalice - cup
17   faculties - powers
18   clear - innocent
21   naked ... babe - an object which moves the hardest-hearted to pity
23   sightless couriers - unseen messengers
28   other - other side

See if you can hack your way through this jungle undergrowth or metaphor, and list the reasons in plain, unadorned language.	lists demonstrate reasons	the ability to separate main ideas from the decorative details surrounding them.
	(Responses will vary.)	

Contra:	Against
(Lines 6 - 7)	1. To gain a temporary advantage in this life, we would commit a sin that would damn our souls for all eternity.
(Lines 7 - 12)	2. When we do evil to others, they retaliate by doing evil to us in return.
(Lines 12 - 14)	3. A king's relatives and subjects should be loyal to him.
(Lines 14 - 16)	4. A host should do everything he can to promote the safety of his guests.
(Lines 16 - 25)	5. The well-beloved Duncan has used his power so wisely and been such a good man as king that a tremendous burst of outrage would result if he were murdered.

Pro:	For:
(Lines 25 - 28)	1. I have only ambition to motivate me, and ambition can reach too high, leading to a fall.

Concept/Competency

INSTRUCTION IN USING BASIC PROCESSES

The higher-level thinking processes-- application, analysis, synthesis, and evaluation--can help us to illuminate the deeper meaning and significance of great works of literature.

LEVEL 5 - 6 +   TIME 3 45-min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
--Satisfactory completion of the companion lesson, "Lord and Lady"
--Experience in consciously using the higher-level thinking processes in appropriate exercises

MATERIALS:
Duplicated copies of Macbeth's soliloquy;
Taped recording of an actor's interpretation of the speech;
Chalkboard, chalk, writing paper, pencils;
Background materials on Macbeth for the teacher

COGNITIVE: INTELLECTUAL

TEACHER TASKS:
(NOTE: An effort has been made to include some of the concepts that have been stressed in group process--thus using humanities to help bridge and integrate affective and cognitive.)

STUDENT		
ENABLING BEHAVIORS:		**LEARNINGS:**
The student:	In order to:	

INTRODUCTION:

Say: "We first met Macbeth and Lady Macbeth early in the drama, at the point where they were making certain decisions.	listens	recall and review	an earlier lesson dealing with Macbeth.
We developed close reading skills utilizing the basic thinking processes: acquisition, of knowledge, translation, interpretation and extrapolation.	listens	recall	the names of the basic thinking processes-- acquisition, translation, interpretation and extrapolation.

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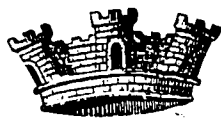|			
These processes enabled us to get at the basic meaning of two speeches by Macbeth and Lady Macbeth in which one mentally debated the advisability of killing King Duncan while the other invoked supernatural aid to help accomplish the act.	listens.	remember that	the basic thinking processes can help us to get at the basic meaning of materials we are close reading.
Today we will use the higher-level thinking processes--application, analysis, synthesis, and evaluation--in dealing with a speech near the end of the drama."	listens	determine that	the higher level thinking processes application, analysis, synthes and evaluation-- will be stressed this lesson.

(NOTE: It is assumed that during the course of the lesson, the teacher will clarify the meaning of any underlined terms or other terms and statements that may present obstacles for the students.)

LESSON DEVELOPMENT:

1. Say: "I will summarize the action of the plot up to the point where Macbeth delivers the speech that we are going to examine. Each time I tell of a killing, see if you can identify the motive for the killing in just one or two words.	listens	learn that he/she will hear	an outline of the plot with a catalogue of the killings that hav taken place.
	responds	identify	the motive for each killing.
Macbeth has killed King Duncan, but the killing hasn't stopped there. He has also killed the king's two guards (on whom he blamed the king's murder) in pretended outrage at their 'evil deed.' The king's sons flee, rightly fearing for their lives, and Macbeth, next in line to the throne, is crowned king.	(ambition) (concealment)		King Duncan the two guards

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at, even having attained his goal,
acbeth does not rest secure. He is
isturbed by Banquo's probable suspicions
nd by the witches' prediction that
anquo's descendents will be kings,
hile none of his own will inherit the
rown. So he hires murderers to
ssassinate Banquo and his son,
leance. Banquo is killed, but
leance escapes.

acbeth consults the three witches
gain, who produce three apparitions
hat (1) tell him to beware Macduff,
nother nobleman; (2) assure him that
e will never be harmed by anyone born
f a woman; and (3) claim that he will
ot be conquered until Birnam Wood
omes to Dunsinane Hill, the seat of
is castle.

acbeth decides that Macduff, too,
ust be killed--but learns that Macduff
as gone to England to seek help from
he dead king's elder son. In
etaliation, Macbeth has Macduff's
ife and children killed, and goes
ut to gather an army to resist the
oming onslaught by his enemies.

leanwhile, Lady Macbeth is endlessly
eliving all the killings in her mind.
he restlessly walks and talks in her
leep, and finally she kills herself.

hen Macbeth is brought word of her
eath, the <u>futility</u> of all their plotting,
ll the killing, even, seemingly, of
uman life itself, comes home to him.

(fear, jealousy)

(revenge, rage)

(remorse, despair)

listens   become
                       aware of

Banquo

Macduff's wife
and children

Lady Macbeth--
suicide.

the emotional
atmosphere of the
moment in which
Macbeth speaks
his soliloquy.

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is, then, is where matters stand when ꞓbeth speaks one of the most famous l/iloquies in all of dramatic literature."			
istribute copies of the speech. As udents follow on their copies, play a ped recording of an actor's interpretion of the speech.)	listens and reads	become acquainted with	Macbeth's soliloquy.

ıacbeth.

```
 9  Tomorrow, and tomorrow, and tomorrow
:0  Creeps in this petty pace from day to day,
:1  To the last syllable of recorded time;
:2  And all our yesterdays have lighted fools
:3  The way to dusty death.  Out, out, brief candle!
:4  Life's but a walking shadow, a poor player
:5  That struts and frets his hour upon the stage
:6  And then is heard no more.  It is a tale
:7  Told by an idiot, full of sound and fury,
:8  Signifying nothing.
                        -V.v. 19-28.
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llow the students to express their actions to the speech.)	responds and discusses	share	reactions to Macbeth's soliloquy.
y: "At the application level of inking, we apply previously learned ills to new materials.	listens	review	a definition of the application level of thinking

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There is an interesting <u>paradox</u> about
this speech: Although it is considerably
shorter and simpler in form than the two
previous speeches, and contains no
unfamiliar words, it is much more diffi-
cult to translate literally, and
therefore, to interpret and extrapolate
from. Do you have any ideas about why
this might be so?"
(Discuss.)

listens and discusses	become aware that	this speech, while apparently simpler in form and vocabulary, is actually more difficult (in concept) than the two speeches previously studied

"Is this soliloquy an <u>invocation</u>, a
<u>debate</u>, or something else?
What might we call it?

examines the speech	determine (meditation, elegy, etc.)	the literary <u>form</u> of the speech.

What is Macbeth really saying here?
Is his basic view of life <u>optimistic</u>
or <u>pessimistic</u>?
How do you know?"
(Discuss.)

discusses the speech	exercise and test	comprehension skills previously learned.

Say: "At the <u>analysis</u> level of thinking,
we <u>analyze</u> something by taking it apart
and finding out what the parts are like
and how they work together to form the
whole.

listens	review	a definition of the <u>analysis</u> level of thinking.

Examine the soliloquy again. What are
the parts of Macbeth's speech?
How do you determine this?
What images is Shakespeare using here?
All of these images are <u>metaphors</u> for
what single process?
Why do you think Shakespeare chose to
use these particular metaphors?
(Discuss.)

examines and discusses the speech (Responses will vary. Accept any for which a reasonable explanation is given.)	isolate	the separate parts of the speech; criteria for deter- mining what they are; the images used; the process for which the image are metaphors; the reason these particular metaphor were chosen.

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Are there any paradoxes--images or ideas that seem to be opposite or contradictory to each other? What transitions does Shakespeare use from one part of the speech to the next? What dominant impression does the entire speech give?" (Discuss.)	probes further	discover	possible paradoxes transitions from one part to another; the over-all impression conveyed by the speech.
Say: "At the synthesis level of thinking, we do imaginative, original thinking, and put together something new.	listens	review	a definition of the synthesis level of thinking.
Everyone, consciously or unconsciously, has a basic world view or fundamental personal philosophy that determines how he/she sees life and responds to it. This view can be changed by the decisions he/she makes.	listens	become acquainted with the idea that	everyone has a basic world view: 1) that determines how he/she sees and responds to life; and 2) that can be changed by the decisions the individual makes.
What is your world view? What metaphors might you use to represent your ideas about life?" (Discuss.)	reflects and discusses	become aware of	his/her own personal view of life; appropriate metaphors that might symbolize this view.
'Take a particular stance on life. It can be your true view or it can be an assumed view that is quite different from your own. Compose a short essay or meditation in poetic form. Select and develop metaphors that are suitable for your chosen view."	listens	determine	the procedures to be used during the synthesis activity
	composes a poem	create	a poetic statement about life.

(When students have completed their compositions, encourage them to share them with their classmates. Have the students look for, and recognize, unusual, striking images and particularly successful syntheses of ideas that produce a strong emotional impact.)	mutually shares his/her composition	recognize and appreciate	unusual, striking images and successful syntheses of ideas.

EVALUATION:

5. Say: "At the evaluation level of thinking, we first set up appropriate standards or values. Then we determine how closely an object, activity, situation, or idea meets these standards or values.	listens	review	a definition of the evaluation level of thinking
Values differ from facts in that facts can be determined to be true or false but values cannot. Then how do we determine what is good or bad? desirable or undesirable? morally right or wrong?" (Discuss.)	listens and discusses	distinguish	the difference between facts and values.
	discusses	consider	criteria we use to determine what is good, bad, etc.
"The decisions we make are based on our personal standards, values, and priorities. What do the decisions made by Macbeth and Lady Macbeth indicate about their system of values?" (Discuss.)	considers and discusses (Responses will vary.)	conclude that	a person's system of values can be inferred from the decisions he/she makes.

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The decisions they made resulted in
cts which set in motion a chain of
vents leading <u>inevitably</u> to the
estruction of both conspirators.
hat does this indicate about
hakespeare's system of values?"
Discuss.)

This is the traditional theme of tragic
rama, first developed by the Ancient
ireeks: Once that fatal first step is
aken, all the rest follows. There is
io turning back. This is an essential
:haracteristic of tragic drama.

lhat is essential in drama is not
iecessarily essential in real life.
lhen you make what later proves to
ie a 'wrong' decision, can you
iometimes <u>alter</u> your course or
·everse the chain of events proceeding
·rom your decision?
low?

jive an example from your own experience."
:Discuss and sum up.)

considers	conclude
and	that
discusses	

(Responses will vary.)

| listens | become |
| | aware that |

| weighs | conclude |
| ideas | that |

considers	appreciate
personal	that
experience	he/she has

an artist's
system of values
can be determined
by examining the
basic themes in,
his/her work.

an essential
characteristic
of tragic drama
is that the fatal
first step sets in
motion a chain of
events leading
<u>inevitably</u> to a
final catastrophe.

In a completed
work of literature
events follow an
order that remains
forever fixed;
while in real life
we have the oppor-
tunity to "rewrite
the script."

the power to
<u>re-evaluate</u> the
situation and make
<u>new</u> decisions when
previous decisions
have produced
unsatisfactory
results.

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*Given careful guidance in the use of application, analysis, synthesis,
and evaluation processes in dealing with Macbeth's great soliloquy, the
student will demonstrate the ability to get at the deeper meaning and
significance of the speech and to relate these discoveries to his/her
own world view and life experiences.*

Hypothesizing

Concept/Competency

BASIC PROCESSES - GENERAL REASONING

After much investigation and experimentation, a plausible hypothesis about a natural phenomenon may become a _theory_. If there is enough indisputable evidence to support it, a sound theory may become a _law_. This is how the sum of knowledge advances.

Developed by: Susan Sager

LEVEL __5 - 6__   TIME __1 hour__

	EFFECTIVENESS	ENTRY CONCEPTS:	MATERIALS:

ENTRY CONCEPTS:

Hypotheses are the tentative answers we formulate to questions we ask about phenomena observed in the world around us.

MATERIALS:

Source book of science questions and answers for the teacher;
Chalkboard, chalk;
Paper, pencils.

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:		LEARNINGS.
The student:	In order to:	

INTRODUCTION:

Write the following question structurers on the chalkboard:

Why is(n't)/are(n't) _____ ?
Why does(n't)/do(n't) _____ ?
What (would happen) if _____ ?

Point out that all investigations leading to new knowledge start with questions beginning like these. Students have been asking such questions themselves almost since they could first talk.

listens and observes	review	the structuring of questions that lead to the development of hypotheses.

EFFECTIVENESS *INTELLECTUAL* *COGNITIVE:*

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k the students: "What do we call the
ntative (trial) answer to such a question?"
nspoken hypothesis)
k why such an answer is tentative.
xperimental, provisional)

SSON DEVELOPMENT:

Post a chart with the following terms
and their definitions. Read and discuss
them, asking the students to give any
examples of each that they know of.

Hypothesis –
A tentatively inferred explanation of
the operation of certain phenomena with,
as yet, inadequate evidence to support
it; usually, a basis for further
experimentation

Theory –
A formulated general principle explaining
the operation of certain phenomena with
considerable evidence to support it

Law –
An exact formulation of the principle
operating in a sequence of events in
nature observed to occur with unvarying
uniformity under the same conditions

Clarify and differentiate these terms
with the students. Help them to note
the progression from extreme tentative-
ness to relative certainty.

---

recalls   demonstrate
(a hypothesis is subject
to revision as soon as
further information comes
in.)

listens and   identify and
observes   recall

EXAMPLES:
(Nebular hypothesis)

(Theory of evolution)

(Law of the conservation
of energy)

discusses   recognize
                     that

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---

knowledge of th
term hypothesis
and its meaning

the formal defi
itions for the
terms hypothesi
theory and law,
and examples of
each.

as we go from
hypothesis,
through theory,
to law, we
progress from
tentativeness
to certainty.

(Suggest that students do research to find more scientific hypotheses, theories, and laws to add to our collection.)

To give practice in applying knowledge of this process, invite students to formulate sample "Why--" and "What.... if--" questions. Ask other students to formulate the corresponding hypotheses.

Record questions and hypotheses on the board.

Tell the students that they will now play a game in which they will have the opportunity to analyze a question about a given phenomenon and come up with as many plausible hypotheses as possible to explain it.

After putting the students into groups of three to six, explain that each group will get a slip of paper with the same question on it.

They will be allowed five (5) minutes to think of as many hypotheses as possible to explain the question.

The group is to select one person to record the answers.

Give the students a question selected from a source book such as The Question and Answer Book of Everyday Science by Sonneborn (Random House, 1961).

utilizes his general information	devise	questions about natural phenomena and their corresponding hypotheses.
listens	determine	the instructions for playing the hypothesizing game.
analyzes the question	formulate	as many plausible hypotheses as possible that might explain a given phenomenon.

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Examples:
  Why is the water in the ocean salty?
  Why doesn't an Igloo melt inside?
  Why do we walk in circles when we are
     lost?

At the end of the first timed five (5)
minute period, give the group with the
most answers twenty-five (25) points.
In case of ties, each group will
receive 25 points. No duplications
are allowed; i.e., the same answer
cannot be reworded.

	reviews hypotheses	add	as many more different hypotheses as possible.

Give each group five or six minutes to
review their hypotheses in order to add
to the list.

At the end of the second timed period,
add ten (10) points to the score of
the group with the most answers.

\LUATION:

	evaluates hypotheses	choose	the hypothesis that best explains the phenomenon.

Redefine the task. Ask each group to
pick from their list the hypothesis
they think most likely approximates the
answer. Allot 10 to 12 minutes for this
portion of the lesson. Each group will
have to decide, as a group, what their
answer will be.

	announces	share	his group's best answer.

Allow each group to read its final answer.

	challenges other groups	require	clarification or defense of chose hypotheses.

Allow other groups to challenge or
ask for clarification.

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	re evaluates hypotheses	choose	the hypothesis that even bett· explains the phenomenon.

Give each group the opportunity to discuss the hypotheses presented and choose the one they think the most plausible. The recorder writes down the group's choice.

	listens or does research	determine	·the scientific explanation of the phenomenon

Read the correct answer or allow the groups to do research to find the correct answer.

Award the group(s) that chose the hypotheses that were <u>most nearly correct</u> 25 points.

Give the group(s) with the <u>correct</u> response 40 points.

	listens and discusses	learn about	evidence supporting the correct answer

Discuss the reasons for the correct answer.

