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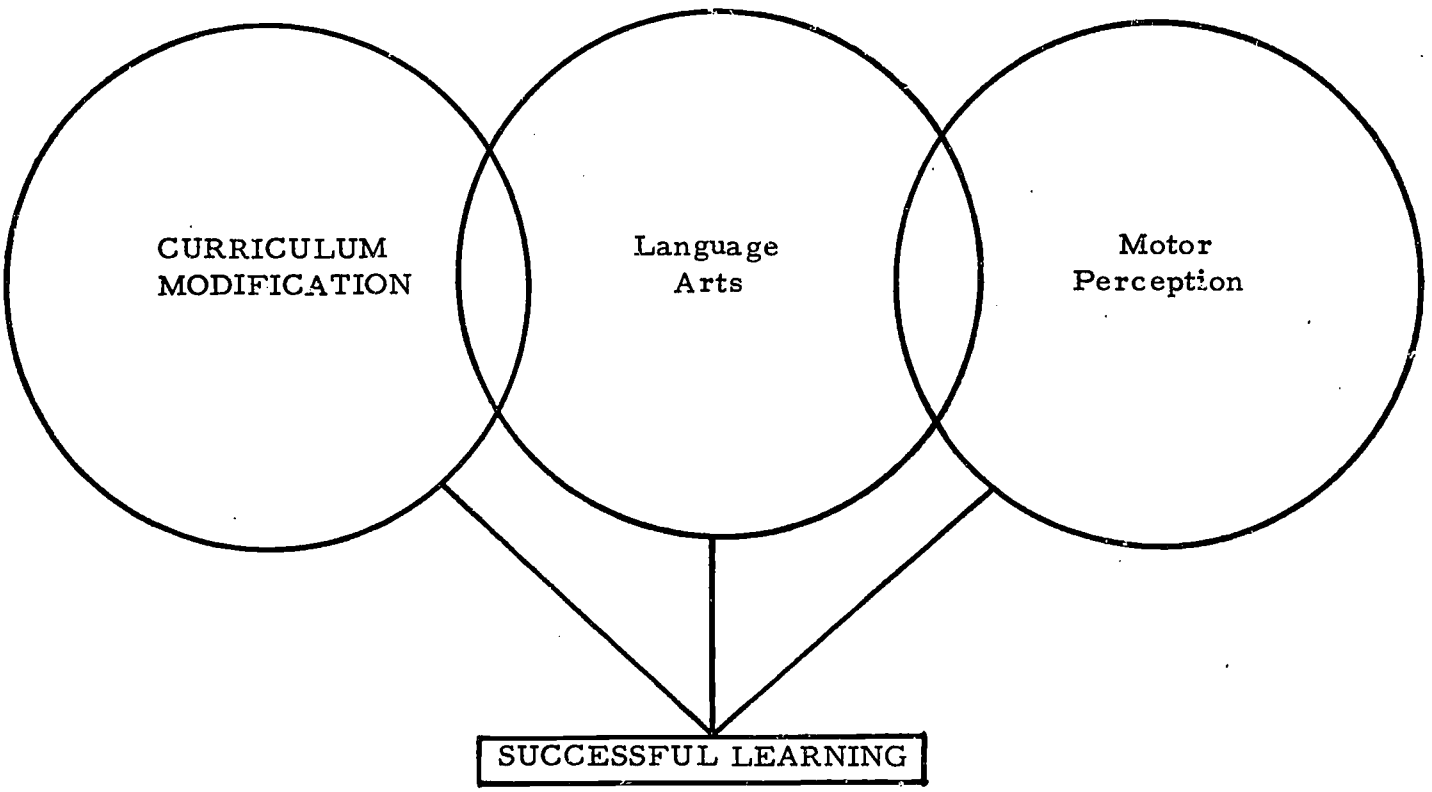
ABSTRACT

The curriculum modification guide, developed by project success (Nebraska) through a Title III grant for language disabled elementary level students, contains suggested activities and instructional materials to be used in units of art, health, mathematics, music, science, and social studies. Explained are program planning, criteria for selecting instructional materials, and goals. The curriculum modifier (a consultant to teachers) is said to perform functions such as preparing individualized prescriptions, selecting appropriate instructional materials and collecting data for ongoing evaluation of students. A chart based on the modifier's tasks specifies teacher behavior, task analysis, and student behavior. Usually specified for subject areas are teacher instructions, activities, instructional materials, grade level(s), skills to be developed, and sources for materials. Art activities such as stringing beads to make a necklace are suggested for developing visual and motor perception. Activities such as visiting a grocery store are suggested for 18 health units featuring aspects such as alcohol, dental health, and safety. Offered for 38 subcategories pertaining to number operations, measurement, geometry, and computation in mathematics are activities such as preparing a bingo game using fractions. Provided in the science section is a model unit on plant growth. Social studies activities are given for the following grade level units (number of topics per unit are in parentheses); grade 1, the family (27); grade 2, the neighborhood (14); grade 3, cities (18); grade 4, Nebraska (13) and geography (13); grade 5, U.S. (17); and grade 6, Canada and Latin America (15). (MC)

PROJECT SUCCESS

FOR

THE SLD CHILD



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Wayne, Nebraska

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This curriculum modification manual has come about as a result of many people sharing their ideas with me, giving their solid support, affording their gentle guidance, and bestowing their helpful criticism.

I wish to acknowledge the assistance of Mary Lee Enfield, Victoria E. Greene of Project Read in Bloomington, Minnesota, Sandra Anderson of Bloomington, Florence Markey Schmerler, St. Paul, Minnesota, Dr. Elizabeth Gallistel of New Haven, Connecticut, my personal friend and guide, Mrs. Dorothy Ley and the Project Success director who made it all possible, Mr. Richard Metteer, of Wayne, Nebraska. There are many others but they will remain anonymous.

Jean Owens
Curriculum Modifier

CURRICULUM MODIFICATION

WHAT IS A SPECIFIC LANGUAGE DISABILITY CHILD?

A child with specific language disabilities is one that has intact general intelligence... but he also has learning differences which, with conventional teaching, prevent him from learning to read, write, and spell with facility and to lead him to frustrating failure instead of satisfying SUCCESS.

WHAT IS A CURRICULUM MODIFIER?

A curriculum modifier researches problems of the SLD child in order to recommend to his classroom teacher the right teaching techniques, geared to his unique learning style... and thereby changing failure into success.

PLANNING A DEVELOPMENTAL PROGRAM

The developmental program will develop gradually and in such a way that the goals and the necessary behaviors are clearly defined, and the procedure will be built in a step-by-step sequence. The activities will immediately reward the student in terms of the activities themselves. After determining what is to be taught, the next step in developing a teaching sequence for an individual child will be to gather information on the subject matter to be taught and to compile a list of concepts that the child needs to learn. These concepts will then be broken down into specific tasks, which are then defined behaviorally.