```
   100 points  - Master of Logic
   60 - 95     - Superb Thinker
   35 - 55     - Good Thinker
   15 - 30     - You're on your way!
    0· - 10    - Back to the drawing board!
```

The Hypothesizing Game is adapted from the Memphis Handbook:

Patterson, Jo, Coordinator of CLUE.
<u>Why Doesn't an Igloo Melt Inside? A Handbook for Teachers of the Academically Gifted and Talented.</u> Memphis, Tenn.: Memphis City Schools, 1973.

Given the opportunity to formulate and evaluate hypotheses which attempt to answer questions about given natural phenomena, the student will develop fluency in generating plausible hypotheses and skill in evaluating them.

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MINI-MYSTERY

Developed by: Susan Sager

In some elimination logic problems, the given information consists of a set of statements, a certain number of which are known to be false-- although these are not identified. Puzzles of this kind can be handled efficiently through the use of grids and the symbols $\underline{T}$ and $\underline{F}$.

LEVEL 3 - 4   TIME 45 min.

INTELLECTUAL EFFECTIVENESS	**ENTRY CONCEPTS:** --Ability to use if...and then statements and record the results on grids.	**MATERIALS:** "HIP Puzzle" elimination logic problem-- copy for each student; Chalk, chalkboard, pencils, scratch paper

COGNITIVE: INTELLECTUAL	**TEACHER TASKS:**	**STUDENT**	
		ENABLING BEHAVIORS: The student: In order to:	**LEARNINGS:**
	INTRODUCTION: Say: "We have tackled and solved elimination logic problems in which we have matched persons with occupations, and so forth. We have found that using grids helps us keep track of the possibilities we eliminate until only the correct solution remains. Here is a different kind of "mini-mystery" for you to solve. See if you can determine how it is different and figure out an efficient strategy for solving it."	listens recall	systematic problem-solving.

LESSON DEVELOPMENT:

. Pass out a copy of the HIP Puzzle* to   listens   determine   the elements of
  each student. Read it aloud to them   the problem.
  with suitable emphasis and pauses.

Shorty Finelli was found shot to death
one morning. With better than average
luck, the police had three red-hot
suspects behind bars by nightfall.
That evening the men were questioned.
They made the following statements:

Buck: 1) I didn't do it.
        2) I never saw Joey before.
        3) Sure, I knew Shorty.

Joey: 1) I didn't do it.
        2) Buck and Tippy are both pals
           of mine.
        3) Buck never killed anybody.

Tippy: 1) I didn't do it.
        2) Buck lied when he said he'd
           never seen Joey before.
        3) I don't know who did it.

If one - and only one - of each man's
statements is false, and if one of the
three man is actually guilty, then who
is the murderer?

(*From 101 Puzzles in Logic and Thought
by C. R. Wylie, Jr. Used with permission
by Dover Publications, Inc.

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"What kind of grid will we need on which to test the results of the given information?"

(If students need more guidance, ask: "How many suspects are there? How many statements did each suspect make? What symbols usually stand for true and false?")

"What condition is given, which, when met, will tell us we have achieved the correct solution?"

"How will we be able to determine which one of each suspect's three statements is false?"

"At the outset, can you eliminate one of the three suspects as definitely innocent?

How did you draw this inference? Express it as a conditional (if...then) statement.

Write the tentatively correct symbols in the boxes of your grid opposite Tippy's name.

	1	2	3
Buck			
Joey			
Tippy	T		

organizes   construct   a suitable grid on which to record results.

	1	2	3
Buck			
Joey			
Tippy			

analyzes   discover   an appropriate strategy for determining which statements are false.

hypothesizes   infer   which suspects can be eliminated

(Tippy is innocent.)

(If Tippy committed the crime, then his first and third statements are both false, contrary to the given condition.)

("I didn't do it." is true.)

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Now...if Tippy is indeed innocent, what hypothesis must remain?

How will you test this hypothesis?"

(Elicit, by searching questions, a chain of conditional statements similar to the one shown at the right.)

	1	2	3
Buck	T	F	T
Joey	F	T	T
Tippy	T	T	F

(Either Buck or Joey is guilty.)

(If Buck is guilty, then Buck's first statement and Joey's third statement must be false.)

(But their second statements clearly contradict each other, so either Buck or Joey must be lying.)

(If Buck is lying, then he has made two false statements, contrary to the condition.)

(On the other hand, If Joey is guilty, then only his first statement must necessarily be false.)

(If Joey's second statement is true, then the condition can be met. Therefore, Joey is the murderer.)

EVALUATION:

5. "How can we judge the correctness of this solution?"

fills in   prove   the correctnes
grid   of the problem
                             solution.

> Given a set of statements, a certain number of which are known to be false, the student will be able to find a solution through the use of if...then statements and record the results on grids.

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Deduction

Developed by: Susan Sager

DEDUCTION

In the deductive reasoning process, we begin with a generalization--or premise-- assumed to be true, and work down to a particular statement--or conclusion-- which must be true if the generalization is true.

LEVEL   5 - 6 +   TIME Several 30-45 min. per.

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

Different kinds of reasoning seem to go through different kinds of processes to arrive at their answers.

MATERIALS:

Chalkboard and chalk;
Writing paper and pencils;
Duplicated exercises for application & analysis;
Background material on deduction for the teacher

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	In order to;	

COGNITIVE:

INTRODUCTION:

Say and explain:

"The deductive method of reasoning is the one primarily used in the mathematical approach to knowledge.

When we are using deduction, we begin with a generalization--a general statement assumed to be true--and we work down to a particular statement which must be true if the general one is true. This particular statement is called the conclusion."

listens	learn that	deductive reasoning-- or logic--is mathematical in approach.
listens	become aware of	the basic process used in deduction.

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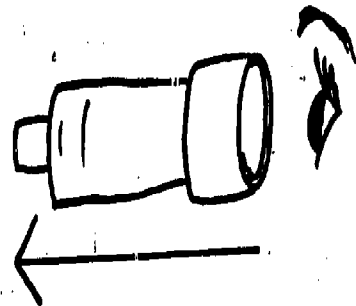
LESSON DEVELOPMENT:

. Say, "Here's an example. You·start with the generalization--or first premise--that...

All grasshoppers have six legs. Then you take a hypothetical grasshopper named Gus. (You don't have to go out and catch an actual grasshopper, because you are working in the realm of abstract logic.) Your second premise: Gus is a grasshopper. Your conclusion: Therefore, Gus has six legs."

Generalization – First Premise:
    All grasshoppers have 6 legs.

Second Premise:
    Gus is a grasshopper.

Conclusion –
    Therefore, Gus has 6 legs.

(To be sure that the students understand the principle and basic process of deduction, have them supply the conclusions for deductions such as the following:

First premise:
    All dragons breathe fire.

Second premise:
    Herbert is a dragon.

Conclusion:
    Therefore, _____.

---

listens to a sample deduction

reinforce awareness of

the terminology and the process used in one kind of deduction.
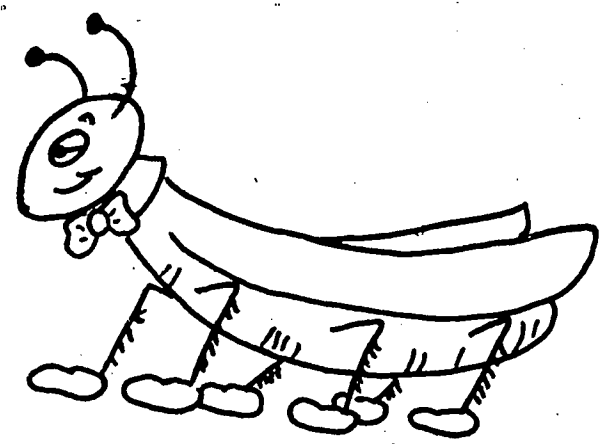
listens and responds

become involved in

the first activity building a base of knowledge and comprehension.

supplies conclusion of syllogism

demonstrate

ability to draw a valid conclusion when the first and second premise are given.

...Herbert breathes fire.

3

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(Note: At this point, you may need to explain or review the difference between <u>validity</u> and <u>truth</u>. A syllogism may be valid, even if the conclusion is not true. However, if the premises are true in a properly constructed syllogism, the conclusion must also be true.)

Say: "A <u>syllogism</u>--one kind of deductive reasoning--consists of two statements assumed to be true, from which a third statement follows inevitably <u>if</u> the first two are true.

It is really a way of comparing statements about three sets so that a valid conclusion may be drawn.

What three sets are we dealing with in the example?

Notice that we must reword our deduction so that the <u>verb</u> is always in a form of <u>to be</u> and the three <u>sets</u> are clearly designated."

　　　　(1)　　　　　(2)
All <u>dragons</u> <u>are</u> <u>firebreathers.</u>
　(3)
<u>Herbert</u> <u>Is</u> a dragon.

Therefore, Herbert <u>Is</u> a firebreather.
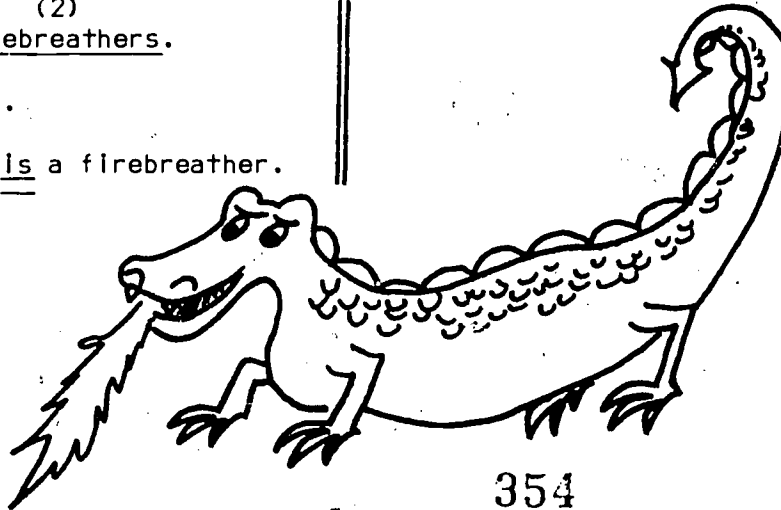
listens and assesses	distinguish	the difference between <u>validity</u> and <u>truth</u>.
listens	learn	the definition of a <u>syllogism</u>.
responds	demonstrate	ability to identify the three <u>sets</u> compared in a syllogism.
(1) Dragons (2) Firebreathers (3) Herbert		
listens and observes	learn that	in a true syllogism, (1) the verb used is always a form of <u>to be</u>; (2) the <u>three sets</u> are clearly designated.

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(At this point, the students should be shown on the chalkboard how a syllogism can be checked for validity by drawing a circle for each of the three sets and seeing whether their relationship to one another is clear and unambiguous.)

All dragons are firebreathers.
Herbert is a dragon.
Therefore, Herbert is a firebreather.

All dragons are firebreathers.
Herbert is a' firebreather.
Therefore, Herbert is a dragon.

2. Say: "You will now have the opportunity to apply your new skills in deduction to a number of syllogisms or near-syllogisms.

If a deduction is not in correct syllogistic form, reword it so that the verb is a form of to be and the three sets are clearly designated.

---

listens,   learn that
observes,
and responds

listens   determine

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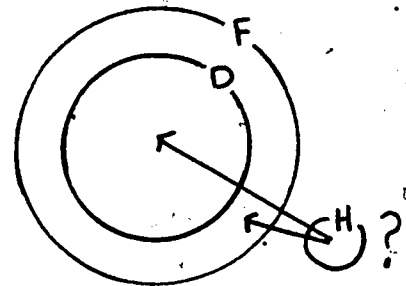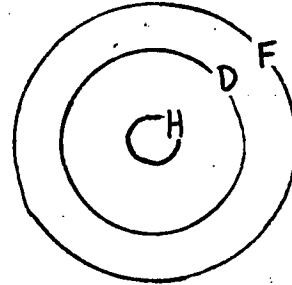
a syllogism can be checked for validity by diagramming the relationship of the three sets by drawing circles.

(There is no question where Herbert's circle belongs. Therefore, this is a valid syllogism.)

(Since it is not clear where Herbert's circle belongs, no valid conclusion is possible.)

procedures to be used for the second activity-- application.

Then check the validity of each syllogism
by using circle diagrams. You will find
that these circle diagrams will not always
take the same form as the ones we have used
so far. Notice key words such as all,
only, no, some, etc."

(Distribute duplicated application
exercises. Have the students work in
pairs to promote interaction, question-
ing, and discussion.)

applies skills to novel problems	demonstrate	ability to recas a deduction intc correct syllogis form; ability to check validity of syllogisms throu the use of circl diagrams.

3. At a later session--after the students
have gained proficiency in diagramming.
given syllogisms as a means of testing
validity and in making up their own
syllogisms to test--present them with
an analysis exercise.

Say: "Here are 10 situations for you
to analyze. In each situation, try to
determine the point of view expressed,
and list as many as you can of the
underlying assumptions that are
implied."

(Demonstrate, using the first situation
as an example. Discuss.)

listens, observes and discusses	determine	procedures to be used for the third activity-- analysis.

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"Then, construct at least two syllogisms out of each situation, both valid (but not necessarily having true conclusions.)			
Try for contradiction--opposite conclusions in the two syllogisms. Or try for sequence--the conclusion of one syllogism becoming a premise of the next syllogism."	listens	learn	definitions for the terms contradiction and sequence.
(Again, demonstrate and discuss.			
Distribute duplicated analysis exercises, and have the students work in pairs, as during the application exercise.)	completes exercises	demonstrate	ability to analyz statements for point of view and the underlying assumptions implied;
			ability to con- struct syllogisms based on these assumptions.
4. Present the following idea for use in creative writing:	listens, observes, and discusses	determine	procedures to be used for the fourth activity-- synthesis.
"Test your skill in logic or imitation logic by composing an essay in support of a proposition that is almost certain to be disagreed with--at first. Use any means, fair or foul, to convince your audience of the 'truth' of your proposition, wherever possible, using logical processes or those that appear to be logical."			
(Write the following propositions on the board as suggested possibilities. Discuss.)	composes an essay supporting an erroneous proposition	demonstrate	skill in using logic or imitatic logic to persuade an audience.

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(1)   The moon is made of green cheese.

(2)   Automobiles are not just machines,
      but have minds of their own and are
      engaged in a conspiracy to take over
      the world.

(3)   The earth is the center of the
      Universe.

(4)   All matter is composed of four
      elements: fire, air, earth, and
      water.

(5)   Nuclear fallout is beneficial to
      human health.
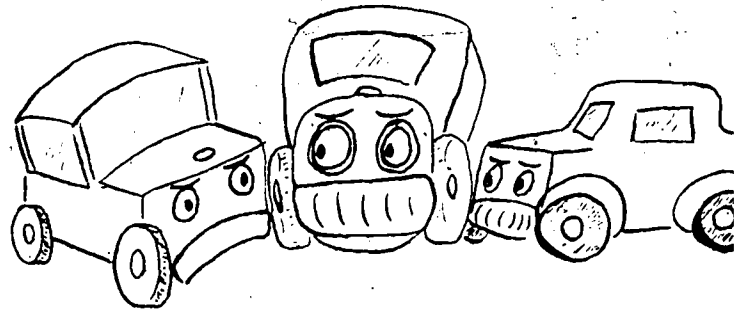
EVALUATION:

5.   Have class members evaluate the essays
     for

     a.   their persuasiveness, whether
          logically sound or unsound;

     b.   the soundness of their logic,
          whether persuasive or not.

Adapted from L. M. Myers, GUIDE TO AMERICAN
ENGLISH, 4th Edition, © 1968, p. 255, and
Monroe C. Beardsley, THINKING STRAIGHT,
© 1966. Reproduced by permission of
Prentice-Hall, Inc., Englewood Cliffs, N.J.

evaluates   judge   effectiveness of
compositions   essays in terms o

                                        a.   persuasivenes

                                        b.   soundness of
                                             logic.

Given instruction in deductive reasoning, t
student will demonstrate awareness that we
begin with a generalization assumed to be
true and work down to a particular statemen
which must be true if the generalization is
true.

1. All babies have tails.
   All dogs are babies.
   Therefore, all dogs have tails.

2. All B are C.
   All A are B.
   Therefore, all A are C.

3. All children love candy.
   Seymour loves candy.
   Therefore, Seymour is a child.

4. Only young persons use skateboards.
   Fred uses a skateboard.
   Therefore, Fred is a young person.

5. No marines are cowards.
   Dave is a marine.
   Therefore, Dave is not a coward.

6. Some of his friends are sailors.
   All of his friends are clever people.
   Therefore, some sailors are clever people.

7. All girls are good cooks.
   Pat is a good cook.
   Therefore, Pat is a girl.

8. All girls are good cooks.
   Pat is a girl.
   Therefore, Pat is a good cook.

9. Only Communists read Marx.
   Jones reads Marx.
   Therefore, Jones is a Communist.

10. Some surfers are bachelors.
    No bachelors are people without pride.
    Therefore, some people without pride are not surfers.

Sources:

Beardsley, Monroe C. _Thinking Straight_, 3rd ed. (Englewood Cliffs,
      N. J.: Prentice-Hall, Inc., 1966) - No. 1, 2, 10.

Myers, L. M. _Guide to American English_, 4th ed. (Englewood Cliffs,
      N. J.: Prentice-Hall, 1968) - No. 5, 6, 9.

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1. I've compiled this list of criminals, and they are all left-
   handed.   Now, do you think I'd trust Elmer, whom you see over
   there eating with his left hand?

2. Is it love? He gave her a ring, didn't he? The setting of
   the ring scratched glass when she tested it, didn't it?

3. According to the accident report, one car was going   when
   the accident occurred. Don't you feel sorry for the   nt
   victims--the people in the other car, I mean?

4. Professor X must know his subjec   He holds a Ph.D. degree,
   doesn't he?

5. Since you cannot spell ve   ately, Miss Claypool, it is
   apparent that all of your   n teachers have been inadequate.

6. Senator Y must be taking bribes, since by his own admission
   his living expenses exceed his official senatorial income!

7. Since you favor our country's selling garden hose to a Communist-
   dominated country, it is likely that you are a Communist yourself,
   and certain that you are a Communist sympathizer.

8. This used car has been driven very little; it was owned by an
   unmarried, middle-aged school teacher.

9. Try some of this cough medicine. It worked wonders for my
   sister's sore throat four years ago, and you are welcome to
   the rest of the bottle.

10. These are delightful snapshots of your children. Their mother