MATERIALS

Materials will be chosen which will bring about the desired response of the child. The following aspects will serve as guidelines to selecting instructional aids:

Sensory stimulus: Can the child use the material? Does it require a response of which the child is capable?

Voluntary Focus: Is the format simple, or is it too distracting for the child?

Understanding:	Are the directions simple enough for the child to master? Does he perceive the task?
Intended Response:	Is the behavioral goal clear to the child?
Feedback:	Does the child know whether he has accomplished the task successfully? Does it provide for maximum success?

The evaluation of the child will have significant bearing on the types of materials the teacher will use to implement the developmental sequence. If the child is hyperactive, an aid will be chosen that involves manipulation or construction of objects. If fine motor skills are poorly developed, we will use materials within the child's ability and avoid those that require complex motor manipulation. If the child's frustration level is low, materials will be chosen which provide step-by-step progression of tasks in which he is assured of succeeding at first. If the child cannot make generalizations about affects, but thinks in terms of common physical properties or use, materials of high visual impact-perhaps utilizing color clues and focusing on categorization and grouping activities-will be selected for him. If the child is extremely impulsive or exhibits motor responses that appear meaningless or inappropriate, materials which exploit a purposeful motor reaction will be selected, such as pegboards.

GOALS

The goals or objectives which are set for the child will be child centered rather than teacher centered. They will be realistic. They will have a built-in system of evaluation based on observed behavior. The system of implementation, revision, modification, and recycling will be continuous and will provide for the needs of the individual child.

As the instructional sequence is being applied with the child, behavior change will be evaluated as it occurs. New data will be gathered which will lead to revision and additions to the original list of recommendations for

the child. These data will be used to modify and extend the instructional sequence.

PHASES OF THE WORK OF THE CURRICULUM MODIFIER

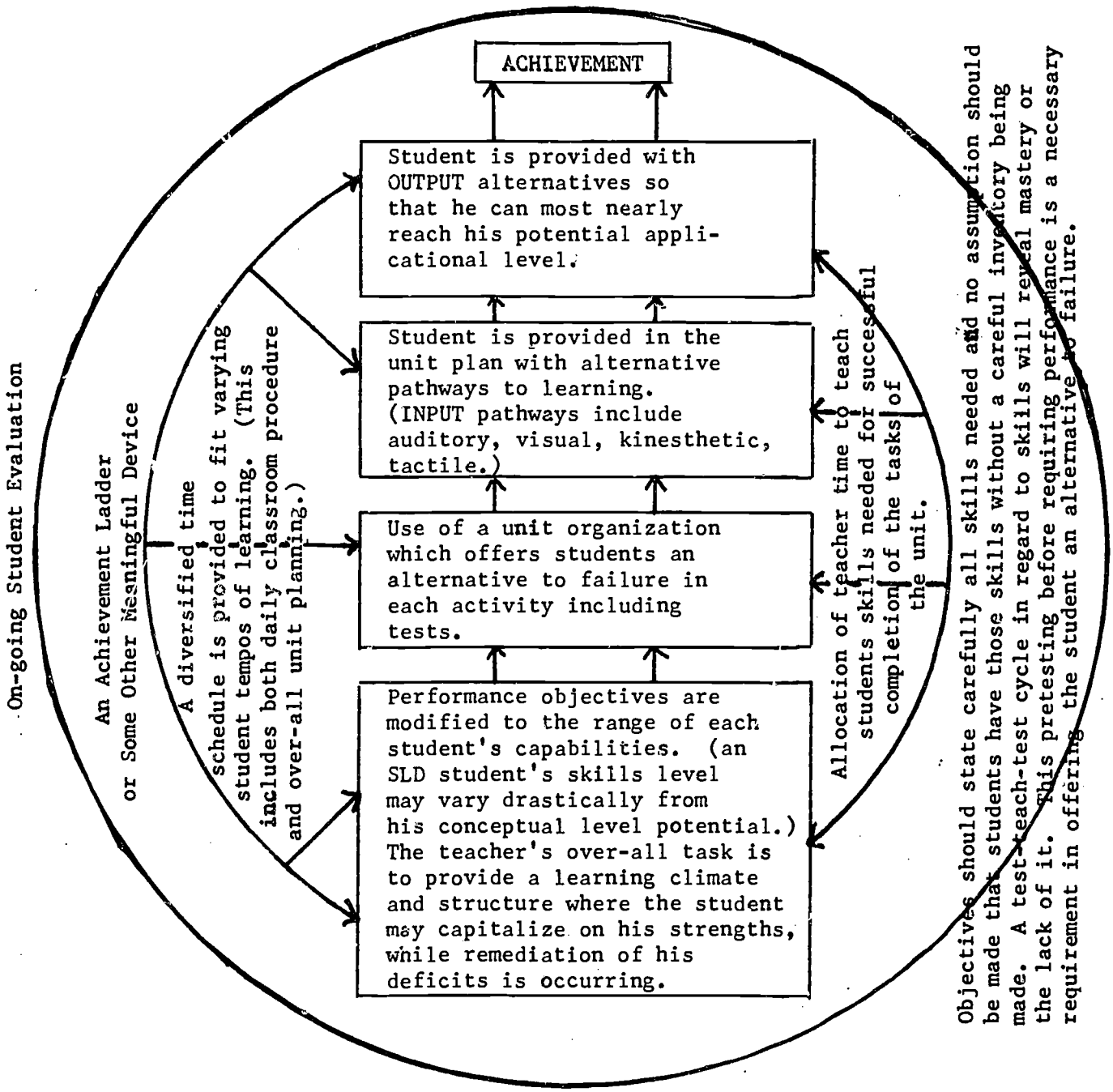
Phase I- Assess the information that has been acquired, to translate the needs into operational objectives, and to develop an educational prescription for the pupil. Develop a hierarchy of skills plan to remediate the problem.

Phase II- Search out instructional materials that match the objectives stated in Phase I and correlate them with the hierarchy of skills plan. When materials are lacking, new ones will be created or existing ones will be modified.

Phase III- Material will be presented to the pupil in a number of forms. They will be multisensory and provide for concrete experiences. Films, filmstrips, auditory machines, and any number of other ways that seem appropriate will be used. Collection of data will be essential to the program. As data is collected and analyzed, it will be the basis for modifying materials or objectives. Diagnosis will continue and the entire process will be repeated.

Phase IV- Abstracts or summaries of professional materials will be made available to the staff, teachers and visitors to the Project.

PROJECT SUCCESS MODEL FOR CURRICULUM MODIFICATION



Prepared by Mrs. Florence Schmerler, evaluator for Project Success, St. Paul, Minn.

TEACHER BEHAVIOR

to promote learning by students

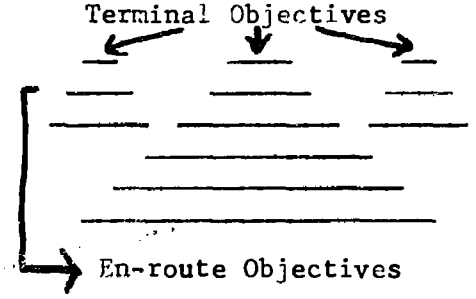
I. Determine skills, knowledge, attitudinal pre-requisites to achieve
   - A. Terminal objectives
     1. Resource room
     2. Classroom
   - B. En-route objectives
     1. Resource room
     2. Classroom

II. Assessment of students' entering behavior
   - A. Characteristics of entering behavior
   - B. Classification of entering behavior
   - C. Determination of services
     1. SLBP placement
     2. Alternative placement

III. Prescription for learners' success
   - A. Students' internal structure
   - B. Teachers' external structure
     1. Physical environmental factors
     2. Instructional ordering
     3. Extrinsic reinforcers
     4. Knowledge of results
     5. Guidance of behavior
   - C. Teachers' communication: staffings, consultations, in-services, reports
     1. Classroom teachers
     2. Supervisory staff
     3. Supportive staff
     4. Community agencies
     5. Parents

IV. Evaluation
   - A. On-going assessment of students needs
   - B. On-going assessment for teacher accountability
     1. Evaluation of student behavior
     2. Evaluation of prescriptions
        - a. Content organization
        - b. Instructional strategy

TASK ANALYSIS



I. Task analysis
   - A. Learning task
     1. Cognitive lrn.
     2. Affective lrn.
     3. Psychomotor lrn.
   - B. Behavioral obj.
     1. Learner
     2. Observable beh.
     3. Demonstration of behavior
     4. Criteria

II. Organization of learning tasks
   - A. Principles
   - B. Concepts
     1. Components
        - a. Attributes
        - b. Values
     2. Types
        - a. Conjunctive
        - b. Disjunctive
        - c. Relational

III. Evaluation
   - A. Students' beh. change
   - B. Appropriateness of objective

STUDENT BEHAVIOR

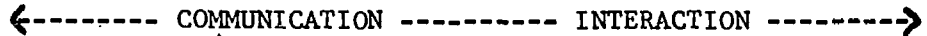
to achieve skills and knowledge

I. Characteristics of entering behavior
   - A. Academic preparedness
   - B. Level of maturation
   - C. Individual differences
   - D. Personality

II. Classes of entering behavior
   - A. Learning ability
   - B. Learning style
   - C. Learning sets

III. Learners' success factors
   - A. Internal structure
     1. Reinforcement: intrinsic
     2. Approach, avoidance tendencies
     3. Self-knowledge, self-esteem
     4. Coping strategies
     5. Feeling tone and interest
   - B. External structure
     1. Physical environment
        - a. Space, time organization
        - b. Meaningfulness
          1) Relevancy, variety, vividness
          2) Previous learnings, experience
     2. Instructional ordering
        - a. Grouping organization
        - b. Sequencing of tasks
          1) Sequential hierarchy
          2) Whole or part
          3) Spiral structure
        - c. Media: modality input, output
        - d. Degree of exposure
     3. Reinforcement: extrinsic
     4. Knowledge of results
     5. Guidance of behavior
        - a. Original learning
        - b. Transfer of learned behavior

IV. Evaluation of change in behavior
   - A. Pre-assessment
   - B. Post-assessment



Prepared by Mrs. Florence Schmerler, evaluator for Project Success, St. Paul, Minn.

DEVELOPING VISUAL PERCEPTION

THROUGH ART EXPERIENCES

Frances Kees

This booklet is an excellent curriculum guide for teachers to use to help SLD students through the medium of Art. It is built around the five areas of visual perception. (Visual-Motor Coordination, Figure-Ground Perception, Perceptual Constancy, Perception of Position in Space, and Perception of Spatial Relationships).

INTRODUCTION

"Art education is no longer largely oriented towards the teaching of drawing or painting. Its central concern is the sharpening of perception in order for a child to see potentials in materials, to find variety in images, to sense weight, movement and texture visually - in other words to see and to transfer visions into new forms."

The following material was organized according to five areas of visual perception.

1. Visual-Motor Coordination - the ability to coordinate vision with movements of a part or parts of the body.
2. Figure-Ground Perception - the ability to focus on a center of attention, yet see the object in relation to its background.
3. Perceptual Constancy - the ability to perceive an object as possessing invariant properties, such as shape, position, and size, in spite of the vari-ability of the impression on the sensory surface.
4. Perception of Position in Space - perception of the relationship of an object to the observer.
5. Perception of Spatial Relationships - the ability of the observer to perceive the position of two or more objects in relation to himself and in relation to each other.

An attempt has been made to suggest art experiences that will help a child become more visually in touch with his surroundings.

VISUAL - MOTOR DEVELOPMENT

1. LARGE MUSCLE COORDINATION

STRATEGIES:

Fingerpaint, using arm movements to show the waves of the ocean; the movement of a roller coaster lightning.
Fill a large paper with a repeated shape you like, using one color and a large brush.
Make a toy by assembling an assortment of large boxes.

2. FINE MUSCLE COORDINATION

STRATEGIES:

Make a torn paper picture of your pet.
Model a plasticene animal. Build a cage for him by clipping clothespins around the lid of a cardboard box.
Cut a newspaper sheet into strips, using the column lines as a guide. With straight, zig-zag or curved cuts, change the edges of the paper. Arrange to form a design on colored paper.
Make a necklace by stringing wooden beads.

3. BALANCE

STRATEGIES:

Build a city by stacking and balancing cartons.
Pretend you are - and move your body to show -
a tree in the wind
a hopping kangaroo
a floppy rag doll

4. RHYTHM

STRATEGIES:

Print an all over repeat pattern, stamping rhythmically with a cross section of a fruit or vegetable.
Paint lines to show the movement of the following toys, after you have played with -
a spinning top; a bouncing ball;
a wind-up toy.

5. DIRECTIONALITY

STRATEGIES:

Make a paper weaving, remember to weave over and under and from left to right.
Stamp an allover repeat pattern with a styrofoam block, filling the paper with a right to left movement.

6. EYE-HAND COORDINATION

STRATEGIES:

Fingerpaint waves to show -
a breaking wave
a whirlpool
a chain of waves
a splashing wave
Look at objects found on a nature walk to see their shapes. Draw the shapes in the air with your finger. Make a painting of your favorite.
Make a collage using wallpaper, glue and such things as sawdust, sand, beans, pebbles, beads and seeds.

7. VISUAL-MOTOR MEMORY

STRATEGIES:

Play on the swings, monkey bars, sliding board and see-saw. Discuss the position of your body as you used each piece of equipment. Assume that position. Draw yourself in action.
Skip, hop or dance to a recording of music with varying tempos. Do each in slow motion. Draw yourself in each position.
Pretend your drawing paper is the art room. Make a line with paint that will show where you came in the door and where you walked after that.