    must be a very beautiful woman.

Source:

Myers, L. M. Guide to American English, 4th ed. (Englewood Cliffs,
     N. J.: Prentice-Hall, Inc., 1968), p. 254.

the big A

Developed by:
Susan Sager

Concept/Competency
ARISTOTELIAN FORMAL LOGIC

Aristotle's three laws of formal logic--
the Law of Identity, the Law of the
Excluded Middle, and the Law of Non-
Contradiction--can be useful aids in
reasoning, up to a point, if handled
carefully.

LEVEL 5 - 6 +   TIME Several 30-45 min. per.

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS: People seem to make certain kinds of state- ments when they are working out ideas through reasoning.	**MATERIALS:** Chalkboard and chalk; Writing and drawing materials; Duplicated editorials and letters to the editor; background reference material on formal logic 　for the teacher

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COGNITIVE:

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: 　In order to:	**LEARNINGS:**
INTRODUCTION: Say: "More than two thousand years ago, a Greek philosopher named Aristotle formulated three laws which seemed to him to describe the ways in which people habitually thought." Write on the chalkboard and read aloud: (1) Law of Identity: 　　　A is A. (2) Law of the Excluded Middle: 　　　Everything is either A or not-A. (3) Law of Non-Contradiction: 　　　Something cannot be both A and not-A.	listens and 　　become observes 　　　acquainted 　　　　　　　with	the three laws on which Aristotelian formal logic is based.

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hese three laws form the basis for
'istotelian formal logic, which has been
·udied and practiced for many centuries."

\llow students to examine and comment on
ie three laws.)

:SSON DEVELOPMENT

. Say: "Suppose that 'nstead of using the
letter A in these three laws, we named
some particular substance...for example,
cheese:"

(1) Cheese is cheese.
(2) Everything is either cheese or
not-cheese.
(3) Something cannot be both cheese
and not-cheese.

' 'nes this seem to 'make sense'? Okay.
I m going to give you the opportunity
to become more familiar with these
three laws of thinking through a
tec'.. e called "slot substitution.'

' will call out the number of one of
the laws and give you a word to drop
in the 'slot' formerly occupied by A.

First law. "Pigs."
Second law. "Prunes."

Third law. "Popcorn."

listens and observes	determine	procedures to be used in the first activit, building a base of knowledge and comprehension.

cheese
is
cheese

listens and responds	learn thoroughly	the structure of Aristotle's three laws of logical reasoning.

"Pigs is pigs."
"Everything is either
prunes or not-prunes."

"Something cannot be
both popcorn and not-
popcorn."

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(Have the students answer in unison or
as individuals. changing the order of the.
laws and givi: a variety of nouns
until the stru: of the statements is
completely fam r and the responses are
automatic.)

Say: "Now t. you are familiar with
Aristotle's three laws of thinking,
carefully observe the language behavior
of people ar nd you. Look for examples
of reasoning hat seem to follow a form
similar to t se three statements.

Keep track of the frequency with which
this kind of reasoning occurs. When
you have had a chance to gather some
data, we will have a class meeting to
discuss our observations. Then we will
try to figure out a way to chart our
observations."

Say: "A good place to see examples of
the kind of reasoning described by
Aristotle is in editorials and letters
to the editor on the opinion pages of
our city's newspapers.'

I have duplicated four such recent
editorials and letters on these sheets.
Everyone will have a copy of all four.

You will be divided into four smaller
groups. Each group will be responsi-
ble for analyzing one of the editorials
or letters.

listens	determine	procedures to be used in the second activity-- application.
observes language behavior of others	identify and tabulate	examples of reasoning structured like Aristotle's three laws.
listens	determine	procedures to be used in the third activity-- analysis.

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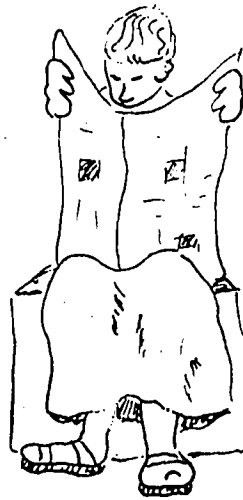
Try to extract the basic argument and state it in the form of one of the laws that Aristotle recognized. Then try to determine whether or not it is a <u>valid</u> statement" (If necessary, explain the difference between <u>validity</u> and <u>truth</u>.)	analyzes editorials and letters to the editor	detect, isolate, and determine the validity of	basic arguments which take the form of Aristotle's three laws.
Say: "You have had enough experience with logical reasoning to notice that it sometimes causes perplexing difficulties.	listens	determine	procedures to be used in the fourth activity-- <u>synthesis</u>.
One way of dealing with such problems is to treat them with humor or satire. Lewis Carroll turned logic upside down or inside out in <u>Alice in Wonderland</u> and <u>Alice Through the Looking Glass</u>. So did Jonathan Swift in <u>Gulliver's Travels</u>.			
See if you can compose a story, poem, skit, or panoramic picture which has an internal logic but which is nevertheless completely ridiculous or absurd." (Have students share their creations with classmates.)	develops a story, poem, skit, or panoramic picture.	deal humorously or satiri- cally with	some of the per- plexing difficulties caused by the limitations and incongruities of logic.
ALUATION:			
(On the chalkboard, write three state- ents, similar to the ones below, structured on Aristotle's three laws. content of the statements will depend on the interests and values of your students.)	listens and observes	determine	procedures to be used in the fifth activity--<u>evaluation</u>

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Notice that subjects and complements are
in the form of nouns, albeit qualified
nouns in statements (2) and (3).)

(1) A black is a black.

(2) Everyone is either an educated person
or an uneducated person.

(3) An action cannot be both a beneficial
action and a harmful action.

Say: "On paper--or on the chalkboard--
you might say that these statements appear
to be logical. But further reasoning
growing out of them or courses of action
based on them could lead to serious
difficulties. Why?"

(Discuss briefly.)

"Choose one of these three statements.
Take a stand on it based on the practical,
social, or ethical problems which might
result from further reasoning or action
based on the statement. Support and
justify your stand."

(Display the resulting essays for members
of the class to read and comment on.)

extrapolates from given statements	weigh	implications concerning statements based on Aristotle's three laws of reasoning.
considers a given statement	appraise	practical, social, or ethical problems growing out of the statement.

Given the opportunity to become
familiar with Aristotle's three
laws of formal logic, the student
will learn to use them carefully
and evaluate resulting impli-
cations thoughtfully.

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Induction

INDUCTION

In the inductive reasoning process, we begin by carefully observing a physical phenomenon--many, many particular cases-- and work up to a generalization--or hypothesis--which is a systematic explanation of the phenomenon.

Developed by: Susan Sager

LEVEL 5 - 6 +   TIME Several 30-45 min. periods

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

In deductive reasoning, we concern ourselves less with what is "real" than with what is "valid." When we are concerned with real phenomena, another kind of reasoning is more suitable.

MATERIALS:

Materials for science reference and experimentation;
Charts listing steps in the scientific method and the problem-solving process;
Duplicated descriptions of experimental study for evaluation activity;
Background material on induction for the teacher

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:	LEARNINGS:
	The student: In order to:	

COGNITIVE:

INTRODUCTION:

Say and explain:
"The <u>inductive</u> method of reasoning is the one primarily used in the <u>experimental</u> approach to knowledge.

When we are using induction, we begin by carefully observing a physical phenomenon-- many, many.<u>particular cases</u>--and we work up to a <u>generalization</u>--a general statement which is a systematic explanation of the phenomenon. This explanation is called a <u>hypothesis.</u>"

listens	learn that	inductive reasoning is experimental in approach.
listens	become aware of	the basic process used in induction.

2 & 7

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LESSON DEVELOPMENT:

Say: "Here's an example.
You have been out catching grasshoppers.
You have collected many, many grasshoppers.

You begin by carefully observing them as examples of a physical phenomenon. In every one of these particular cases, you observe that the grasshoppers have six legs.

You formulate a generalization about grasshoppers.
Your hypothesis: All grasshoppers--at least all that you observed--have six legs."

Particular Cases:
    Grasshoppers 1, 2, 3, 4, 5, etc. have
    6 legs.

Generalization - Hypothesis:
    Apparently, all grasshoppers have 6
    legs.

(To be sure that the students understand the principle and basic process used in induction, have them supply the hypotheses for described phenomena such as the following):

Experimental Group plant 1, 2, 3, etc., fed and watered according to instructions, died after being placed in a closet for 10 days.

listens to a sample induction	reinforce awareness of	the terminology and the process used in one kind of induction.
listens and responds	become involved in	the first activity-- building a base of knowledge and comprehension.
supplies the hypothesis for the induction	demonstrate	the ability to formulate an adequate hypothesi when given sufficient infor- mation on which to base it.

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Control Group plant 1, 2, 3, etc., 'fed
and watered according to instructions,
were still alive after being placed
near an unshaded window for 10 days.

Hypothesis:_____

(Note: It might be well to have the
students notice that when we use the
inductive process, a good deal of
information usually has to be included
describing experimental conditions and
controls. Otherwise it is difficult
to isolate the generalization or
hypothesis that explains the phenomenon--
in this case, the death of the plants in
the experimental group.)

(At this point, the students should be
given the chance to apply their knowledge
of the inductive process to a novel
situation.

The situation can be purely hypothetical,
in which the students try to produce an
adequate explanation for a selected
phenomenon and then check their hypotheses
through research in reference materials.
See the lesson on Hypothesizing.

Or the situation can be a concrete one
in which the students attempt to predict
what will happen under given conditions
and then check their hypotheses by
carrying through with actual experimental
projects.)

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...Plants apparently need sunlight in order to live.		
listens and assesses	become aware of	the need to include information describing experimental conditions and controls when using the inductiv process to form hypotheses explaining natural phenomena.
listens	determine	procedures to be used for the second activity-- application.
explains a phenomenon	demonstrate	the ability to apply hypothesizin skill to a novel situation.
checks a hypothesis through research	determine	the accuracy of the hypothesis.
predicts what will happen	demonstrate	the ability to hypothesize concerning future effects.
checks a hypothesis through experimentation	determine	the accuracy of the hypothesis.

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Say: "Inductive reasoning, tho scientific method, and the problem-solving process are closely related to one another.	listens and responds	recall and acquire	background needed In order to take part In the third activit analysis.
At the beginning of our study of Inductive reasoning, we stated the inductive process In its simplest form in order to distinguish It from deductive reasoning, the opposite process." (Have students briefly recall both processes and give an illustrative example of each.)			
"Today we are going to compare the scientific method and the problem-solving rocess. Both can be stated in five steps. And both can be compared to the five levels of thinking that we study and use in this class: recall, application, analysis, synthesis, and evaluation."	listens and observes	become aware of	ways In which the scientific method and the problem-solving process compare to the five level of thinking described by Bloom.
(Display two charts side by side listing the steps used in the scientific method and the problem-solving process.)			
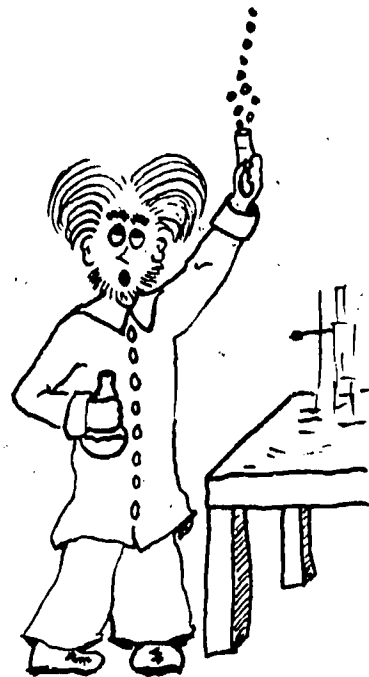
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The Scientific Method[1]

1) Starting with a question, idea, theory, or hunch	studies a chart	become familiar with	the steps used in the scientifi method.
2) Performing experiments and making tests			
3) Observing carefully, gathering evidence, and checking it			
4) Reaching a conclusion			
5) Testing the conclusion			

The Problem-Solving Process[2]

1) Gathering facts related to the problem	studies a chart	become familiar with	the steps used in the problem-solving process.
2) Stating the problem precisely			
3) Brainstorming possible solutions			
4) Making a hypothesis (selecting a possible solution)			
5) Testing the hypothesis (finding out whether the solution works)			

Ask: "What happens if the conclusion proves to be false or the solution to the problem doesn't work?" (Discuss.)

"Here are some situations to think about and analyze:

Take any well-known scientific discovery, such as the discovery of radium. Try to reconstruct, step by step, the process the scientist(s) might have gone through in making this discovery. You may use resource material.	.... reconstructive thinking	rediscover	the process used by scientist(s) in making a particular discovery.

Iinteer, Catherine, Words and What They Do o You (White Plains, NY, 1953), p. 19 adapted).

Kingston, Cecelia, Teacher's Guide for Effective Thinking: Ways of Problem Solving White Plains, NY, 1977), p. 7 (adapted).

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Or take any everyday practical or social problem. Analyze the problem, and describe the process we might go through in order to solve it."	analyzes a practical or social problem	discern	a process by which the problem might be solved.
Say: "If you like to represent abstract concepts with concrete models, progress might be described as an ascending spiral. When you rise in this world, sometimes you have to go in circles to do it!	listens	become aware of	the possibility of representing abstract concepts with concrete models.
We discovered in our analysis activity that scientific investigation and systematic problem solving can be a circular process: if your conclusion proves false or your solution to the problem doesn't work...well, it's back to Step One again--or 'back to the drawing board' as it is sometimes expressed.	listens and responds	learn and demonstrate awareness that	scientific investigation and systematic problem solving are processes which can be represented by ascending spirals.
Can you give examples from your own experience where this has happened?" (Discuss briefly.)	gives examples from personal experience	demonstrate understanding that	induction is a circular process incorporating trial and error.
"Think of a tough, complex problem that seems to defy solution...or a problem for which solutions proposed so far seem inadequate, absurd, or unacceptable... or a problem whose solution by conventional methods would only lead to more and worse problems in some other area.	listens and responds	determine	procedures to be used for the fourth activity-- synthesis.

292 373
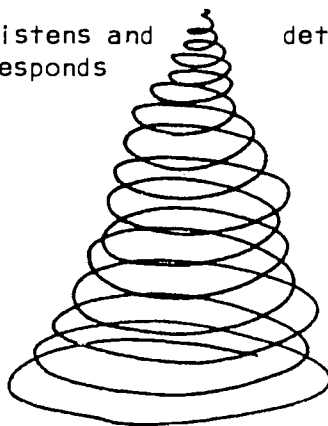
Here are examples of two such dilemmas.
You will be able to think of many others.

1) If we reduce unemployment, we will
   increase inflation. It is necessary
   either to accept rampant inflation
   as the price of full employment, or
   to accept high unemployment as the
   price of reduced inflation.

2) Some of the most prized groves of
   trees in Redwood National Park are
   being undermined by erosion caused
   by the clear cutting of trees on
   nearby private lands. But if we
   increase the size of the park to
   protect these groves for future
   generations, thousands of people
   in the lumber industry will lose
   their jobs.

Thinking about such problems has fallen
into a rut. We go over and over the
same old track, repeatedly doing what
just doesn't work, and can't seem to
break away to fresh, unfamiliar, but
possibly useful new ideas.

listens   hear and
                           assess
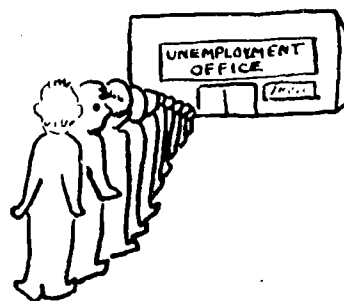
listens   become
                           aware that

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examples of