FIGURE-GROUND PERCEPTION

1. FORM PERCEPTION

STRATEGIES:

Find and identify the basic shapes.
How do you play "Farmer in the Dell"?
Make a circle in the room. Define circle.
Look at the clock. What shape is it?
What is the shape of -
the top of a desk
the window
a dish?
Look outside. What shapes are in-different trees, different houses, a traffic light, a stop sign, a mailbox, a church, a wheel?
Paste a circle of colored paper on a big sheet of paper. What could your circle be?
Paint the rest of a picture to show whether you thought it was a clown's nose, a train wheel, or whatever.
Cut an assortment of basic shapes of varying sizes and colors. Arrange them to make a picture.

2. VISUAL DISCRIMINATION

STRATEGIES:

Make a patterned necklace by threading bead combinations such as - red/blue, red/blue, red/blue; cube/sphere/sphere, cube/sphere.
Weave a pot holder on a Nelly B. loom, repeating two colors alternately.
Sort found objects into like piles - brown dried beans, white shells, small pebbles.
Make a picture of animal families. Be sure the father is the largest, the mother middle-sized and baby smallest.

3. LOCATING PICTURED OBJECTS

STRATEGIES:

Look at a reproduction of Franz Marc's Red Horses. Find the largest horse. What is under the horses' feet? What do you see close to the bottom of the painting?
Look at a reproduction of Rouault's painting of Joan Of Arc. What is she holding in her hand? What is she riding?
What makes an elephant look like an elephant? Look for the important thing that makes each animal very different from the other in these photographs.

PERCEPTUAL CONSTANCY

1. DISTINCTION OF COLOR

STRATEGIES:

Identify the colors you see in your clothing, a bunch of flowers, your crayon box.

After hearing Mary O'Neill's "Hailstones and Halibut Bones," discuss the many variations in color.

Tell the difference between a piece of dark blue and a piece of light blue paper. Find as many shades of blue as you can in the classroom. Cut as many samples of each of the basic colors as you can from a magazine. Sort them as to color. Paste them on a paper arranging them from the lightest to the darkest shade in each color.

2. DISTINCTION OF SHAPES

STRATEGIES:

Find as many square shapes in the room as you can. Tear a paper into squares and arrange a design on a contrasting colored paper.

Fold a square piece of paper in half once, twice, three, four times. Count the squares. Pretend each square is a cage. Make a repeat pattern by drawing an animal in each cage.

Identify -

circle	rectangle	square
cross	triangle	star
semi-circle	diamond	

Locate these shapes in the classroom. Make a torn paper stencil using one of the above shapes. Stencil a design using a dry brush.

Decorate a clay pinch pot by imprinting with found objects that will print the basic shapes. Identify the repeated shapes.

Identify as many of the basic shapes as you can find in photographs. Cut an assortment of various sized shapes. Assemble them to form such things as - a city street; a freight train; a circus scene.

3. COMPARISON OF SIZES

STRATEGIES:

Listen to Ethel S. Berkley's "The Size of It." Compare the size of things in your surroundings.

Look at a reproduction of Morisot's painting, "The Green Parasol" to identify the sizes of objects in the picture. Which are the more important objects?

Draw a picture to show important things big and less important things small. Show, for example: an animal family; a house with a garage and a dog house; a tractor-trailer; a car and a bus.

4. DISTINCTION OF ROUNDNESS AS OPPOSED TO FLATNESS

STRATEGIES:

Distinguish between flat and round objects around you - a painting; a tree; a clay pot.
Model a form from a lump of clay to get the feeling of roundness. Pinch, pull, squeeze or push a form from one lump of clay.
See how two dimensional paper may become a three dimensional form by pleating, curling, and attaching paper strips to a background.
Construct with scrap wood, using hammer and nails - an imaginary animal; a new style house; a toy you invented.

POSITION IN SPACE

1. SELF-IDENTIFICATION

STRATEGIES:

Look at a polaroid photograph of the class. Which person are you? How do you know? Make a picture so everyone will known who you are.
Look in a mirror. Who do you see? Draw you.
Paint a picture of you and each person in your family. Name each one.

2. AWARENESS OF PARTS OF THE BODY

STRATEGIES:

Feel the shape of your head. What shape is it? Draw that shape in the air. Feel your neck. Where is it? What does it do? (Do the same for the other parts of the body.) Draw yourself as tall as the paper. Add as many little things such as fingers to make your picture just like you.
Play "Simeon Says." When your turn comes to sit down, draw yourself in your last position.
Look at Johnny to see how many things you would have to draw to make a picture of him. Name the parts and count as they are named. Draw a picture of yourself and add as many parts as you counted.

3. RELATIONSHIP OF THE BODY TO OTHER OBJECTS

STRATEGIES:

Sit on a chair. Jump over a line. Crawl under a table. Walk around a desk. Stand in a box. Step out of a circle. Select one thing you did and make a cut paper picture to show you and where you are with the object.

Listen to the poems:

Feet can dance and
Feet can skip;
Feet can run fast,
Feet can trip.
Feet can hop and
Feet can help slide
Down a hill.
Feet can skate.
Feet can climb;
Feet can jump rope
To a rhyme.
Feet can tiptoe
Very still;
Down the street.
What can YOU do
With YOUR feet?

****

Hands can lift
A box or chair;
Hands can toss things
In the air.
Hands can sweep
The kitchen floor.
Hands can open
The front door.
Hands can cut
And paint and draw;
Hands can carry,
Clap and saw.
Hands can lead
Rhythm bands.
What can YOU do
With YOUR hands?

****

Make a painting to show what you can do.

4. AWARENESS OF POSITIONS OF BODY PARTS

STRATEGIES:

Show what you would do with each -
- a boot for the right foot
- a catcher's mitt
- a doll
- a jump rope

Draw yourself and the object. Be sure you are holding it or wearing it in the right place.

Show -
- how you bend your arm to throw a ball
- how you use your foot to kick a football
- how the Safety stands
- how the policeman stops traffic

Make a torn paper picture to show someone using his arms or legs.

SPATIAL RELATIONSHIPS

1. PERCEPTION OF HOW OBJECTS OCCUPY SPACE

STRATEGIES:

Draw a small circle on the floor. Stand within it. Why won't anyone else fit within the circle?

Try crawling into cardboard boxes of varying sizes. Which do you fit into? Why?

Use a large cardboard carton and a number of cardboard tubes and small boxes. Arrange and rearrange the small objects inside the big box to show that objects take up space.

Experiment by arranging things in space. Try packing -
food in your lunch box
clothes in your drawer
toys in your toy box.

2. LOCATION OF OBJECTS IN RELATION TO EACH OTHER

STRATEGIES:

Listen to the reading of the book, "Ups and Downs" by Ethel S. Berkley. Identify -
up and down
high and low
top and bottom
under and over

Identify objects in your surroundings with the above relationships.