tough, complex
problems resistant
to solution by
conventional means

1) the paradox of
   simultaneous,
   high unemploy-
   ment and high
   inflation;

2) the conflicting
   demands of
   conservation
   and economics.

conventional
thinking on
tough problems
can fall into
a rut in which
the same
solutions
that don't work
are repeatedly
tried without
success.

Creative new solutions to stubborn old problems require divergent thinking, fluency, flexibility, and originality.	listens	become aware that	creative problem solving requires divergent think-ing, fluency, flexibility, and originality.
Get together in groups of three or four. Select a problem. See if you can brainstorm some possible solutions. Choose the one you think best. Share the results of your session with your classmates."	interacts with others in a small group	develop	skills in.... selecting a problem, clarifying a problem, brainstorming possible solutions, making hypotheses, and choosing the best hypothesis.

ALUATION:

(Drawing on available resources, choose any well-known experimental study in the social sciences and duplicate, for distribution to the students, a brief, clear account of it.	studies a source sheet	become familiar with	material to be appraised during the fifth activity-- evaluation.
Have the students evaluate the study for the care of its experimental controls and the soundness of its inductive reasoning.)	evaluates an experimental study	demonstrate	ability to judge: care of experi-mental controls; soundness of inductive reasoning.

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2 94

After students have completed the activity, say:

"The <u>social</u> sciences study the behavior of human beings in groups. Examples are sociology, anthropology, history, and geography.	listens	learn	the definition of the term <u>social sciences</u> and examples of different disciplines in the field.
The <u>physical</u> sciences study the behavior of non-living things. Examples are physics, chemistry, astronomy, and geology.	listens	learn	the definition of the term <u>physical sciences</u> and examples of different disciplines in the field.
When we conduct experiments, why are we on less certain ground in the area of social science than in the area of physical science?" (Discuss.)	considers	decide how	the nature of the material we are studying determines the degree of certainty we can feel about the generalizations we make.

Given instruction in inductive reasoning, the student will develop the ability to draw sound generalizations from careful observation of data, and will demonstrate awareness of the part induction plays in the scientific method and the problem-solving process.

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LEVELS OF THINKING	SCIENTIFIC METHOD	PROBLEM-SOLVING
1. recall	1. observe	1. gather facts
2. application	2. make theory on hypothesis	2. state problem
3. analysis	3. experiment and gather evidence	3. brainstorm
4. synthesis		4. make a nypothesis (selecting solution)
5. evaluation	4. interpret and make conclusion	
		5. test hypothesis
	5. test conclusion	

The Scientific Method is a way of thinking about problems and solving them. The general rules used today were worked out by many men during hundreds of years. Scientists find it difficult to tell in what order they actually use the steps of the scientific method. The human mind probably does not actually solve problems in a systematic fashion. But, after the problem is solved, the scientist can use the scientific method to explain the problem and its solution in an orderly way. The formal plan has at least five check points:
    (1) stating the problem
    (2) forming the hypothesis
    (3) observing and experimenting
    (4) interpreting data
    (5) drawing conclusions.

WORLD BOOK ENCYCLOPEDIA

the big non A

Developed by: Susan Sager

Concept/Competency

NON-ARISTOTELIAN GENERAL SEMANTICS

Non-Aristotelian General Semantics
provides a much more accurate
system for "mapping" the realities
of a scientific age than does
Aristotelian Formal Logic.

LEVEL __5 - 6 +__   TIME Several 30-45 min. per.

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:

Aristotelian Formal Logic can be useful in
certain kinds of reasoning; but it has
serious limitations as a description of
physical reality.

MATERIALS:

Chalkboard and chalk;
Writing paper and pencils.
Duplicated exercises for analysis;
Background reference materials on general
  semantics for the teacher

COGNITIVE:

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	

INTRODUCTION:

Say: "You are all familiar with Aristotle's
three basic laws of thinking--the Law of
Identity, the Law of the Excluded Middle,
and the Law of Non-Contradiction."

(Have the students state the laws and give
slot-substitution statements structured on
them.)

	listens	recall	facts previously learned about Aristotelian formal logic.
	responds	demonstrate	comprehension of the three basic premises of Aristotelian formal logic.

logic

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"These laws were formulated in a pre-scientific age, and were useful for centuries in helping people to reason. For many people, they still represent 'just plain common sense.'

In recent times, however, as our scientific knowledge has grown by leaps and bounds, these laws of thinking have proved to be more and more inadequate as a description of reality. Do you have some ideas about why this might be so?"

(Discuss briefly.)

"In 1933, a Polish mathematician named Korzybski published a monumental work called Science and Sanity. He believed that if the method of the scientist could be applied to a study of our thinking and language habits, we should have fewer misunderstandings and conflicts.

What does a scientist do?"

(Have students summarize the steps of the Scientific Method.)

listens and responds	obtain	background information essential for an introduction to non-Aristotel general semantic

semantics

listens	become acquainted with	the founder and goal of general semantics.
gives a summary	demonstrate familiarity with	the basic proces scientists go through when developing new knowledge.

(Wording will vary)
He/she:
1. has a question, idea, theory, or hunch;
2. performs experiments and makes tests;
3. observes carefully, gathers evidence and checks it;
4. reaches a conclusion;
5. tests his/her conclusions.

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Korzybski's method of studying language is alled (write on board)...

Non-Aristotelian General Semantics

nd is symbolized by a capital $\underline{A}$ with a minus ign over it (write on board)...

$\overline{A}$.

he Big Non-A!

ESSON DEVELOPMENT:

Say: "Korzybski, too, formulated three major laws. I'm going to list all three of them on the board for you with relatively little explanation. The first law may surprise you!"

(1) <u>Law of Non-Identity</u>:
A is not A.

Vertical Non-Identity -
The word is not the object.

Horizontal Non-Identity -
Smith$_1$ is not Smith$_2$.
Smith$_1$ today is not Smith$_1$ yesterday.

(2) <u>Law of Non-Allness</u>:
A is not all A.
The word does not represent all the object.

---

listens and observes — learn

the name and symbol for one scientific approach to the study of language habits.
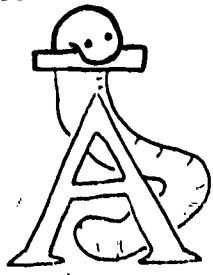
listens and observes — determine — procedures to be used for the first activity--building a base of <u>knowledg</u> and <u>comprehension</u>

listens and observes — become acquainted with the — <u>Law of Non-Identity</u>

Vertical: Distinguishing different levels of abstraction

Horizontal: Differentiating individuals and different stages in continuity.

listens and observes — become acquainted with the — Law of <u>Non-Allness</u>

(3) Law of: Self-Reflexiveness:
We use language for talking about language;
we make statements about statements;
we make abstracts of abstracts of abstracts...

(Allow students time to examine the three premises and speculate on their meaning.)

Say: "Korzybski's total writings are very complex and difficult, as you might guess. Today I'm giving you only the barest introduction. But as you get into the study of semantics--the meanings we attach to words--I think you'll find it not only enlightening but fascinating."

2. Say: "Let's conduct some experiments which will help to illustrate the premises of general semantics."

(1) (Ask the students to put a piece of paper on their desks. Ask them to weigh it in their hands, feel the texture, hold it to the light, taste it, and mark it with a pencil. Then have them put the papers away, and ask how much they can do with the word paper. Can they do any of the former acts with the word alone? Do they sense the two levels?

listens and observes	become acquainted with the	Law of Self-Reflexiveness.
examines and discusses premises	interpret and interrelate	unfamiliar but provocative new ideas.
listens and observes	determine	procedures to be used for the second activity-- application.
handles and experiences a piece of paper	distinguish	the difference between the tangible object and the word used to represent it.
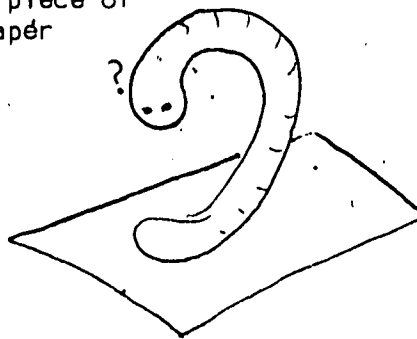
paper

300   382

Ask whether we can sit on the word chair or eat the word <u>lunch</u>. If this seems obvious, ask whether people worry about things that never happen; whether they judge a person's success by his possessions. Ask them what they think about an honor student who cheats; a student government that does not govern students; an "easy to repay" loan.)

Ask: "Are these examples of con- fusing the word with the thing?" (Discuss.)

(2) (Ask the students to choose one of the simplest objects in the room to talk about--a pencil will do. Tell them we chose something simple because we are going to try to say "all" about it. Ask them how long they think it will take to tell "all." Accept estimates.)

Then say, "We will have to find out for ourselves."

(Write briefly on the board each statement that is made, accept each contribution with encouraging remarks, and ask, "Is that all we can say?" Students will open up many topics for discussion. Some will talk about wood, others about graphite, others about manufacture or uses. Eventually one student will point out that there is no limit to the discussion, that each new topic opens up an entire field for talk.)

focuses on additional examples

clarify concepts; and to form the general- ization that

the word is no the object.

examines a pencil or other simple object

try to tell

"all" about an object.

etc.

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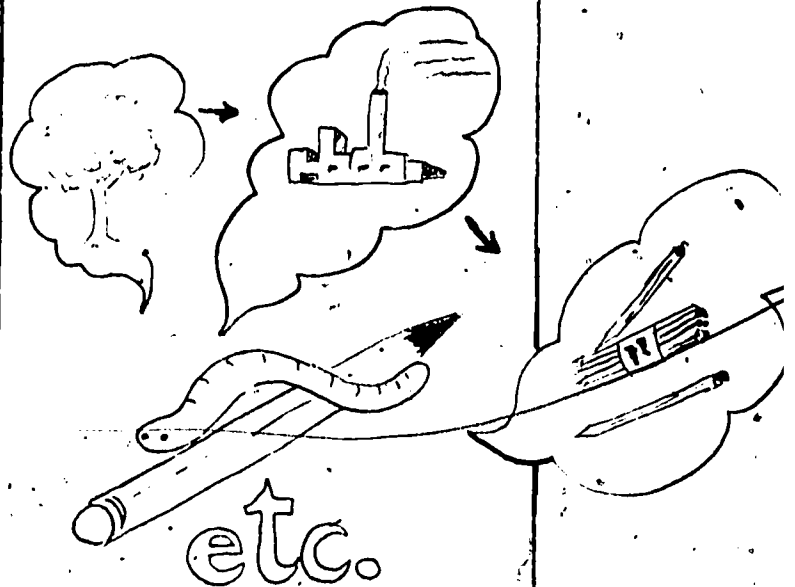
When students accept this viewpoint,
ask, "How long do you think we can
go on talking?"

(When they decide that there is no
limit to the time they could talk,
accept their decision. It may take
several class periods before the
students volunteer their discovery,
but if they are allowed to arrive
at the conclusion themselves, it will
make a lasting impression on them.)

(3) (Ask a student volunteer to make
some kind of non-verbal statement to
the class.
This should be pure pantomime, done
entirely without resorting to words.
Students observing the statement
should try to receive the message
directly, without mentally trans-
lating it into words.

Have another student make a statement
about the first statement, again in
a totally non-verbal way.)

Ask: "Is it possible to communicate
complex ideas without resorting to
language?
When you do use language, is it
possible to avoid self-reflexiveness?"

(Discuss.)

non-verbal statement

uses	make	a non-verbal
or watches	or see	statement...
pantomime		
		and
		then...
		...a non-verbal
		statement about
		the non-verbal
		statement.
sums up the	become aware	we use language
experience	of the	for talking
	virtual	about language.
	impossibility	
	of express-	
	ing complex	
(Responses will	ideas non-	
vary.)	verbally;	
	and to form	
	the general-	
	ization that	

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Say: "I have here an exercise which briefly describes 12 situations. Each one illustrates one of the major premises of general semantics or shows what might result due to a misevaluation in that area.	listens and observes	determine	procedures to be used for the third activity-- analysis.
Classify the items, marking them (1), (2), or (3) according to which law or its violation they best illustrate-- (1) Law of Non-Identity; (2) Law of Non-Allness; or (3) Law of Self-Reflexiveness. If a semantic misevaluation is involved, be prepared to explain how or why each misevaluation occurred."			
(Distribute duplicated exercises. When the students have had a chance to complete them, have a class meeting to see whether there is general agreement about the classification. Then discuss how or why misevaluations occurred in items marked (1) or (2).)	examines portrayed situations	detect and investigate	evidence of Non-Identity, Non-Allness, or Self-Reflexivenes and/or evidence o misevaluations in these areas.
Say: "You have all heard the word tragedy. What does it mean to you?" (Discuss.)	listens and responds	discover and interrelate	concepts necessary for completing the fourth activity-- synthesis.
"Events occur in the animal, non-verbal world that are unfortunate or very sad. But it is only in the human, verbal world that tragedy in the strictest sense of the word--true semantic tragedy--can occur.			
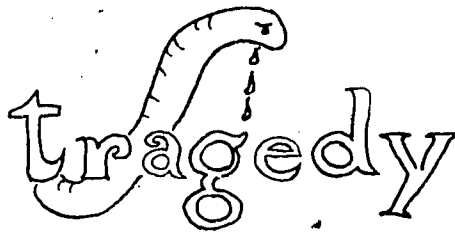
385

Do you feel a little confused at this point? Okay. Let me illustrate. No cat or dog ever committed suicide because its reputation was ruined by malicious gossip. No horse risked damnation or self-destruction through desperate acts to obtain the crown. Can you think of some more examples of purely human, semantic tragedies?" (Discuss.)

"Write a short story in which the action of the plot is based on a semantic tragedy."

.LUATION:

(Conduct a discussion or debate in which the following questions are considered:

On what basis do we decide what is "bad" and what is "good"?

When we have decided what is "good," how can we encourage it or bring it into being?

What role might improved communication play in bringing about certain beneficial changes?

Recommend a specific change and decide how better language habits might help to bring it about.)

listens, imagines, and discusses	formulate	the idea of tragedy--in the strictest dramatic sense-- as a purely human, semantic event.
composes a short story	develop	a plot whose action is set in motion by a semantic mis-evaluation leading to tragedy.
listens and responds	determine	procedures to be used for the fifth activity-- evaluation.
considers and discusses questions	clarify personal values on	criteria for judging whether something is "bad" or "good".
recommends a change	conclude	how the more responsible, scientific use of language might help to bring about a specific beneficial change

good } bad

Etc.

Inference₃

Inference₂

Inference₁

Label or description

Macroscopic

Microscopic

Submicroscopic
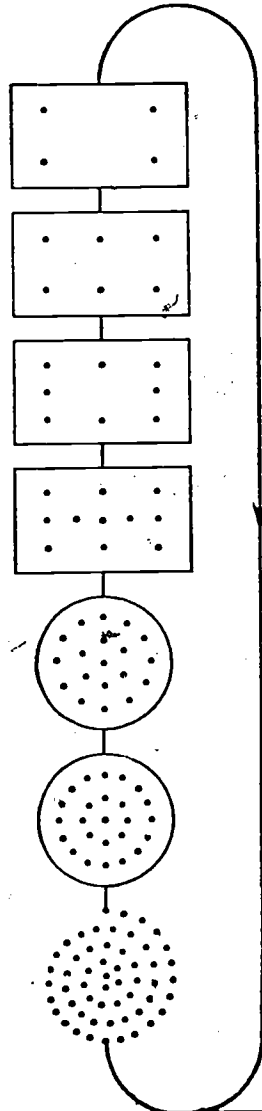
Adapted from Wendell Johnson,
People in Quandries, Copyright
©1947, Harper & Row, Publishers,
Inc. Used with permission by
Harper & Row, Inc. (Adapted from
A. Korzybski, Science and Sanity:
An Introduction to Non-Aristotelian
Systems & General Semantics.
Lancaster, Pa: The Science Press,
rev. ed. 1941.)

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ABSTRACTION LADDER

Start reading from the bottom *UP*

VIII. "wealth"

VIII. The word "wealth" is at an extremely high level of abstraction, omitting *almost* all reference to the characteristics of Bessie.

VII. "asset"

VII. When Bessie is referred to as an "asset," still more of her characteristics are left out.

VI. "farm assets"

VI. When Bessie is included among "farm assets," reference is made only to what she has in common with all other salable items on the farm.

V. "livestock"

V. When Bessie is referred to as "livestock," only those characteristics she has in common with pigs, chickens, goats, etc., are referred to.

IV. "cow"

IV. The word "cow": stands for the characteristics we have abstracted as common to cow₁, cow₂, cow₃ . . . cow... Characteristics peculiar to specific cows are left out.

III. "Bessie"

III. The word "Bessie" (cow₁): this is the *name* we give to the object of perception of level II. The name *is not* the object; it merely *stands for* the object and omits reference to many of the characteristics of the object.

II.

II. The cow we perceive: not the word, but the object of experience; that which our nervous system abstracts (selects) from the totality that constitutes the process-cow. Many of the characteristics of the process-cow are left out.

I. The cow known to science: ultimately consisting of atoms, electrons, etc., according to present-day scientific inference. Characteristics (represented by circles) are infinite at this level and ever-changing. This is the *process level*.

Given an introduction to Non-Aristotelian General Semantics, the student will gain familiarity with three basic premises--the laws of Non-Identity, Non-Allness, and Self-Reflexiveness--and will demonstrate that he/she is becoming aware of their possible applications in human affairs.