Look at the SVE series of photographs of farm animals. Use as many words indicating spatial relationships to describe the objects as you can.

Comprehensive Health Education

In the classrooms of the Wayne-Carroll Public Schools at Wayne, Nebraska the multi-text approach is used for health education. Units are prepared by the classroom teachers. The approach is multi-sensory and inquiry-oriented. Health is taught as a regular class. Health education is also integrated into other curriculum areas and at such times as lunch period, recess, science, literature, social sciences and at other opportune times.

Suggested Scope and Sequence Chart (Taken from Guidelines for Comprehensive Health Education issued by the State of Nebraska, Dept. of Ed., Division of Instructional Services)

1. Alcohol
2. Anatomy
3. Community Health
4. Consumer Health
5. Dental Health
6. Disease Control
7. Drugs and Narcotics
8. Family Relationships
9. Health Careers
10. Heredity and Environment
11. Human Growth and Development
12. Mental Health
13. Nutrition
14. Physical Fitness
15. Physiology
16. Safety
17. Smoking

A student who has a language disability requires some basic curriculum changes that will allow him to succeed rather than fail. It is recommended that:

1. The multi-sensory approach should be used, based upon either the visual, auditory or tactile mode of learning.
2. To teach a concept, the process should be to start with the concrete approach, move to semi-abstract, then to abstract.
3. When a student is required to read, tape recordings of the material should be available to him.
4. The student should have a teacher-prepared study guide which will serve as an outline of important points, an assist to memory and a review instrument. Include vocabulary words that are new and that you want him to remember.
5. The student who had difficulty writing and spelling should be allowed to give oral answers to the teacher, to another student, or to record them on tape.
6. If a student has difficulty reading a test, it should be read to him.
7. A series of activities should be included in the units which will provide for all students so that they can all be actively involved.

Alcohol	Suggested Activities - Grades 4-5-6
Beverage alcohol is usually obtained from fermentation of fruits and grains.	Prepare a display of pictures, either magazine pictures or pupil drawings, which show the sources of various alcoholic beverages.
The affects of alcohol on the body are related to a variety of factors	Have a local policeman discuss the problems caused by drinking drivers. Give oral reports in class telling about the effect of alcohol in sports, driving an automobile, flying, and in occupational skills. Prepare a scrapbook which includes pictures and articles concerning the problems created by the use of alcohol. Display illustrations on the bulletin board of accidents and other losses attributed to alcohol. View film #00252 "Alcohol and You," available at the Educational Service Unit One film library. View film #00362 "Drinking - How will Charlie Handle It," available at the Educational Service Unit One film library.
Social drinking is acceptable in many societies	Present oral reports which tell about the use of alcohol on special occasions by different societies (at meals, celebrations, holidays).
Alcohol is used in many different ways in our society	Create posters which will be displayed which show the instances where alcohol is used as a preservative, disinfectant, or drug .
People drink for many reasons.	Prepare a list in class of the reasons teenagers and adults give for drinking. Evaluate them orally. Collect advertisements from magazines on alcoholic beverages and analyze them in class. Have an oral discussion of why the following would be interested in whether an individual would drink or not: family, church, government, liquor industry, welfare agencies, employers?

Immoderate use of alcohol may cause many personal and community problems.	Present oral reports in class discussing the variety of reasons people give for drinking to excess. Ask a person from a welfare office to come to class and discuss problems related to alcohol: (a) financial (b) work efficiency (c) child neglect (d) respect for family members. Discuss why individuals who know how alcohol affects sensory perception still drive after they drink. View the film "Drinking - How Will Charlie Handle It," #00362, available at the ESU #1 film library.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. American Medical Association. Todays' Health Guide. (Chicago: American Medical Association, 1965.
2. Jellinch, E. M. The Disease Concept of Alcoholism. (New Haven, Connecticut: Publication Division, Yale Center of Alcohol Studies, 1960)
3. Licensed Beverage Industries, Inc., 115 East 44th Street, New York, New York 10017.
4. McCarthy, Raymond G. Alcohol Education for Classroom and Community. (New York: McGraw-Hill Book Company, Inc., 1964)
5. Mayshark, Cyrus and Leslie W. Irwin. Health Education in Secondary Schools. (Saint Louis: C. V. Mosley Company, 1968)
6. Pittman, David and Charles R. Snyder, Society, Culture and Drinking Patterns. (New York: John Wiler and Sons, Inc., 1962)
7. Rutgers University Center of Alcoholic Studies, Smithers Hall, Box 554, New Brunswick, New Jersey 08903.
8. Todd, Frances. Teaching About Alcohol. (New York: McGraw-Hill Book Company, 1964)
9. Yale Center for Alcohol Studies, 52 Hillhouse Avenue, Yale Station, New Haven, Connecticut 06500.

Anatomy	Suggested Activities - Grades 4-5-6
The cell is the building block of all living things.	View "the cell" under a microscope or microviewer. Display the large plastic model of a cell. Discuss the parts and label them during the discussion. Draw either on paper or on transparency film a cell. Label parts and give an oral explanation. View the film "Your Body Repairs - Maintains Itself," #00081, availabe at the library of Educational Service Unit One.
Cells differ in order to perform their specific work.	Examine different types of cells under a microscope or on filmstrip and discuss the characteristics and the functions of each.
Cells combine into tissues and tissues become organs	Examine the life-size model or other models of the organs of the torso. Encourage the students to examine them tactually-feel the shape and size. Examine and dissect specimens of animal organs, such as a heart. Dissect a frog or earthworm and view the various organs. Play a game "Who Am I?" The teacher or students discuss the function of an organ and the class identifies it. Reverse the process.
The skeletal system is a multipurpose system	Collect and examine animal bones. Show cross-section of bone tissue. Examine a model skeleton or a skeleton chart. Study and discuss how bones fit together. Discuss and view the types of joints, such as ball and socket, hinge, immovable, pivot, and others. Show examples of ligaments and tendons and discuss their function. A chicken leg and foot could be used to demonstrate this. Demonstrate the protective function of the ribcage, skull and pelvis by using a model.
Muscles help man to perform a variety of body activities.	View the filmstrip "Human Body Framework," available at the Media Center. Demonstrate examples of the performance of the voluntary and involuntary muscles.

Anatomy	Suggested Activities - Grades 4-5-6
	Listen to an oral report of how the muscles become stronger; isotonic and isometric muscle contraction.
Muscles work cooperatively; one muscle group contracts while the other group lengthens or relaxes.	View the section on muscles in the filmstrip "Human Body Framework," available at the Media Center. Prepare transparencies or drawings which show the flexor and extensor muscles.
Muscle tissue differs	Demonstrate, by using transparency film or paper, the appearance of smooth, cardiac and striated muscle tissues. Use labels. View the section on muscles in the filmstrip "Human Body Framework," available at the Media Center.
The skin functions in a variety of ways	Show and discuss slides of skin cells. Study a model showing parts of skin. Display drawings showing parts of skin. Discuss the protective coverings of humans, animals, birds, insects, and reptiles. Make a picture collection of these examples.
The human body requires daily care.	View the film "Cleanliness and Health," available at the film library of Educational Service Unit One. Display an illustrated list of those things a student should do to care for his body. Include bath, shower, washing hair, nail care, washing before meals and after lavatory use.
Personal cleanliness is an individual responsibility	Display humorous illustrations of good grooming rules. Set up an attractive bulletin board illustrating well-groomed children. Display in the classroom books which pictorially show good grooming. Those available at the Media Center are: Pushups and Pinups by J. Bendick, Betty Cornell's Teen-age Popularity Guide, by Betty Cornell, A Teen-age Guide to Healthy Skin and Hair by Lubowe, Here's to You, Miss Teen by Mary Sue Miller, and The Seventeen Book of Fashion and Beauty by Seventeen Magazine, Right Dress (for boys) by Burt Bacharach, Dress by Bess V. Clerke, and How You Look and Dress by Carson.
Physical activity develops strength, flexibility, and general good health.	Discuss the physical fitness test administered within the school. Ask the physical education teacher to speak to the class.

Anatomy	Suggested Activities - Grades 4-5-6
	Discuss playground activities in the school. What are the objectives?
	Prepare a display of pamphlets and other publications on personal fitness, growth, development and maturation.
	View the filmstrip "Posture and Exercise," available at the Media Center. Discuss after viewing.
	Display the book Pushups and Pinups by J. Bendick, which deals with diet, exercise and grooming and has illustrations. It is available at the Media Center.
The senses help us to communicate with the world around us.	Develop a bulletin board and display showing the role of each of the senses, using pictures, diagrams, and original drawings.
	View the filmstrip, "You and Your Five Senses," available at the Media Center. View filmstrip, "Human Sense Organs."
	Display a model of the ear. Diagram its structure.
	View the filmstrip, "You and Your Ears," available at the Media Center.
	Prepare a transparency of the parts of the ear using difficult colors for various parts.
	Ask the school nurse to speak to the class about ear care and demonstrate an audiometer.
	Construct a clay or paper-mache model of an ear.
	View the film, "You and Your Five Senses," available at the film library of Educational Service Unit One.
	Display and discuss a model of the tongue and locate the areas of taste.
	Taste a variety of food and discuss the sensation and how certain foods disguise other tastes.
	Prepare a list of various ways the sense of smell makes life more pleasant.
	Compile a list of "My 10 Favorite Fragrances." Examples: Christmas trees, cookies baking, fresh sheets, autumn air. If the student finds it difficult to make a list he can draw pictures.
	Display and discuss a model of the nose.
	Display and discuss a model of the eye.

Prepare a diagram on a transparency or on paper showing the parts of the eye.

View the filmstrips "You and Your Eyes," and "The Eye at Work," available at the Media Center.

View the film "Our Wonderful Eyes and Their Care," #00011, available at the film library of the Educational Service Unit One.

Listen to oral reports on (a) symptoms of eye difficulty, (b) importance of eye examination, (c) general eye care, (d) contact lenses.

Compare the function of a camera to the function of the eye.

View the filmstrip, "The Camera - A Magic Eye," available at the Media Center.

Arrange for an eye doctor or school nurse to visit the class and tell about the eye.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. Best, Charles H. Human Body. (Boston: Houghton-Mifflin Company, 1964).
2. Frohse, F., M. Brodel, L. Schlossberg. Atlas of Human Anatomy. (New York: Clay-Adams Publishers, 1961)
3. Grollman, S. The Human Body. (New York: The Macmillan Company, 1964)
4. Hanlon, John J. and Elizabeth McHase. Design for Health: The Teacher, the School and the Community. (Philadelphia: Lea and Febiger, 1965)

Community Health	Suggested Activities - Grades 1-2-3
Sub concepts	
Without water and air, human life would not continue.	Prepare a bulletin board using pictures of ponds, lakes, rivers, and reservoirs, which are safe sources of water for drinking and recreation.
Germ-free food is essential to good health.	Invite the lunchroom dietician to discuss precautions taken in the kitchen and lunchroom in preparing food for the students. Prepare posters illustrating good lunchroom practices and balanced diet. Take a field trip to a supermarket to study the ways that food is preserved for safe eating.
Our surroundings influence how we feel and act.	To illustrate how our surroundings influence how we feel and act place a tape recorder in the gymnasium, lunchroom, library or classroom. Record a few minutes of noise-level from each room.
Many people work to keep water and air safe.	Invite a water department representative to discuss water purification.
Each of us can improve his environment.	Role-play examples in which courtesy is used (holding doors, respecting cafeteria lines, taking turns, and excusing oneself.)
Human life depends on water and air.	Use a pupil-prepared transparency on the overhead projector to illustrate the water cycle. Use films from the E.S.U. I library. Those available are: "Clouds" "What in the World is Water?"

Community Health	Suggested Activities - Grades 4-5-6
Human life depends on water and air.	View the films available from the film library at the Lincoln City Libraries in Cooperation with the Nebraska Public Library Commission: 1. The Gifts 2. Yours is the Land View the film, "What in the World is Water," available at the film library of E.S.U. I. Also available is "Water Pollution - A First Film." Make a diagram of the water cycle and use it as a bulletin board.

Community Health	Suggested Activities - Grades 4-5-6
	Observe a demonstration of how various foods absorb water. Make a display of dehydrated foods. Discuss the process of dehydration. Invite a member of the City Council or a city employee to the classroom to discuss the nature of air pollution and the role of the health department, and the city regarding this problem. Prepare a display of pictures showing water pollution and the serious problems that it presents. Bring into the classroom various types of filters, such as for air conditioners, humidifiers, stove hoods, furnaces and automobile anti-pollution devices.
Radiation in the air has come to be considered a pollutant.	Make a display of pictures and discuss them showing the various sources of radioactive particles and the hazards they present to water and food. Listen to a report telling about the efforts of the Atomic Energy Commission to maintain surveillance over the amounts of radiation to which the public is exposed, e.g. radium dial watches.
Disposal of sewage and garbage is a growing problem.	Invite a local public official, such as a City Council member, to come to the classroom and discuss the laws in the community which govern waste disposal. Take a trip to the municipal sewage disposal plant. Conduct a discussion on local efforts to protect water (proximity of sewer lines to fresh water lines), water purification methods, recycling techniques. Make a display of pictures showing garbage-waste disposal problems confronting urban areas (caused by population concentration and industry). Discuss the process of recycling waste products. View the film, "What Are We Doing To Our World?" available at the film library of the Lincoln City Libraries in cooperation with the Nebraska Public Library Commission. Another film available is "Boomsville."