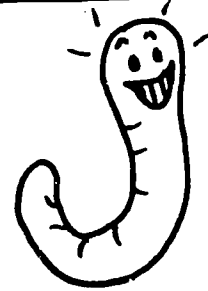
THE BIG NON-A: ANALYSIS ACTIVITY

_____1. The radio Comedian, Bob Burns, once told about his uncle's
         invention...which consisted of a spot remover for removing
         spots left by spot removers.

_____2. There's one reason, and only one, for Wilbur's misbehavior!

_____3. Radio listeners fled cities in panic after Orson Welles
         broadcast an "eye-witness report" of an attack by Martians.

_____4. When Galileo claimed that the sun, rather than the earth, was
         the center of our universe, he was severely persecuted.

_____5. A discussion ended with no agreement reached. Both sides in
         the controversy had the attitude, "That is all there is to be
         said on the subject."

_____6. A man went berserk, shooting strangers in the street because,
         "They were trying to get me."

_____7. A magazine cartoon showed two camera fans pointing their cameras
         at each other, one camera fan taking a picture of the other
         camera fan taking a picture of the first camera fan taking a
         picture of the second camera fan taking a picture, etc., etc.

_____8. I know everything there is to know about modern art, and I
         still don't like it!

_____9. Bob Hope commented one time upon the remarkable new automobile
         models: In order to operate them, all you had to do was to
         push a button that pushed a button.

_____10. Men working near "empty" gasoline drums carelessly threw down
         half-snuffed cigarette butts. This led to an ignited-vapor
         explosion which resulted in several casualties and caused
         thousands of dollars in damage.

_____11. I don't know what to do with that child! I've already tried
         everything, and nothing works!

_____12. Professor Josiah Royce of Harvard described the ideal map: If
         you are making a map of a territory that is to cover everything
         in the territory, it must include you and the map you are
         making since, of course, you and your map are in the territory
         you are mapping!

DESCRIPTION

Developed by: Susan Sager

Concept/Competency

COMMUNICATING
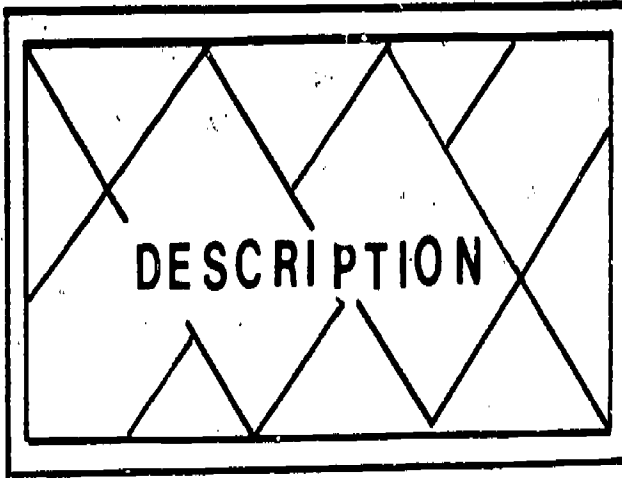
Of the several processes of communication -- description, narration, exposition, argumentation -- description is most concerned with figural content and spatial order.

LEVEL 1 - 6   TIME 3 30-minute periods

ENTRY CONCEPTS:	**MATERIALS:**
We use our five senses -- sight, hearing, touch, taste, and smell -- to gather impressions of our world. We can share these impressions with others through the process of description.	Large art prints with a variety of subjects and styles; materials for drawing, painting and writing.

(left margin: EFFECTIVENESS)

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	

(left margin: INTELLECTUAL)

(left margin: COGNITIVE:)

INTRODUCTION:
(Show one or more large art prints to the class -- non-objective painting, portrait, landscape with buildings, etc.) Ask, "What do you see?" (Allow free comment.)

LESSON DEVELOPMENT:

1. Ask: "What is touching the top of this print? the bottom? the left side, as you see it?"

The student:	In order to:	Learnings:
looks at art prints	identify	content of the compositions.
examines art prints	become aware of	spatial arrangement of their content.

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The right side? What is in the exact center?
As you go from top to bottom, what do you see?
As you·go from left to right, what do you see?"

Say: "If you wished to <u>describe</u> a face, how would you do it in an <u>orderly</u> way? What would you describe first? How would you go about describing a human figure? a room? a house?"
(As various students respond, keep them aware of the idea of <u>order</u>.)

Say: "Let's analyze: What <u>kind</u> of order are we dealing with when we <u>describe</u> something? What are we concerned with?"

(the arrangement of things within a certain <u>space</u>)

"What might we <u>call</u> this kind of order?

(space order -- <u>spatial order</u>)

What orderly sequences might you use to describe something in space?"

(top to bottom, left to right, inside to outside, center to perimeter, etc.)

Describing -
top to bottom
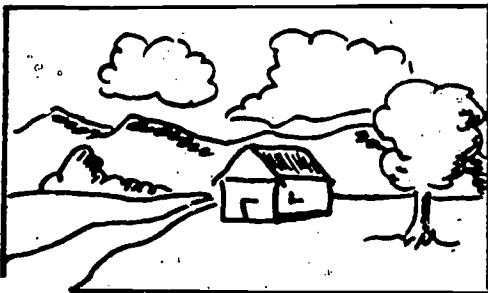
views content of art print in various sequences.	recognize	ordered arrange- ment of objects on the picture plane.
applies new awareness of ordered arrangement of forms	determine	appropriate sequences for describing different·kinds of figural content.
ponders the question	isolate	significant ·elements involved in the process of description.
thinks critically	distinguish	a number of possible ordered sequences for describing the arrangement of forms in space.

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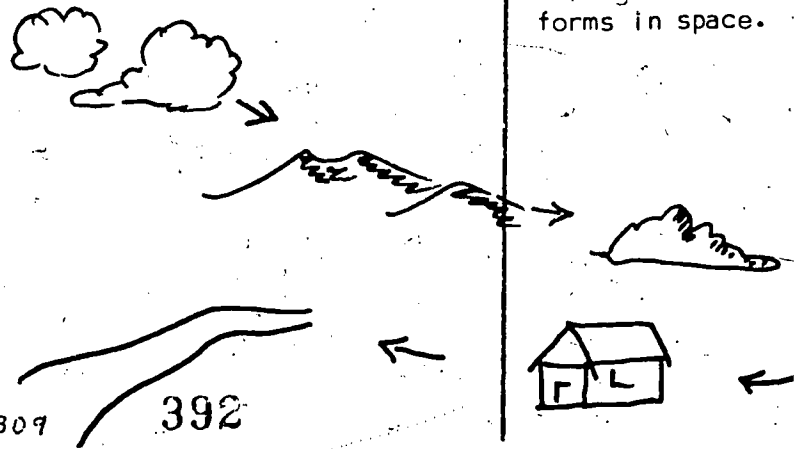
Say: "When you draw a picture, you are dealing with a space called a <u>picture plane</u>. How might you plan and organize your picture to fit your picture plane? What things will you consider? In what order?"

(whole composition, major forms, details)

. (After discussion, provide the students the opportunity to plan and create their own compositions.)

ALUATION:

(Invite various students to describe something, in the classroom, orally or in writing. The rest of the students will see if they can identify what has been described.

Have the class evaluate the descriptions for clarity, adequacy, and correct spatial order.)
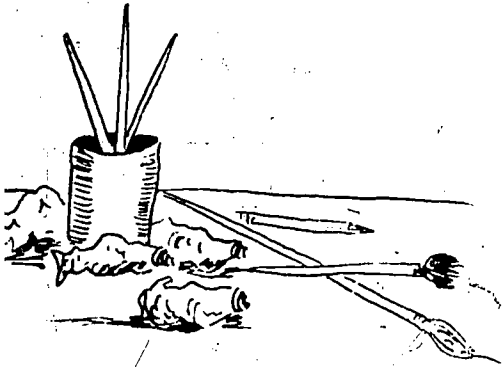
plans a composition	synthesize	concepts and generalizations about spatial order and the process of description.
creates an original painting	develop in tangible form	ideas about spatial organization and description.
describes something	demonstrate	the ability to formulate a description that is parallel in structure to th thing described that is, a description that i an accurate "ma of the "territo it describes.

Given guided experience in viewing art prints, the student will become aware of the spatial ordering of figural content, and will develop the ability to describe what he/she perceives in a clear and ordered manner.

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EXPOSITION

Developed by Susan Sager

Exposition explains:

(1) how a process works;
(2) why a phenomenon occurs.

It is related to the scientific method.

LEVEL   1 - 6   TIME   2 or more 45-min per.

ENTRY CONCEPTS:

When we explain something in words, we need to organize what we say so that our message will communicate clearly and understandably.

MATERIALS:

Candle in heavy holder, pan of water, large wide-mouthed jar, matches, measuring devices, chalkboard and chalk; materials for writing and drawing

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INTELLECTUAL EFFECTIVENESS

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:		LEARNINGS:
	The student:	In order to:	

COGNITIVE:

INTRODUCTION:

(Perform the following demonstration: Without explanation, set up a candlestick in a pan of water. Light the candle. Carefully invert a large jar and place it over the lighted candle. Wait until the candle goes out and the water level rises in the jar. Invite free comment.)

LESSON DEVELOPMENT:

1. Ask: "What did I do?
   What happened as a result?
   Report only exactly what you saw.
   Does everyone agree on exactly what happened?

| observes | identify | the steps taken in performing the demonstration and the results obtained. |
| recalls the demonstration | report | exactly what was done and what happened. |

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Now. Can anyone explain this <u>phenomenon</u>? Let's repeat the process and see if the same result occurs a second time. What should we do to check carefully or measure exactly what happens?" (Repeat demonstration experiment.)	draws inferences suggests controls	try to determine help replicate	the meaning of what happened. the results of the experiment.
Say: "Do you need to <u>revise</u> your explanation? The process of explaining is called <u>exposition</u>. A <u>tentative</u> explanation of a <u>natural</u> <u>phenomenon</u>--something that appears to occur in a regular, predictable way in nature--is called a hypothesis. You have explained <u>how</u> this demonstration was performed and what happened as a result.	listens	grasp the meaning of	the terms: exposition revise tentative natural phenomenon hypothesis.
Who has a hypothesis that attempts to explain <u>why</u> the candle went out and the water level rose?" (Accept all hypotheses without evaluating them at this time.)	revises hypothesis	explain more satisfactor- ily	the observed phenomenon.
?. Say: "Now let's apply what you have learned. See if you can think of a good hypothesis tentatively to explain some- thing you see happening every day. Examples: 1) Why does the sun 'rise' in the east and 'set' in the west? 2) Why do people walk on the ground instead of floating above it? 3) Why does water boil when it gets very hot and freeze when it gets very cold?"	recalls life experiences	become aware of	other natural phenomena that might be explained.

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(Have students choose one phenomenon to think about. Accept all hypotheses without attempting to evaluate them at this time.)

hypothesizes about why given natural events occur

apply

newly-gained knowledge of the process of exposition.
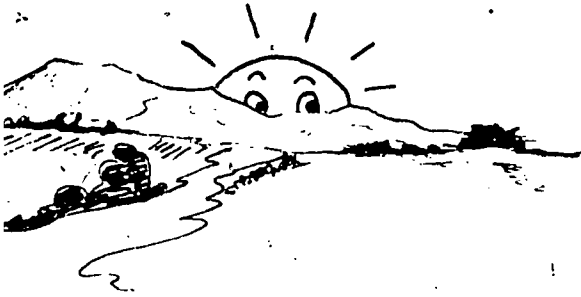
At a subsequent session, say: "Expositon explains how -- how to perform a certain task, for example. Or exposition explains why -- why a certain natural phenomenon occurs, for example. Now, the process of explaining can get very mixed up and confusing unless it is done in an orderly way.

listens

review
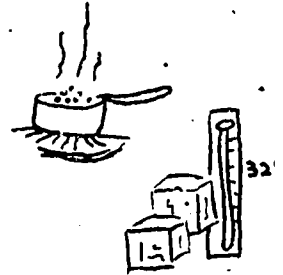
the purposes of exposition: (1) to explain how a process works (2) to explain why a phenomenon occurs.

So, let's analyze the process..... break it down into its separate steps and see how it works."

(Elicit a process akin to the scientific method.)

analyzes the process of exposition

identify

the steps used in the scientific method.

	organizes his/her information	compose (in words or pictures)	(1) a process theme (2) A phenomenon treatise.

(Ask the students to choose one of the following:

(1) Explain a process you are familiar with (Example: How to tie a pair of shoelaces).
(2) Explain a phenomenon you understand (Example: Why ripples form when a rock is dropped in a pond).

Suggest that students use numbered sentences or a comic-strip type series of pictures to explain their process, or a short essay or some kind of diagram to explain their phenomenon. Have them pretend that their audience knows absolutely nothing about their topic! They must be sure that their explanation is completely clear and understandable.)

\LUATION:

(Display students' expository work. Have students evaluate it for clarity and completeness.)

	considers work produced by the class	judge what characterizes	effective exposition.

Given the opportunity to observe a demonstration, (1) identify the steps in the process, and (2) hypothesize about the meaning of the phenomenon, the student will work out the steps of the scientific method and will be able to share his/her understanding of the "how" of processes and the "why" of phenomena through effective exposition.

SCIENTIFIC METHOD

1. Observe

2. Make theory or hypothesis

3. Experiment and gather
   evidence

4. Interpret and make
   conclusion

5. Test conclusion

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Several Kinds of Truth

Developed by: Susan Sager

We can save much confusion and many futile arguments when we recognize that there are four kinds of truth and distinct ways of knowing each kind.

LEVEL 3 - 6   TIME 2 45-min. periods

INTELLECTUAL EFFECTIVENESS	

ENTRY CONCEPTS:

Sometimes it is relatively easy to settle a dispute about the truth of a given statement; but in other cases, it seems impossible to get everyone to agree.

MATERIALS: Chalkboard, chalk
Duplicated exercises
Scratch paper
Pencils

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS:	LEARNINGS:
	The student: In order to:	

COGNITIVE:

INTRODUCTION:

Say: "Even in your short lives, all of you have had many arguments about 'the truth'. Right? Did you know that great thinkers have been arguing about what 'truth' is for thousands of years?

Today we are going to try some activities which may help you to gain some new insights about truth. To begin with, we will get some idea of what we already know about this by taking truth as the topic for our class meeting.
Circle up, everyone.

ENABLING BEHAVIORS	LEARNINGS
listens identify	the subject of the lesson and some of the problems surrounding it.

LESSON DEVELOPMENT:

1. (Conduct a Glasser-type open ended
    discussion while seated in a circle.
    As discussion leader, make no value
    judgments but lead the students to
    think by the use of chain questioning:
    follow every response not with an answer
    but with yet another related question,
    somewhat in the manner of Socrates.

    Questions might be similar to the
    following:

    1) Why do people often argue about what
       is true?
    2) What is "truth"?
    3) How do we determine whether or not
       something is true?
    4) Is there more than one way that
       something can be true?
    5) Is there more than one kind of
       "truth"?

    As the students here are dealing with--
    and confusing--several levels of ab-
    straction and several different phenomena
    under the single label of truth, the
    discussion should be lively, heated,
    and rather incoherent.

    After about ten minutes, suspend the
    meeting and have the students return
    to their regular seats and face the
    board.)

discusses   determine   the group's general
                                      knowledge concerning
                                      the abstract concept
                                      truth.

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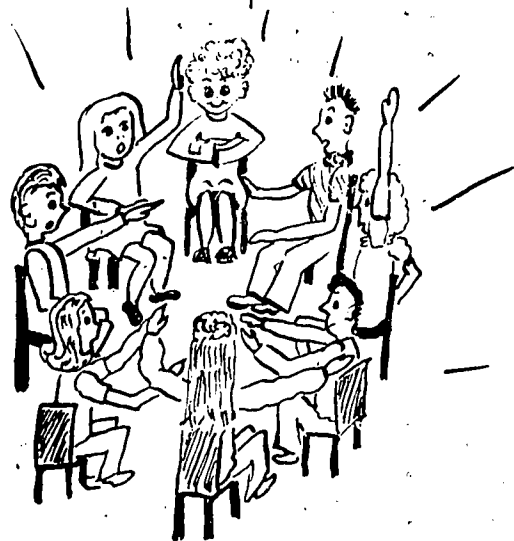
Say: "We aren't likely to settle anything this way, so let's try another approach. See if you can apply your knowledge of truth to some 'true' statements that I am going to write on the board."

(On the left-hand side of the chalkboard, write:

1) She really loves me.
2) Columbus discovered America.
3) Two times five is ten.
4) Water freezes at 32⁰ F. (0⁰ C.) and boils at 212⁰ F. (100⁰ C.).)

Read all four statements aloud and ask: "Can all of these statements be considered true? Are they all true in the same way?

Instead of trying to explain why just now, think of some more statements, from your own previous learning and experience, that could be considered true in the same ways that these are true."

(Spaced out across the board, write number headings for the categories 1), 2), 3), 4). Elicit sample "true" statements from the students and list each one under the numbered heading where it seems to belong. Continue until there are two sample statements under each heading.)

listens   determine

considers   judge

collects   organize
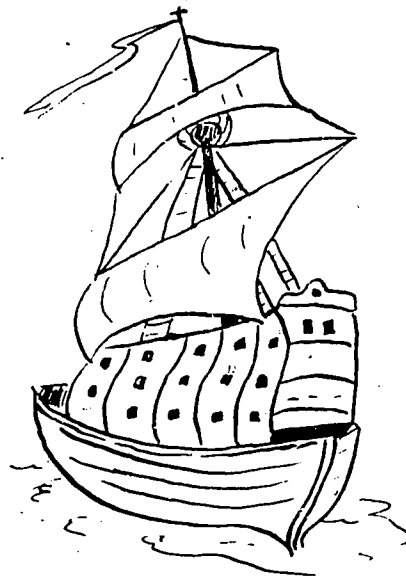
the process to be us during the second phase of the lesson.

whether all four statements are true and whether they are true in the same way.

sample true statements of several kinds drawn from previous experience.

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Say: "Examine again my sample statements and yours. How are they alike? different? Think of some more examples. This time I am going to ask you how to categorize them."	examines	categorize	examples of several kinds of true state- ments.
(As a student volunteers a statement, have him also categorize it. Ask the rest of the group whether it is correctly categorized.)	produces	analyze	several kinds of true statements.
When there are a total of three or four statements in each category, ask: "What do all the statements in Class (1) have in common?	analyzes	isolate	characteristics common to the statements in Class (1
By what means do you know that such statements are true? Who has a word that can differentiate our way of knowing this kind of truth from other ways of knowing? (Elicit a number of descriptive synonyms that might serve accurately to label this category of truth.) Summing up, say: "We might call this kind of truth intuitional truth because we can only know it through hunches, revelations, or intuitions."	generalizes	discover	a suitable descriptive label for the kind of truth exemplified by the statements in Class (1).
Write category label above column (1). Continue in this same manner with each of the next three categories. Elicit information and descriptive synonyms about each one in turn and, finally, provide a label for it: (1) institutional	analyzes	isolate	common character- istics of statements in Classes 2, 3, 4.

(2) testimonial truth
    (3) mathematical truth
    (4) experimental truth)
	generalizes	discover	suitable descriptive labels for the kinds of truth exemplified by statements in Classes 2, 3, 4.