Community Health	Suggested Activities - Grades 4-5-6
Improper sewage or waste disposal can contribute to the transmission of disease.	View Part I of the film "What Are We Doing To Our World?" available from the film library of the Lincoln City Libraries in cooperation with the Nebraska Public Library Commission. Other films available are "The Rise and Fall of the Great Lakes," "Look to the Land," and "Alone in the Midst of the Land." View the films, "The Aging of Lakes," and "Water Pollution-A First Film," available at the film library of E.S.U. I.
We are dependent on many people for safe water and air.	Plan a field trip to a water treatment plant or to a conservation area. Follow-up with a class discussion on the variety of responsibilities in these areas and a discussion of federal, state and local laws concerning these areas. Prepare a display of pictures or draw posters which show how students could maintain recreational and camping areas, preventing pollution. Discuss unsanitary practices and areas in the community. Determine if the law is being broken and if there is an agency to correct the problem.
Our immediate surroundings, including the people in the surroundings, have an affect on us.	Make a pictorial display showing atmospheric conditions which affect an individual's performance in daily activities (temperature, relative humidity, cloudy or bright). Do the same with the peripheral conditions which affect an individual's performance in daily activities (noise-level, motion around him, odors). Take an outdoor trip. Investigate knowledge needed about environment factors and equipment required to maintain comfort. View the film, "Cleanliness and Health," available at the film library of E.S.U. I.
Many organizations help prevent and control disease.	Listen to reports discussing the variety of diseases in the world, why certain areas have specific diseases that are not found elsewhere. Use journals secured from the World Health Organization (WHO). On a world map, show the concentrations of certain diseases. Invite the school nurse to discuss the importance of immunization programs. Make a chart showing diseases for which vaccines are available and chart pupils in class who have been immunized for each.

	View the film "Living Insurance," available at the film library of the Lincoln City Libraries in cooperation with the Nebraska Public Library Commission.
Many organizations help us in preventing disasters.	Invite representatives of the American Red Cross, Salvation Army and Civil Defense to explain their role in such events as floods, tornadoes, fire and nuclear warfare.
	Discuss school programs and pupil participation in survival plans.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. Anderson, C. L. Health Principles and Practice. (St. Louis: C. V. Mosley Company, 1968).
2. Nebraska Department of Health, State Capitol, Lincoln.
3. Wilgoose, Carl E. Health Education in the Elementary School. (Philadelphia: W. B. Saunders Company, 1969).

Consumer Health	Suggested Activities - Grades 1-2-3
Sub concepts	
Protective measures are taken to make certain that food is safe for human beings to eat.	Visit a grocery store. Have the manager discuss government inspection and regulations controlling food safety.
Foods are packaged and stored to keep them clean and healthful.	Make a display of various types of food containers illustrating how food is kept safe to eat. Talk about ways that fresh and frozen foods are transported.
Our government has pure food laws which protect health.	Collect a variety of food labels and discuss what the labels tell about the food that is inside the container.
Health information whether correct or not, may come from various sources	Make a mural showing the various ways through which we acquire health information.
Emotions, family patterns and values influence selection and use of health information, products and services.	Have students collect clippings advertising products and identify words that have emotional overtones. Point out ways in which people are influenced to buy and use these products. Make a scrapbook, posters or bulletin board display with collected materials. Tape-record radio or television commercials relating to children's health, and help children to evaluate and discuss advertising.
The physician's advice and assistance is important in taking prescribed doses of medicine over a period of time.	Conduct a student-parent "Clean out the medicine cabinet campaign." Discuss safe disposal of unused medicines.
Many individuals have contributed to the good health we have today.	Listen to oral reports given by capable students discussing the lives and contributions of people such as Pasteur, Lister, Fleming, Reed, and Salk.

Consumer Health	Suggested Activities - Grades 4-5-6
Emotions, family patterns and values influence selection and use of health information, products and services.	Collect clippings of advertised products and identify words that have emotional overtones. Point out ways in which people are influenced to buy and use these products. Make a scrapbook, posters or bulletin board display with collected materials. Listen to radio or television commericals relating to children's health and help children to evaluate and discuss this advertising. Participate in a play which was student-written, such as: "The Medicine Man of the Old West" or "The Medicine Show." Discuss the terms "quack" and "nostrum."
Religious beliefs, customs, superstitions, faddism, cults, and family-all influence consumer buying.	Check with parents, neighbors, relatives and list some supersitions which they may have about their health practices or which they may have knowledge of.
Many health agencies and organizations serve, protect and inform the consumer.	Develop a bulletin board display illustrating the health protection afforded by community, state and national agencies.
Laws and regulations protect our health and health of others.	Discuss the role of national and international agencies, such as the Food and Drug Administration, Federal Trade Commission, Department of Agriculture, Post Office Department, Health Department, UNESCO, and the World Health Organization. Visit the school cafeteria and have the cafeteria personnel explain the requirements and inspections they must meet. Listen to discussions of the role of professional groups, such as the American Medical Association, The American Dental Association, and voluntary groups such as the American Cancer Society and others. Discuss the laws that protect the consumer such as the Meat Inspection Act; Food, Drug and Cosmetic Act and Milk Act.
Some food labels and advertising are misleading.	Collect labels and advertisements to discuss their ambiguity and consequent influence on the consumer.

Consumer Health	Suggested Activities - Grades 4-5-6
Possible harm can result from self-diagnosis, self-medication, and the careless ingestion of drugs, medicines and other substances.	Discuss the difference between food facts and misinformation. Listen to reports that the class gives on current magazine and newspaper articles. Invite a pharmacist to speak on new drugs and certain manufacturing and safety precautions.
The physician's advice and assistance is important in taking prescribed doses of medicine over a period of time.	Invite the school nurse to discuss safe use and handling of hazardous substances, drug side-effects, self-diagnosis, and treatment practices. Prepare a panel discussion on self-medication. Include common ailments handled without medical aid, common remedies and superstitions. Conduct a student-parent "Clean out the medicine cabinet campaign." Discuss safe disposal of unused medicines. Make posters or bulletin board displays on the themes of: "I follow directions on the label" or "I don't follow directions on the label."
Health specialists contribute to good health.	Collect materials that illustrate various medical specialists. Post them in the classroom. Listen to oral reports which describe the work of different kinds of doctors. Display pictures of gadgets and devices sold by quacks. These might be obtained from the Food and Drug Administration or other groups.
Many individuals have contributed to the good health we have today.	Listen to individual reports on persons who have contributed to medical research (Pasteur, Lister, Fleming, Reed, Salk). Relate the work of these persons to increased life expectancy and better health. Develop a bulletin board on health services available to students.
Price does not always indicate product quality.	Listen to student reports on amounts of money spent in the United States for amusement, cosmetics, alcoholic beverages, health services, education, vitamins, and other products. Contrast these figures and discuss their implications.