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"I'm going to divide the class into four groups. We will have a drawing, and each group will draw a slip that has the name of one kind of truth on it.	listens	determine	procedures and possible activities to be used during the creative phase of the lesson.
Later on, each group can get together and devise some kind of entertainment for the class dealing with your kind of truth. You may want to put on a skit, compose a poem or a song, or conduct a debate."	improvises	originate	skits, poems, songs, or debates illustrating four kinds o' truth.

'ALUATION:

(To give practive in distinguishing among several kinds of truth, duplicate an exercise adapted from that in Myers, pp. 179-180. Read instructions aloud and discuss. Read each sentence aloud and give students time to mark it I (intuition), T (testimony), M (mathematics), E (experimentation), and/or X if debatable or untrue.	appraises	decide	whether given statements illustrate intuitional, testimonial, mathematical or experimental truth
Afterwards, have students tell why they marked each sentence as they did.	presents evidence	defend	his own evaluations.

Given the opportunity to recognize his own concepts about truth; provide examples of true statements from his life experience; analyze and categorize different kinds of true statements; utilize his new knowledge in creative activities; and accurately distinguish and evaluate given true statements, the student will deal appropriately with communications involving different kinds of truth.

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EVALUATION EXERCISE

1. My son would never tell a lie.
2. The defendant was seen leaving the bank, carrying a canvas bag in his left hand.
3. When you kick our television set, it comes on strong.
4. If we have estimated the mass of the sun correctly, and estimated the rate of its burning accurately, we might predict that the lights will go out in about ten billion years.
5. The Sophomore Sensation scored 29 points per game this year and made 90 per cent of his free throws.
6. Since I've been through the same experience, I know how you feel.
7. The Sound of Music won several awards that year.
8. Tea is better than coffee.
9. In WWII, the Allies landed in France on D-Day, June 6, 1944.
10. Something tells me that this is going to be my lucky day.
11. If your room is 12 feet wide and 16 feet long, you'd better buy at least 192 pieces of 12-inch floor tile.
12. Aspirin is known as an aid in lowering the body temperature of a person who is feverish.
13. The reason why I am able to hit so many home runs is that I wear these beautiful argyle sox that cost only 89 cents a pair.
14. In my oven it would be best to cook that bird about 20 minutes per pound.
15. I know he's a two-time loser with a record for safe-cracking, but I feel that Mr. Blackheart is a man I can trust.
16. Six times 9 is 54, that is, in a base-10 number system.
17. The satellite was observed as it passed overhead last night.
18. You can be immunized against measles.
19. The safest landing speed for that plane under normal conditions is 150 knots.
20. Prices on the stock market in the United States fell rather drastically in 1929.
21. Those were undoubtedly the best lamb chops in the whole world.
22. If we can maintain this speed, we should be in Los Angeles before 10 P.M.
23. Air occupies space and has weight.
24. With you by my side, there's nothing in this world I cannot accomplish.
25. If it follows the pattern of past performance, that clock will run down in 7 hours and 43 minutes.

— REPORTS —

—INFERENCES —

—VALUE JUDGMENTS—

Reports, inferences, and value judgments all have their place in human communication. But communication is much clearer -- and misunderstandings are far less likely -- when we can distinguish among the three.

Developed by: Susan Sager   **LEVEL** _3 - 6_   **TIME** _4 30-min. periods_

INTELLECTUAL EFFECTIVENESS

ENTRY CONCEPTS:
After witnessing any given situation, two or more onlookers are likely to <u>disagree</u> about what "actually" happened.

MATERIALS:
Any large, interesting photograph or drawing depicting some human activity or situation; Chalk, chalkboard; pencils, paper

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COGNITIVE:

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS:		**LEARNINGS:**
	The student:	In order to:	
INTRODUCTION: (Display the picture selected for the lesson. Ask the students to examine it silently for a few moments and speculate about what might be happening.	observes	determine	what might be "happening" in a displayed picture.
Spaced well apart, write three headings on the board: Reports, Inferences, Value Judgments.) Say: "If you were writing a news story about this scene or giving evidence in court, you would have to limit yourself to <u>reporting</u> only what you could actually see....reporting just the facts.	listens	determine	the meaning of the terms reports, inferences, and value judgments and the necessity of being able to <u>distinguish</u> among them.

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'ou could not <u>guess</u> about what was happening
or <u>why</u>....that's called an <u>inference</u>.'

And you could not indicate whether you thought
it was <u>right</u> or <u>wrong</u>, good or bad....that's
called a <u>value judgment</u>.

Inferences and value judgments are important
and necessary. But they do not belong in a
news story or in court testimony, which calls
strictly for the <u>reporting</u> of pure <u>facts</u>."

LESSON DEVELOPMENT:.

Ask: "Can you make a statement about what you see here that is purely a report?"	states	demonstrate	examples of <u>reports</u> about the displayed picture.
(As statements are given, have the class determine whether or not they are <u>reports</u>.)	examines	distinguish	<u>reports</u> from statements that are <u>not</u> reports.
Ask leading questions such as:			
"Can you actually <u>see</u> that? Did you have to <u>guess</u> about that? Did you <u>weigh</u> that against your system of values?"			
(Continue until several <u>report</u> statements have been passed upon and listed.			
Go through the same procedure, this time listing inferences.	states	demonstrate	examples of <u>inferences</u> about the displayed picture.
Have the class decide, as they are elicited, whether each statement is an <u>inference</u>.	examines	distinguish	<u>inferences</u> from statements that are <u>not</u> inferences

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Elicit several value judgments, some positive, some negative.	states	demonstrate	examples of positive and negative value judgments about the display picture.
Again, have the class decide whether each is correctly classified.)	examines	distinguish	value judgments from statements that are not value judgments
2. (Ask two students to pantomime an incident, using much action and expression.	pantomimes	perform	an incident.
Ask another student to tell, as pure report, what he saw. Discuss.	describes	demonstrate	pure factual report.
Ask a second student to describe the same incident again, this time including inferences and value judgments. Discuss.)	describes	demonstrate	report colored by inferences and value judgments.
(Ask the students to think of an incident they have observed personally -- or to invent an incident. Ask them to write two versions of the same incident: one paragraph which is pure report -- "just the facts, man" -- and a second para-graph which includes plenty of inferences and value judgments along with telling "what happened."	composes	demonstrate	the distinction between pure factual report and report colored by inferences and value judgments.
Ask volunteers to read their two paragraphs for the class to compare and contrast -- as description which is pure report and as description which is colored by inferences and value judgments. Is there sufficient difference in the telling of the two versions?	listens	compare and contrast	examples of report and report colored by inferences and value judgments.

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1. Ask the students to draw very interesting provocative pictures.	draws	create	ap Interesting provacative picture.
Each student then gives the picture to a partner, who writes down the wildest, funniest, most far-out speculations that he can think of about the situation pictured.	composes	produce	a wild, funny story making outrageous Inferences about a pictured situation.

EVALUATION:

1. Allow the students to conduct a mock trial. For example, Hansel or Gretel could be tried for the murder of the witch. Judge, jury, lawyers, and onlookers all should be careful to distinguish true reports (and pseudo reports) from Inferences and value judgments in the statements of defendant and witnesses.	conducts a trial	use what he has learned about	reports versus Inferences and value judgments.
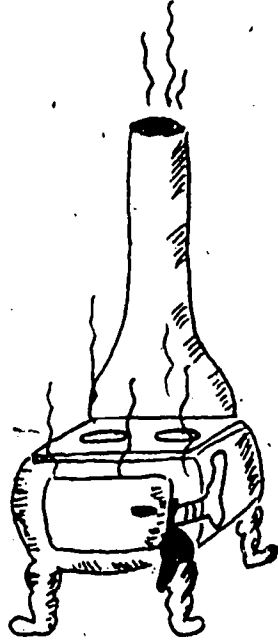
411

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(Sample of cartoon for display.)

Given an opportunity to
recognize, formulate, and
use reports, inferences, and
value judgments, the student
will demonstrate the ability
to distinguish among them and
recognize the importance of doing so.

SILENT SPAGHETTI

Developed by: *Carole Draper*

Concept/Competency

BASIC CREATIVITY: FLUENCY

Items which have special characteristics can be compared with other items of similar characteristics.

LEVEL **K - 6**   TIME **15 - 20 minutes**

ENTRY CONCEPTS:	MATERIALS:
--The ability to elaborate	Paper & pencil or Tape recorder

CREATIVITY

TEACHER TASKS:	STUDENT		
	ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:

COGNITIVE:

TEACHER TASKS:	ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
INTRODUCTION: The teacher will display a piece of uncooked spaghetti for the students to see. OR...the teacher may give each child a piece of uncooked spaghetti to examine. She will ask the students to describe the spaghetti. During the discussion, the students will hopefully use the terms <u>long</u> and <u>thin</u>. **LESSON DEVELOPMENT:** 1. The teacher will then ask the students to list or record all those things they can think of that are long and thin.	observes lists writes records	describe describe & elaborate	spaghetti. on those things that are long and thin.
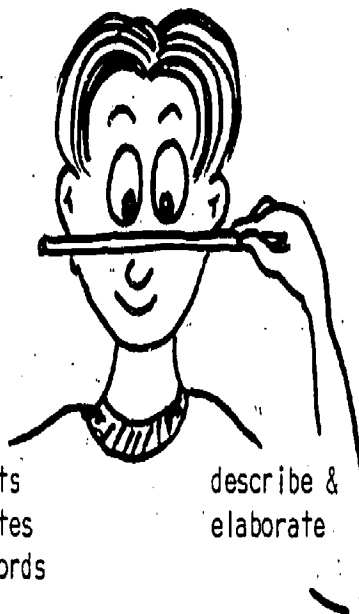
414   328   415

CREATIVITY

The man who follows the crowd, will usually get no further than the crowd. The man who walks alone is likely to find himself in places no one has ever been before.

Creativity in living is not without its attendant difficulties, for peculiarity breeds contempt. And the unfortunate thing about being ahead of your time is that when people finally realize you were right, they'll say it was obvious all along.

You have two choices in life: you can dissolve into the mainstream, or you can be distinct. To be distinct, you must be different. To be different, you must strive to be what no one else but you can be...

Alan Ashley-Pitt

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EVALUATION:

The teacher and students will discuss and compare their thoughts and ideas.

Why do you think these things are long and thin?

Would the function be the same if they were short and fat?

Given an example of something which is long and thin, the student will be able to list as many items as he can which are also long and thin.

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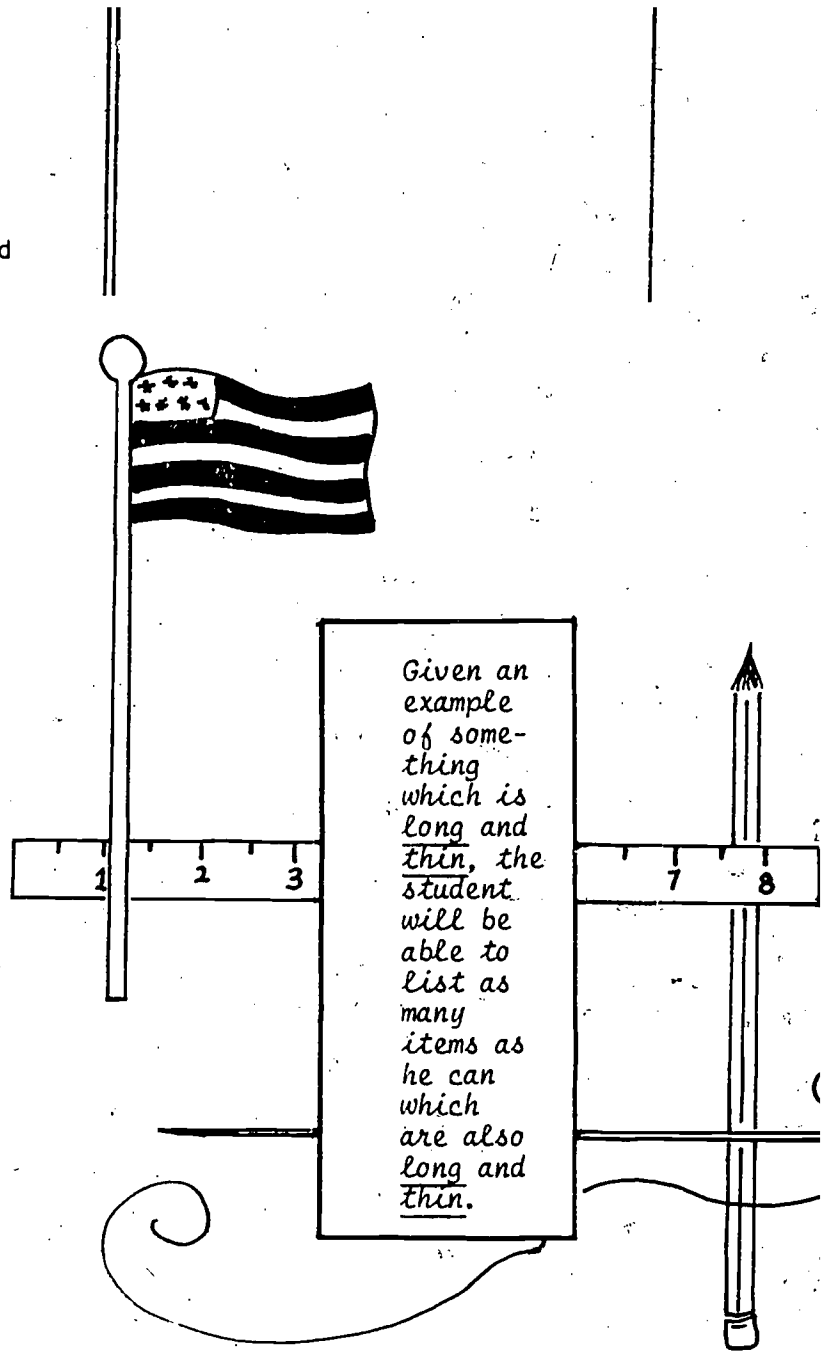
MARSHMALLOW MADNESS

BASIC CREATIVITY: ORIGINALITY

The unusual does occur within the ordinary.

_D___ _____ _____ ____ ____

| LEVEL | Primary | TIME | 30 - 45 minutes |

ENTRY CONCEPTS:	MATERIALS:
--The ability to look carefully --The ability to write in alliterative form	1 marshmallow per child (or any other food you may want to use) Paper Pencil

	TEACHER TASKS:	STUDENT	
		ENABLING BEHAVIORS:	LEARNINGS:
CREATIVITY		The student: In order to:	

COGNITIVE:

INTRODUCTION:

The teacher will ask each child to take a
marshmallow.

The teacher will tell the child he may do
whatever he wants with the marshmallow---
smell it, taste it, squeeze it, shake it,
pinch it.

The teacher will then ask the child what
it reminds him of.

LESSON DEVELOPMENT:

1. The teacher will have the student write
a brief description of the marshmallow.

ENABLING BEHAVIORS: The student:	In order to:	LEARNINGS:
writes states	describe analyze	the character- istics of a marshmallow.

	writes reports	describe comprehend	the application of symbolic patterns.
The teacher will have the student write or tell a story or poem in alliterative form. EXAMPLE: Marshmallow Madness makes me mean.			
The teacher will have the student create a dreaded, new disease for which they must devise a cure.	creates designs	synthesize improvise develop	uncommon uses for common item.

'ALUATION:

ie students will be able to elaborate on any
opic presented to them.
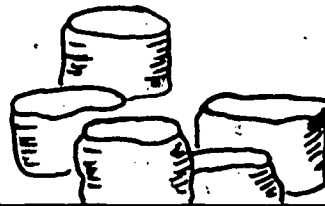
> The student will develop a more sensitive awareness of the commonplace and discover that he can elaborate on the uniqueness of such common items.
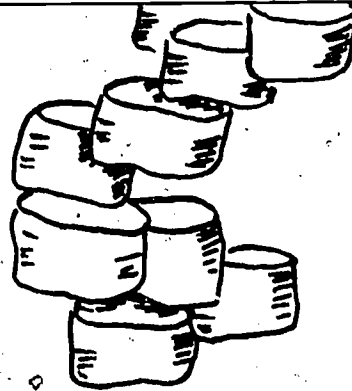
331420

Concept/Competency

Developed by: Carole Draper   LEVEL K - 6   TIME 1 hour

ENTRY CONCEPTS:

--The ability to combine materials
--The ability to construct

MATERIALS: Magnet, can opener, clothes pin, sponge, baseball bat, tennis racquet, marbles, key chain, bottle cap, spool of thread, 5 forks, peanuts, box of hair pins, a shovel, toothbrush, screw, box

---

CREATIVITY

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:		LEARNINGS:
The student:	In order to:	

COGNITIVE:

INTRODUCTION: The teacher sets the stage by telling the children they are "to imagine they are a night watchman working in a warehouse. You have a lot of time to kill and you're bored. You then notice a big box of assorted articles brought in after a rummage sale."

LESSON DEVELOPMENT:

(1) The teacher asks the students to sort through the box.

uncovers	analyze	various objects.
sorts through	examine	

421

332

422

(2) The students are to combine these objects,   constructs   synthesize   these objects into
     or their parts, in any manner they choose   a new item.
     in order to create a new item.

EVALUATION:

The teacher and children can conduct a
"fair" in which their objects can be
displayed.

Given many and varied objects,
the student will create a
brand new item.

Concept/Competency

THIMBLE THOUGHTS

Developed by: Carole Draper   LEVEL   K - 6   TIME   15 minutes
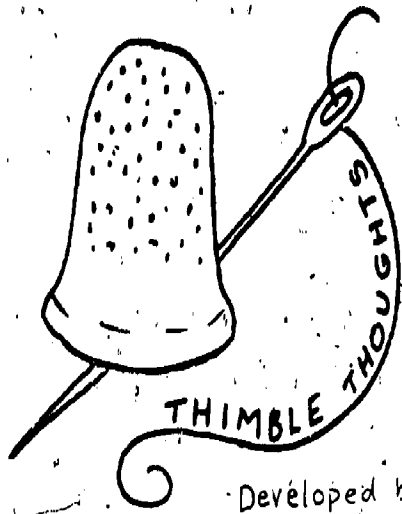
COMMUNICATION: FLUENCY

Thought processes can be expanded by elaborating on the usefulness of a simple object.

ENTRY CONCEPTS:

--Ability to verbalize ideas

MATERIALS: A thimble (or any other small object)

CREATIVITY

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS:	LEARNINGS:
	The student: In order to:	

COGNITIVE:

INTRODUCTION:

The teacher displays a thimble and asks the questions: "What kinds of uses can you think of for this thimble?"

LESSON DEVELOPMENT:

The teacher has the student write down as many ideas as he can think of which describe the uses of a thimble. If the student is unable to write he may verbalize his ideas.

writes	list and	unusual uses
verbalizes	formulate	for an object.
describes		
elaborates		

124   334   425

Timble Thoughts

/ALUATION:

he students and teacher will discuss those
ays in which a thimble can be used. The
tudent may wish to draw or construct
ifferent ways the thimble can be used.

HAT

WASTEBASKET

FLOWERPOT

JEWELRY

BOAT
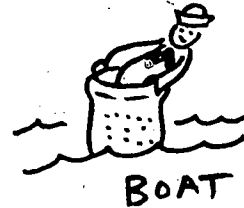
The child will be able to
enumerate many uses of a
thimble (or other object)
in order to strengthen and
expand his imagination.

COOKIE
CUTTER

426

335
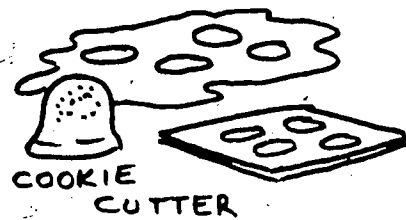
Conclusions can be drawn from unusual situations.

What — if .....?

Developed by: Carole Draper
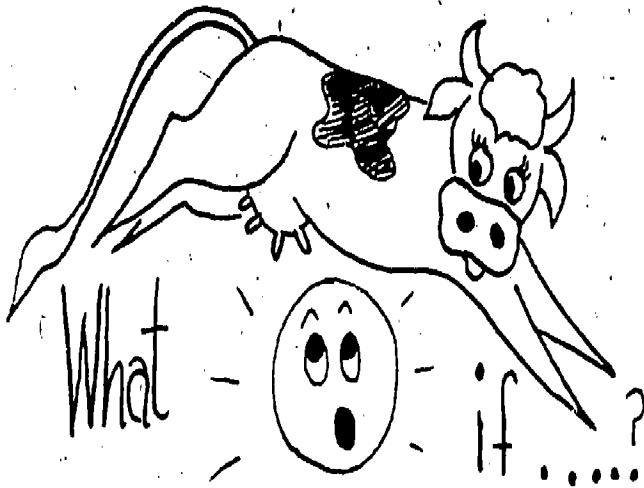
LEVEL K - 6   **TIME** 30 minutes

ENTRY CONCEPTS:	**MATERIALS:** Pencil and paper or Tape recorder
--The ability to image effects	

CREATIVITY	**TEACHER TASKS:**	**STUDENT**	
		ENABLING BEHAVIORS: The student: In order to:	**LEARNINGS:**
COGNITIVE:	INTRODUCTION: The teacher will display a picture of an unusual occurrance, such as the cow jumping over the moon, or the earth as a different shape. The teacher will encourage discussion concerning the consequences of a jumping or flying cow and/or the differently shaped earth. LESSON DEVELOPMENT: 1. The teacher will describe an unusual situation by the use of pictures, recordings or verbalizations.	listens absorbs notices hear and interpret	the basic elements of the story.

420

3.36

These situations may include: What if
    elephants were the size of a dog?
    What if everyone's hair turned orange?
    What if there was no more sunlight?
    What if the earth were square as a cube?
    What if all the oceans dried up?
    What if......?

2. The teacher will ask the child to
    determine what might be the consequences
    of such a situation.

EVALUATION:

The teacher and students will contrast
the situations with the consequences
concluded by the students.

Which of these situations you have
described would be the most frightening?
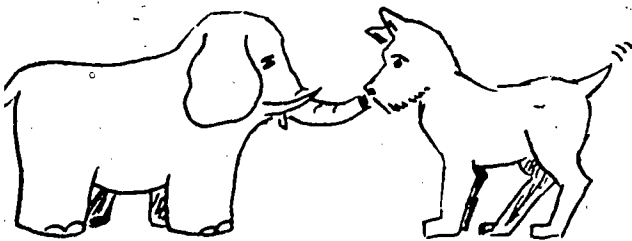
Which do you think would be the funniest?

list   explain
write   and
talk   conclude
discuss
conclude

that certain
situations will
determine certa
consequences
(cause & effect
relationship).

The student will be able to
interpret a given story and
make inferences to its
meaning.

Concept/Competency

DECISION MAKING

An individual's ideas can be expressed in numerous ways if given the opportunity.
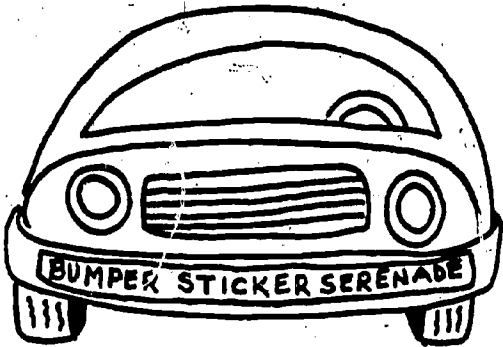
Developed by: Carole Draper

LEVEL ___4 - 6___ TIME ___45 minutes___

ENTRY CONCEPTS:	MATERIALS:
--The ability to write --The ability to express one's ideas	Scratch paper Adhesive back paper or strips Crayons Colored pencils Marking pens

TEACHER TASKS:	STUDENT	
	ENABLING BEHAVIORS: The student: In order to:	**LEARNINGS:**
INTRODUCTION: The teacher will ask the students if they can recall any bumper sticker sayings that they have seen. After discussion the teacher will tell the students they are going to make their own bumper stickers. First, she needs to set up some guidelines for the children to follow: (1) The sticker must be easily read. (2) The motto must be one your parents would allow on their car.	recalls make	own bumper stickers.

430

338

431

LESSON DEVELOPMENT:

1. The teacher will then have the student make a rough-draft of his bumper sticker.	creates, illustrates, draws, designs	express and portray	a meaningful idea, slogan, motto.
2. The teacher will have the student copy his rough-draft into final form.	copies	display	his bumper sticker.

EVALUATION:

The students and teacher will look carefully and examine closely the bumper stickers.

Is the sticker easily read?

Would your parents allow these stickers to be placed on their cars?

Which stickers provide the most meaningful messages?

Be CONstructive - Not DEstructive!

Share happiness Not grief

Smile cAwhile

Given the opportunity the student will be able to present his unique ideas and/or create new and different approaches to "old" ideas.

Be nice to a kid - TODAY!

Happiness is learning Something cNew!

432

3 27

SEARCHING

AND

SHARING

Developed by: Susan Sager

INDEPENDENT STUDY

Before we set out to do research, it is important to have an adequate Plan for Independent Study in which we list our topic, big question, little questions, sources of information, and reporting activities for presenting the results of our study.

LEVEL __3 - 6__   TIME __4 30-min. periods__

ENTRY CONCEPTS:	MATERIALS:
--experience in using the library to seek information --experience in giving short oral reports	Duplicated copies of the 5-page booklet, <u>Searching and Sharing</u>; Duplicated copies of the 2-page model, <u>Plan for Independent Study;</u> 12" x 18" sheets of oak tag for student folders; Chalkboard, chalk, writing paper, pencils

---

(left margin vertical: CREATIVITY)

(left margin vertical: COGNITIVE:)

TEACHER TASKS:	STUDENT		
		ENABLING BEHAVIORS: The student: In order to:	LEARNINGS:
INTRODUCTION: Tell the students that you are going to introduce them to a five-page guide that will show them useful ways to <u>search</u> for information on a subject that <u>interests</u> them...and then <u>share</u> their findings with classmates in ways that they will enjoy.	listens	determine that	the purpose of the lesson is to show ways to <u>search</u> for information and <u>share</u> it with others.
LESSON DEVELOPMENT: 1. Distribute copies of the five-page booklet <u>Searching and Sharing: A Guide to Independent Study.</u>	observes	learn that	the name of the five-page guide is <u>Searching and Sharing: A Guide to Independent Study.</u>

340

434

Read aloud each page to the students, clarifying each point and allowing time for questions and answers. Explain that the numbers beside the words in the What and How columns on p.4 refer to the operational terms and product terms chosen for use in the sample reporting activities on p. 5.	listens, reads, questions	determine	how to understand and use the Guide.
Provide oak tag folders for the students for filing their guides and additional materials as their independent study progresses. These folders should be with them at all times while they are working on their independent studies.	accepts a folder	have	a place to store research materials in a neat and orderly way.
(Note: On p. 2, the Application level also includes Comprehension--or Translation, Interpretation, and Extrapolation.)			
At another session, distribute copies of the two-page model, Plan for Independent Study.	observes	learn that	the name of the two-page model plan is Plan for Independent Study.
Explain that this is how one person (a teacher) applied the instructions in Searching and Sharing to make an Independent Study Plan for a project of her own. Point out that this model demonstrates the desired form--but is more complex and detailed than most student plans would need to be.	listens	learn that	this model demonstrates the desired form for an Independent Study Plan.

341   435

|			
Read aloud p. 1 of the Plan, clarifying each point and allowing time for questions and answers.	listens, reads, questions	determine	how to understand and use the model Plan.
Point out details of format: centered main title, left-blocked subtitles, spacing, underlining, bibliography form, etc.			
Read aloud p. 2 of the Plan. Lead the students to notice that the "what" operational terms and the "how" product terms are underlined in the reporting activities.	listens and reads	learn that	operational terms and product terms are underlined in the statements listing reporting activities.
Reread, one at a time, each little question from p. 1 followed by its corresponding reporting activity from p. 2. Stress the relationship between them.	listens and reads	notice that	each little question has its corresponding reporting activity.
Emphasize the importance of choosing a reporting activity--for sharing the answer to a little question--that is appropriate for presenting that particular kind of information.	listens	learn	the importance of choosing an appropriate method for sharing each different kind of informatio
For example, a chronology is appropriate for presenting biographical facts. A chart is appropriate for presenting several categories of facts about several different individuals (for example, planets or presidents). And a graph is appropriate for presenting comparative figures from a survey.			
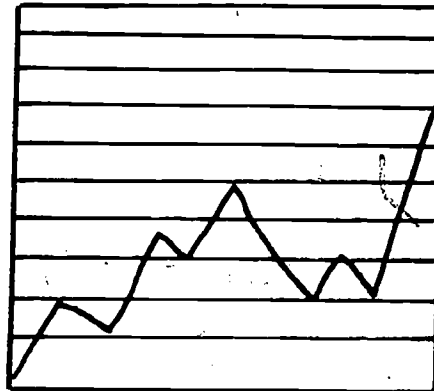
Lead the students to <u>analyze</u> the structure of the statements used in the sample plans for reporting activities in both <u>Searching and Sharing</u>, p. 5, and the model <u>Plan for Independent Study</u>, p.2.

Through careful scrutiny, they will notice that these statements have a two-part structure:

     (1) <u>What</u>:...

     (2) <u>How</u>:...

If the students still seem uncertain after being guided in analyzing the 10 sample statements, give additional samples on the chalkboard for more practice.

When the students seem to have confidence in what they are doing, congratulate them for mastering a tough skill.

Tell the students that they are now probably capable of putting together a good Independent Study Plan for almost any topic in the world! In fact, they can even put together an Independent Study Plan for a "glimpit."

What is a "glimpit"? It can be anything they want it to be...because "glimpit" is a made-up nonsense word.

---

analyzes statements of reporting activities   isolate

(Show)   (This)

by _____ing (This)

practices analyzing more samples   gain

listens   learn that he/she now has

listens   learn that

---

the two-part structure of the statements.

skill in identifying the two-part structure of the statements.
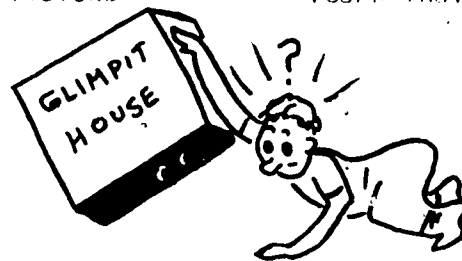
the ability to put together a good Independent Study Plan for almost any topic in the world.

it is even possible to put together an Independent Study Plan for a "glimpit."

Ask the students to decide privately what kind of thing a "glimpit" is. Then each one is to write the best, most interesting "mock" Independent Study Plan he/she can think of to guide him/ her in researching and reporting on the "glimpit"--as if there really was such a thing!	imagines what a "glimpit" is	compose.	an appropriate "mock" Independen Study Plan.

EVALUATION:

|			
5. Have students exchange "mock" Independent Study Plans and evaluate them for form, sentence structure, clarity, variety, and originality.	shares "mock" plan	evaluate and he evaluated regarding	form, sentence structure, clarit variety, originality.
From the type of questions asked and reporting activities planned, ask each of the students to see if he/she can guess what kind of thing his/her partner's "glimpit" is. Have some of the funniest or most original plans read aloud to the group.	hypothesizes	guess	the nature of his/her partner's "glimpit."
With this background, students should be able to go forward confidently to write good "serious" Independent Study Plans.	acquires background and practice	synthesize	skills necessary for putting together "serious Independent Study Plans.

Given instruction in using a 5-page guide,
Searching and Sharing, and a 2-page model,
Plan for Independent Study, the student
will develop and practice skills necessary
for producing his/her own well-organized
Independent Study Plan.

³⁴⁺438
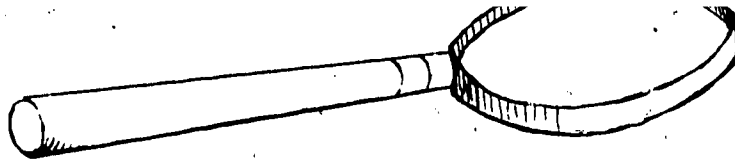
SEARCHING AND SHARING: A GUIDE TO INDEPENDENT STUDY

This booklet is designed to help you study on your own about something that is interesting to you. It will also help you to find different ways to share the results of your study with others.

To study is to <u>search</u>. Before you can begin to search efficiently, you must do two things:
1. Decide what <u>topic</u> you want to investigate.
2. State what you want to know in a <u>big question</u>.

Like a detective solving a crime, you must break this big question--which is usually hard to answer--into smaller parts...
<u>little questions</u> that are easier to handle. The detective asks the

<u>Big</u> Question:
What is the solution to the crime?

But to find out, he must first find answers to the different parts of the puzzle--the

<u>Little</u> Questions:
Where was the crime committed?
When was it committed?
How was it committed?
Who was the victim?
Who was there at the time?
Who were the enemies?
What are the clues at the scene of the crime?

When you know what your big question is--and have decided which little questions will help you to answer it--you are ready to go ahead with your search or study. On the next page you will find an example of a big question and some little questions which could help in answering it.

Getting Ready to Search

Topic: Horses

Big Question:

What is interesting or important to know about horses?

Little Questions:

1. What kinds of horses are there?
2. How are horses related to other animals?
3. What are the parts of a horse?
4. What could be added to the design of a horse to improve it?
5. Which kind of horse is most important, and why?

Of course, these are not all of the little questions that would be helpful in answering the big question. We might ask:

What are the different ways horses are used?
How are horses classified into breeds?
How do horses of today compare with horses of long ago?
How has the automobile affected the horse?
Is the horse more important in some countries
    than it is in others--and why?

However, it is probably better to do a good job of answering five questions than to get quick answers for many questions. So let's go with just five this time.

Incidentally, these questions--with the activities chosen to answer them--are arranged from lower to higher levels in the kinds of thinking required to deal with them:

1. <u>Recall</u> -   Finding out and remembering
        (<u>data</u> level)

2. <u>Application</u> - Understanding and using
        (<u>transfer-of-learning</u> level)

3. <u>Analysis</u> -   Taking apart the known
        (<u>formal reasoning</u> level)

4. <u>Synthesis</u> -   Putting together the new
        (<u>creativity</u> level)

5. <u>Evaluation</u> -   Judging the outcome
        (<u>valuing</u> level)

Evaluation
Synthesis
Analysis
Application
Recall
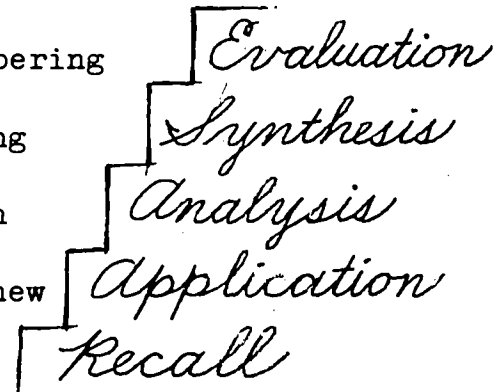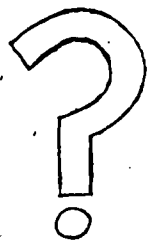
This is a good way to organize your study if you can. But it takes experience to write questions and plan activities at different levels. So don't be concerned if you aren't able to do it this way immediately.

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Now that you have the questions you want to ask, where can you go
to get the help you need in finding answers? Often, of course,
you have to look in books for help. Sometimes it is possible,
and much more fun, to search for information in other ways,
such as by interviewing people who know a great deal about a
particular subject--or even by making an investigation on your own.

For example, possible information sources for the horse project
might look like this:

Information Sources:

1. Your personal memory of what you have observed.
2. Your personal examination of a horse
3. Interviews with horse breeders and horse owners
4. Interview with a veterinarian for large animals
5. Films and filmstrips
6. Study prints of horses
7. Statues or models of horses
8. Printed materials: encyclopedias, books, magazines

There are certainly other sources which could be used to get
information for the study. These are only examples.

So...you now have questions to answer and an idea of where and
how to search for answers. Of course, you will want something to
show when you have finished so that you and your teacher can
make a judgment about what you have done and plan what might come
next--and so that your classmates can also benefit from what you
have learned. Usually, that "something" is a written report,
and that is fine, t·· it can become very boring after a while.
May we suggest that ﾀu skip the report and try the Mix and Match
system which is described on the next page?

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Mix and Match

The first list of words below gives suggestions of <u>what</u> you can do.
The second list suggests <u>how</u> you might do it. The trick is to
use a wide variety of choices from each list (<u>operations</u>/<u>products</u>).
So let's mix and match a way to report information searched out
about each of the five questions about horses. Look on the
next page to see how the <u>mix</u> <u>and</u> <u>match</u> turns out.

	What		How
	adapt	#2	chart
#4	add to		chronology
#3	analyze		collection
	apply		comic strip
	change		construction
#5	choose		diagram
	classify		diorama
#3	compare		discussion
	contrast		editorial
	create		essay
	criticize		experiment
	decide		fact file
#2	demonstrate		film
#1	describe		game
	design		graph
	discover		journal
#2	explain		learning center
	group		lesson
	identify		map
	imagine		mobile
#4	improve	#4	model
	invent		museum
	judge		newspaper
#5	justify		peepshow
	list	#1	picture
	match		plan
#1	name	#5	play
	observe		poem
	organize		problem
	predict		puppet
	prove		record
	put in order		scrapbook
	report		song
	represent		statement
	select		story
	show		survey
	solve		textbook
	suppose (what if...)		time line
	take apart		travelogue
	teach	#3	work sheet
	etc.		etc.

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Little Questions

1. What kinds of horses are there?

2. How are horses related to other animals?

3. What are the parts of a horse?

4. What could be added to the design of a horse to improve it?

5. Which kind of horse is the most important, and why?

Reporting Method   (Mix and Match)

1. Name and describe the general types of horses by drawing a picture.

2. Demonstrate and explain how horses are related to other animals by making a chart.

3. Analyze the parts of a horse and compare them to the parts of an automobile by making a work sheet.

4. Add something to improve the design of a horse by making a model, using any available material.

5. Choose the most important kind of horse and justify your choice by writing a play.

At this point there is nothing left to do except gather all of the information available and organize it into the mix and match activities you have planned!

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Susan H. Sager   March 2, 1977

Plan for Independent Study

Topic: Helen Keller

Big Question: What is interesting or important to know
                    about the early life of Helen Keller,
                    especially during her first few months
                    with her teacher, Annie Sullivan?

Little Questions:

1. What are the important facts about
    Helen Keller's early life?

2. What methods might be used to communicate with
    and teach a deaf-blind person?

3. How do signing, finger spelling, and braille
    differ from one another?

4. How might Helen's changing feelings--
    as she moved from isolation to communication--
    be represented in visual images and in words?

5. Why is the ability to use language probably
    the single most important difference between
    man and beast?

Bibliography

1. Book of Knowledge (1972), X, 201.

2. Davidson, Mickie. Helen Keller's Teacher. New York, 1965.

3. Gibson, William. The Miracle Worker. New York, 1956.

4. Keller, Helen. The Story of My Life. New York, 1902.

5. World Book (1976), XI, 209-210.

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Reporting Method: Plan of Activities to Use
for Sharing Answers to Little Questions (*)

1. List the important dates and events in Helen Keller's early life
    by making a chronology.

2. Demonstrate methods used to communicate with deaf-blind persons
    by teaching a lesson to a student wearing a blindfold and
    sound-suppressing earphones.

3. Compare signing, the manual alphabet, and braille
    by making an illustrated chart.

4. Represent Helen's changing feelings--

        a) in visual images,
            by making a series of paintings.
            (Color changes from dull, grayed tones
            to bright, clear colors.
            Brushwork changes from a "closed" stiff, hard-edge style
            to "open" loose, free brush strokes.)

        b) in words,
            by selecting a series of expressive quotations
            from Helen Keller's autobiography and
            William Gibson's play The Miracle Worker.
            (Feelings expressed change from grief and frustration
            at being isolated to joy and confidence in being
            able to communicate.)

5. Justify the belief that language is what makes human beings human
    by presenting a round table discussion.

(*) Note:
    Each reporting activity grows out of its own little question!
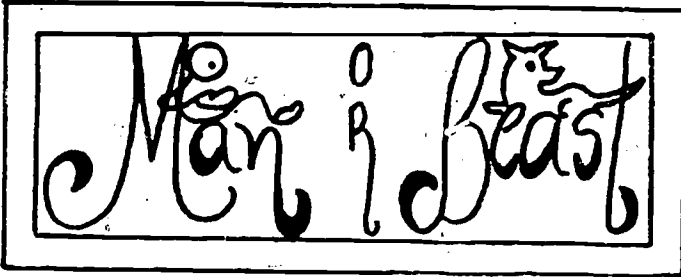   Reporting activity (1) goes with little question (1), etc., etc.

Psychomotor

353 446

Concept/Competency

AUDITORY THINKING ACTIVITIES

Listening is a mode of obtaining information which is subsequently categorized.

Man or Beast

Developed by Betty Suzuki

LEVEL __4 - 6__   TIME __30 minutes__

ENTRY CONCEPTS:	MATERIALS:
--Ability to listen	A dictionary A list of synonyms for "Groups"

TEACHER TASKS:

STUDENT

	ENABLING BEHAVIORS: The student: In order to:	LEARNING.

INTRODUCTION:
The teacher will announce a game called "Man or Beast". Divide the class into two teams then give the following instructions.

LESSON DEVELOPMENT:

1: Say: "Beast includes everything other than man. The most commonly associated usage of the term should be selected."

(The pupil categorizes the assigned word under "Man" or "Beast" and uses the word in a sentence/phrase. EXAMPLE: litter – a litter of kittens.)

The team that correctly categorizes the most terms, wins.
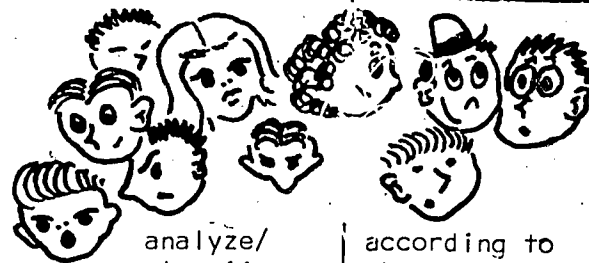
listens   analyze/
            classify

according to
characteristics
of word and
usage.

354 446 a

List of Synonyms

|		
class	tribe	mob
drove	regiment	crowd
swarm	crew	audience
gaggle	committee	litter
covey	pride	rabble
bevy	squadron	posse
school	congregation	

EVALUATION:

The student will see how many new synonyms can be applied to each category.

Can you give a reason why there are different names for different groups?

Listening to the sound, does the word seem appropriate for the group it describes?
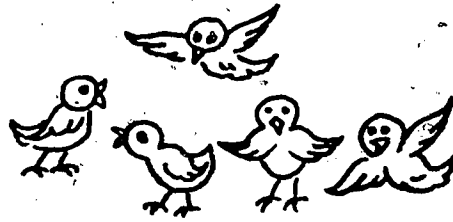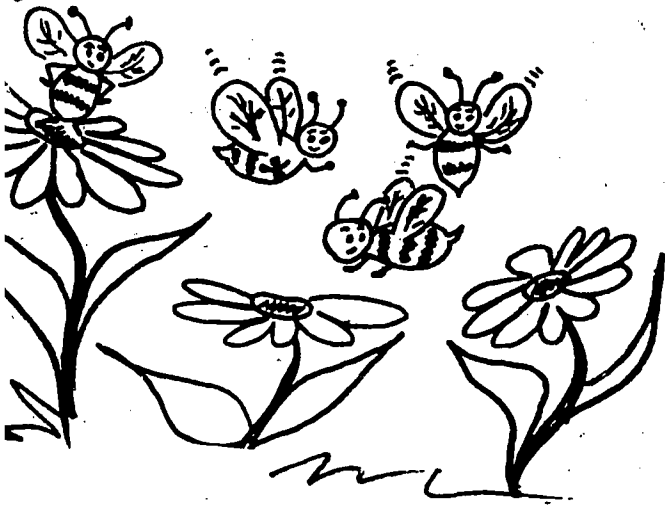
listens	analyze/ classify	according to characteristic of word and usage.
chooses	expand	usage of terminology.
evaluates	select	appropriate definition.
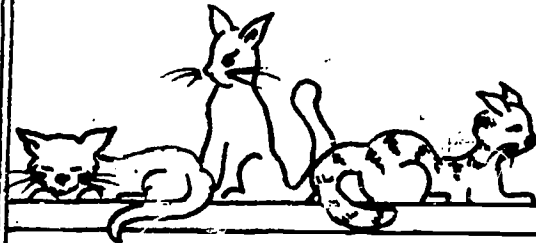
Given the opportunity to work with terminology, the student will categorize them.

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Concept/Competency

GRAPHIC THINKING ACTIVITIES

Caligraphy is the art of Japanese writing.

CALIGRAPHY
Developed by: Betty Suzuki

LEVEL ___3 - 6___ TIME ___45 minutes___

		STUDENT	
ENTRY CONCEPTS:	**MATERIALS:**		
--Ability to read words such as tree, forest, river, man	Pencils or brushes and India ink; Ditto hand-out		
TEACHER TASKS:		**ENABLING BEHAVIORS:**	**LEARNINGS:**
		The student: In order to:	
INTRODUCTION:			
The teacher will explain that caligraphy in Japan is considered an art and a revelation of one's character.	listens	understand	directions.
She/he will also explain that the characters often represent physical characteristics of the word.			
The characters must be written from left to right.			

(Left margin, vertical text:) PHYSICAL EFFECTIVENESS   PSYCHOMOTOR:

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448

449

lligraphy

SSON DEVELOPMENT:

Using the ditto hand-out, the teacher
will guide the class in class discussion.

Hand out sheets, brushes, and ink to
students and have them write characters.

Write a short story using the
characters.

'ALUATION:

ie student will discuss the characters and
ipraise the value of this type of writing.
ie student will attempt to surmise the
iasons for the development of this method
writing.

ie students will share their stories with
ie another.

observes	identify	physical attribute of characters.
analyzes and combines	synthesize	logical develop-ment of characters.
experiments	appreciate	the precise nature of the art of caligraphy.
synthesizes	produce	a creative story to develop owner-ship and a working knowledge of the characters.

Given the opportunity to experience caligraphy, the student will develop an appreciation of the art of writing in Japan.

34GO

木 tree
森 forest
山 mountain
川 river
口 mouth
言 said
中 inside
耳 ear
聞 hear

門 gate
間 between
上 up
下 down
心 heart
思 think
日 day
時 time
目 eye
見 saw

人 person
人 1 person
二人 two people
三人 three people

一 one
二 two
三 three
四 four
五 five
六 six
七 seven
八 eight
九 nine
十 ten
十一 eleven
十二 twelve
十三 thirteen

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MAGIC

═Movements═

Developed by: Carole Draper

PHYSICAL EFFECTIVENESS
Techniques of Relaxation

Relaxation can develop through concentration, physical movement, sensory awareness, and fantasy.

LEVEL K - 6   **TIME** Several days to cover all areas

PHYSICAL EFFECTIVENESS

ENTRY CONCEPTS:

--The ability to listen and follow directions

MATERIALS:

Tape recorder; chair, desk;
Dark sock with various small items in it such as comb, scissors, wrench, cup, screwdriver, pencil, ball, etc.; Geometric design or shape; foods such as orange, banana, cracker, etc.;

TEACHER TASKS:

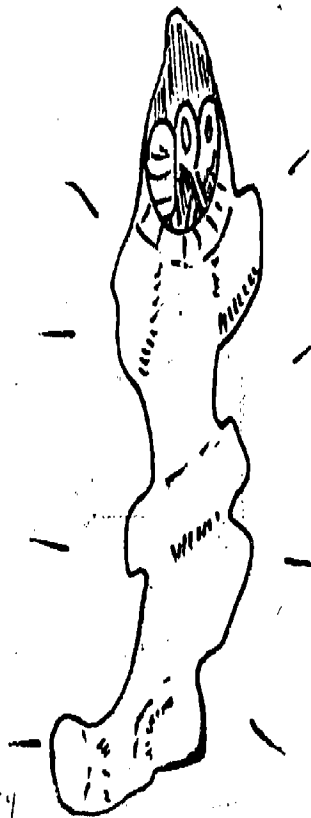### STUDENT

ENABLING BEHAVIORS:	LEARNINGS:
The student: In order to:	

PSYCHOMOTOR:

INTRODUCTION:

Relaxation is practice in concentration.
There are four basic forms of relaxation--
    sensory awareness
    physical movement
    concentration
    guided fantasy.

The teacher will instruct the child in each area.

45

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ESSON DEVELOPMENT:

. "Sensory awareness" involves activities
in the areas of listening, feeling, seeing,
and tasting.

A. (1)	Ask the students to be very quiet for 5 minutes while they write down what sounds they hear (inside the room, outside the room, tape recording, etc.)	listens writes	hear	specific sounds.
(2)	Have the students discuss and compare their lists.	discusses compares	verbalize and summarize	the lists of sounds heard.
B. (1)	The teacher will fill a dark-colored sock with various items. Ask the students to feel the different items and decide what they are. OR....	touches decides feels examines	distinguish and identify	specific objects.
(2)	The teacher can ask the students to feel and touch their desks and chairs. Then have them express orally their findings.	feels touches	discuss, verbalize, be conscious of	their tactile feelings about common, everyday items.
C.	The teacher will ask the students to describe (orally or in written form) a simple object they come across every day but take for granted, such as their bed, their favorite chair, the T.V., etc.	describes summarizes verbalizes sees	conceptualize	a specific common everyday item.
D.	The teacher will make available various kinds of foods or drinks, such as carrots, bread, crackers, cake, jello, lemon, cucumber, tea, coffee, pop, water, orange juice, etc., for the students to taste. The student will attempt to distinguish between the items when blindfolded.	tastes smells tests analyzes	determine, compare, distinguish, differentiate	various foods or drinks.

45+

360

|			
2. To develop the area of "physical movement" the teacher will ask the students to raise their hands slowly above their heads, to lower their hands slowly to their sides, to slowly raise their right arm out straight to their side, to slowly raise their left arm out straight to their side, etc.	moves	demonstrate	certain body movements.
3. To develop the area of "concentration" the teacher will have the students focus on a geometric design such as an octogon, breathing gently and trying to release all thoughts.	studies looks watches	develop	concentration.
4. In the area of "guided fantasy" the teacher will set the scene where the students involve themselves in imagination. Example: The teacher asks the students to imagine they are standing near a cave on the side of a mountain. Now you walk near the cave. Go in and explore it.	imagines describes elaborates formulates	develop	a fantasy situation,

EVALUATION:

The teacher will ask the students such questions as:

--How did you feel when asked to describe a familiar object?
--How did your body feel when you were moving about slowly?
--How did your mind feel when you were concentrating on one object?
--Did you like these activities?
--Did you learn something from these activities? What?

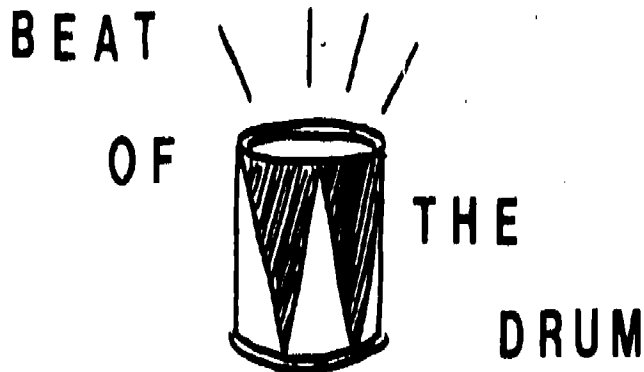The teacher may have many more questions which she can ask the children.
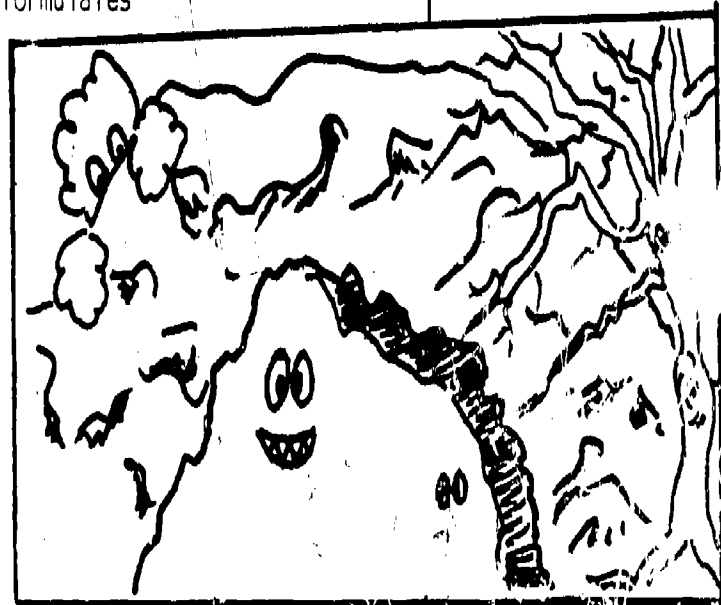
The student will become a more relaxed, calm individual with a stronger feeling of self-worth.

BEAT OF THE DRUM

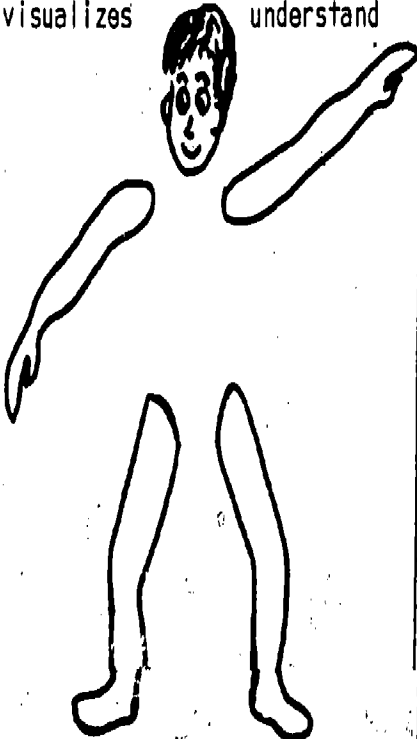Developed by: Betty Suzuki

SELF-EXPRESSION THROUGH MOVEMENT

The limbs of a human body are capable of moving independently or as a unit.

| LEVEL | K - 4 | TIME | 20 minutes |

ENTRY CONCEPTS:

--Ability to visualize numerals 1 - 10

MATERIALS:

Drum
Large area - gymnasium or multi-purpose room

PHYSICAL EFFECTIVENE (vertical label)

TEACHER TASKS:

STUDENT

ENABLING BEHAVIORS:	LEARNINGS:
The student: In order to:	

PSYCHOMOTOR: (vertical label)

INTRODUCTION:

The teacher will discuss the limbs and evoke awareness of the mobility of limbs and the head.

LESSON DEVELOPMENT:

Have students carry out tasks verbalized by instructor.

| visualizes   understand | the physical connection of appendages to the body. |

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458

Move your body in time to the beat of the drum. (Change rhythm and observe how quickly the student adjusts.)	listens	perform	body movements in time to a definite beat.
2. Change your movement by moving your feet in a way that is different.	improvises	create	various possible movements of limbs.
Move your arms in a manner different than that done in the two previous exercises.			
3. Choose a movement that someone else was performing that you would like to do.	observes	duplicate	a model that was previously observed.
Move your head in a way that is unusual.	experiments	discover	the head movement greatly affects the mobility of the remainder of the body.
Variation - Show you are happy, sad, angry.			
Divide the class in groups of two's or three's. Assign a numeral to each group. The group must relate to the class the numeral assigned by som physical means.	moves body	express	numeral through group process.

VALUATION:

he students will identify the numeral that he group is tr, ng to communicate.

-What were some of the clues that helped them to ident' y the numeral?

-What new limb movements have you discovered?

The child will gain an appreciation of the movements possible by each limb and will learn how communication is possible through body movements.

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Concentration - Español

MIND-BODY INTEGRATION ACTIVITIES

One's mind must concentrate when a precise physical routine is being executed.

Developed by Betty Suzuki   LEVEL 4 - 6   TIME 20 minutes

ENTRY CONCEPTS:	**MATERIALS:**	
Student is familiar with counting in Spanish.		

PHYSICAL EFFECTIVENESS

TEACHER TASKS:	**STUDENT**	
	ENABLING BEHAVIORS:	**LEARNINGS:**
	The student: In order to:	

PSYCHOMOTOR:

INTRODUCTION:

The teacher will tell the students they are going to play a game. Have the students form a circle then, go through the cardinal numbers in Spanish, up to the number of students in the class.

LESSON DEVELOPMENT:

1. Familiarize students with rules:

You must call out numbers in rhythm. A student who makes an error goes to the highest number. The student next to "it" takes his place and those with higher numbers move one seat closer to "Numero Uno."

listens   comprehend   rules.

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Rhythm and motion:
slap knees = beat 1
clap hands = beat 2
snap right fingers = beat 3
snap left fingers = beat 4

On beat of 3, verbalize your own number.

On beat 4, verbalize number of person you
wish to call on.

anticipates   translate   Instructions into
actual play.

The person whose number was called on
the fourth beat calls out the number in
the next rhythm sequence. The person
in seat #1 initiates activity. Sequence
continues until allocated time expires
or inability of the group to "dischair"
Number 1.

EVALUATION:

Ask students, "Compare how well you did at
the beginning with the end."
"What made the difference?"

Determine the skill needed to concentrate
and remain in the beginning seats #1, 2, 3,
by asking: "Who was most able to stay
in seat #1?"
"Would you tell us what skill you used?"

uno.........one	trece.........thirteen
dos.........two	catorce.......fourteen
tres........three	quince........fifteen
cuatro......four	dieciseis.....sixteen
cinco.......five	diecisiete....seventeen
seis........six	dieciocho.....eighteen
siete.......seven	diecinueve....nineteen
ocho........eight	veinte........twenty
nueve.......nine	veintiuno.....twenty-one
diez........ten	veintidos.....twenty-two
once........eleven	
doce........twelve	

*Given the opportunity to do this exercise,
the student will be able to concentrate
in a "pressure" situation and gain mastery
of counting in Spanish.*

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PARTIAL LIST OF THINKING GAMES AND ACTIVITIES

Here is a partial listing of games and activities which are useful for encouraging positive feeling, good thinking and active doing. Each game is labeled with a partial trigram to indicate what content and product is stressed. (See Guilford and Meeker.)

FIGURAL CONTENT

Geometrix Puzzles:

FT   Pythagoras (Square/
      Tangrams)
FT   Puzzle Grams (Rectangle)
FT   Euclid (Octagon)
FT   Tormentor (Heart)
FT   Kwazy Quilt (Free Form)
FT   Soma Cube (Incomplete
      Tetraminoes)
FT   Rainbow Blocks
      (Tetraminoes)
FT   Hexed (Pentaminoes)
FT   Tangled Angles (Hexaminoes)

Domino - Type Games:

FR   Classic Dominoes
FR   Hi-Q Dominoes Puzzle
FR   Tri-Ominos
FR   Drag-Ominos
FR   Connect
FR   Psychepaths
FR   Twixt
FR   Hex
FR   Bridgit
FR   Qwik-Sane

Array/Coordinate Problems:

FR   Hi-Q
FR   Switch
FR   Three-Dimensional Tic Tac Toe
FR   Tac-Tickle
FR   Score Four
FR   Go (Five in a Row)
FR   Battleship
FR   Memory Game (Concentration)
      Atlases, Maps and Globes
      Geo-boards
      Graph Paper

Construction:

FS   Geo-D-Stix
FS   Constructo-Straws
FS   Erector Sets
FS   1,000 wooden cubes
FS   Lego
FS   Connector
FS   The Toy Maker
FS   Geodesic Fantasy
FS   Flexagons
FS   String Figures and How To Make
      Them (Book)
      Rulers, Protractors, Compasses,
      Scissors, Glue

Pattern and Design:

FS   Pattern Pending
      Blocks
FS   Design Blocks and
      Mirrors
FS   Mosaic Parquetry Tile
FS   Puzzle Patterns -
      Dots, Lines, Shape
FS   Haar Houlim Perceptio
      Games
FS   Configurations

Shape Recognition:

FU   Scan
FU   Perfection
FU   Superfection

PARTIAL LIST OF THINKING GAMES AND ACTIVITIES (Cont'd)

SYMBOLIC CONTENT

Arithmetical Games:

SI Tuf
SI Krypto
SI Numble
SI Heads Up
SI Mancala
SI Cuisenaire Rods
SI Aggravation
SI Sorry
SI Yahtzee
SI Equations
SI Real Numbers
SI On-Sets
SI Kismet
SS Numbers Up
SR Twenty Questions (Numbers)
SI "Magic Square" - Type
      Games
      Pocket Calculators

Alphabetical Games:

SS Spill 'n' Spell
.I Anagrams
SI Scoring Anagrams
SS Scrabble
SS Scrabble for Juniors
SS Crossword Dominoes
SS Probe
SS Hangman
SS Perquacky
SS Duplicate Ad-Lib
SS Boggle
SS Keep Quiet
SS Word Mastermind
      Dictionaries (Spelling)

Logic Games

SI Mastermind
SI Tri-Nim
SI WFF'n Proof
SI Clue
SI Whosit?
SI Bridge (Card Game)

SEMANTIC CONTENT

MU Wordcraft Puzzles
MS Sentence Cube Game
MU Guiness Game of World Records
MI Propaganda Game
MI The Un-Game
MI On-Words
MI Queries 'n' Theories
MS Twenty Questions (Animal, Vegetable, Mineral)
MI Point of Law
     Dictionaries (Definitions/Etymology)
     Almanacs
     Encyclopedias

RECREATION: STRATEGY GAMES

FI Checkers
FI Chess
FI Othello
FI Stratego
FI Tripples
FI Backgammon
SI Monopoly
FI Risk
FI Chinese Checkers
FI Parcheesi
FI Roadblock
FI Q-Bits

MI Careers
SI Life
SI Anti-Monopoly
MI Stay Alive
FI Feudal