	Compare contents of the same product obtained at high and low prices and quality of items purchased in a discount store. Collect food labels and discuss nutritional value of the listed ingredients and compare prices.
Evaluation of standards, health products and health services requires critical thinking.	Display items or labels from products that are available in various "health food" stores. Evaluate these items on the basis of standards. Discuss health insurance; specifically, school insurance protection. Illustrate with drawings the difference between the terms fortified, enriched, and homogenized.

Bibliography
Selected References and Resources

The following references and resources are suggested to supplement and enrich this unit.

1. American Medical Association. Todays' Health Guide. (Chicago: American Medical Association, 1965).
2. Consumer's Report. Mt. Vernon, New York: Consumer's Union of United States, Inc. (published monthly)
3. Jones, Kenneth L., Louis W. Shainberg, Curtis O. Byer. Health Science. (New York: Hayne and Row, Publishers, 1968).
4. School Health Education Study. Health Education: A Conceptual Approach to Curriculum Design. (St. Paul: 3M Education Press, 1967)
5. U. S. Dept. of Health, Education, and Welfare, Consumer Protection and Health Service, Food and Drug Administration, Washington, D.C. 20204.

Dental Health	Suggested Activities - Grades 1-2-3
Sub concepts	
The use and functions of teeth are many and varied.	
Teeth undergo changes in size, number and kinds with age.	Make a bulletin board display illustrating types of teeth and their functions.
The shape and structure of teeth dictate their purpose and function.	Save and observe primary teeth as lost by class members or collect some animal teeth. Note cavities, stains and any part of the root that is left.
Daily mouth care is important to dental health.	Prepare an interest center where students can see dental tools, animal teeth, human teeth, tooth models-healthy and decayed-toothbrushes, etc.) Demonstrate with a large model of teeth and a toothbrush the proper way to brush teeth. Demonstrate also care of toothbrush. This demonstration might be given by a local dentist or the school nurse. Show an appropriate filmstrip demonstrating proper methods for the care of teeth. Demonstrate ways of cleaning teeth when a brush isn't available (swish and swallow, eating an apple, etc.) Make toothpowder in class. Students mix the following ingredients in the proportions indicated: 1 teaspoon salt, 2-3 teaspoons baking soda, and a drop or two of peppermint, wintergreen or cinnamon. Allow pupils to take some home to use when brushing teeth.
Food in all forms affects the teeth.	Role-play the villain "sugar" or "candy" attacking a healthy tooth. (A toothbrush brigade would involve whole class.) Display and discuss magazine pictures showing good and bad foods for teeth, using a "Happy and Sad Tooth" chart. Observe the progress of decay in two apples by breaking the skin of one and leaving the other intact. Place both apples in a place where they can be seen for a few days and relate that to what happens in the dental decay process.

Dental Health	Suggested Activities - Grades 1-2-3
	Have each child eat a cracker and with his tongue feel the coating of food on the teeth. Then have each student eat a piece of carrot, celery, or apple and note how much cleaner the teeth feel. Let students observe the results of cutting marshmallows and apples with a knife to demonstrate differences as to how food sticks to the teeth. Apply the results of dental hygiene.
Food in all forms affect the teeth. continued	Show films or filmstrips which are appropriate to any of the above subconcepts. Use the packet of posters, "Your Dental Health," available at the Media Center.

Dental Health	Suggested Activities - Grades 4-5-6
Teeth contribute to appearance, digestion, and speech	With the use of a tape recorder, practice sounding letters of the alphabet to demonstrate the importance of teeth in speaking. Make posters illustrating how teeth affect appearance (To avoid embarrassment, be cautious of children who may have dental problems). Make an exhibit of smiling children on a bulletin board. Discuss and demonstrate the practice of chewing our food well to aid the process of digestion. View the film "A Dentist in the Classroom," which is available from the Educators Progress Service, Inc., Randolph, Wis., 53956. View the film "Project: Teeth" (7104), available from the Educators Progress Service, Inc. Randolph, Wis. 53956. View the film "What Do We Know About Teeth?" (7105), available from the Educators Progress Service, Inc. View any of the following films available from the University of Nebraska Film Library, Instructional Media Center, University of Nebraska, Lincoln, Nebr. 68508: "Dental Health-How and Why" "Save Those Teeth" "Teeth-Their Structure and Care"

Dental Health	Suggested Activities - Grades 4-5-6
	"Teeth White-Teeth Bright" "Teeth Are to Keep" "Teeth, The Development and Care" "Tommy's Healthy Teeth" "Your Teeth"
Structure and kinds of teeth have specific purposes.	Borrow x-ray photographs from a local dentist to study tooth structure. Discuss and diagram a tooth, showing and labeling each part and naming its function. Make a display of pictures showing the types of teeth various animals have and relate the kind of teeth they have to the kind of food they eat. Examine a large tooth model. Identify nerve, root and gums. Examine extracted teeth obtained from a local dentist. Identify decay, nerve, root and gums. Discuss how teeth grow by examining a model of teeth and jaw. Make a chart naming different kinds of teeth and showing at what approximate ages they arrive.
Dental health is affected directly by the variety and selections of food we eat.	Make a scrapbook or prepare a display showing foods with high carbohydrate content and low carbohydrate content. Ask a dental hygienist for a table of foods with "Hidden Sugar." Estimate the cost of the "sweet-tooth" habit and compare it with the established cost of more wholesome food. Observe lunchroom menus for a week and list the foods containing nutrients for dental health and foods that are nature's "toothbrushes." Conduct a small-group demonstration. Have six students eat chocolate cookies and have one brush with water, one swish and swallow, one eat an apple, one eat a carrot, and one eat celery and one do nothing. Compare the residue left on teeth and ask students to describe each cleaning method. Demonstrate the results of cutting marshmallows and apples with a knife to demonstrate differences as to how food sticks to the teeth. Apply the result to dental hygiene.

Dental Health	Suggested Activities - Grades 4-5-6
	Study diet plans for the control of tooth decay. Invite a dentist to explain more about this and the relationship of sweets to tooth decay.
A primary key to successful dental health is regular personal care.	Show any of the films listed in the first subconcept. Survey the class and chart the brushing habits of the students. Encourage brushing and/or some personal care immediately after meals. Demonstrate the proper way to brush teeth and discuss the importance of the length of brushing time. Use the disclosing tablet test in class to illustrate effective brushing. Ask the school nurse to help with this demonstration.
Tooth decay is caused by acids forming in the mouth.	Prepare a bulletin board of posters which show the decay process. Discuss the process. Show the acidity or alkalinity of the mouth, using ph paper. Give pupils strips of paper, instructing them to soak sterile cotton swabs with saliva and apply to the paper. The degree of acidity or alkalinity can be determined by comparing resulting color of paper strips with color chart provided by manufacturer. A ph of 7 indicates a neutral mouth; below 7 indicates an acid mouth; and above 7 shows an alkaline mouth. To show that acid will weaken substances containing calcium (such as tooth enamel) place a whole egg in a bowl of vinegar (acetic acid) for about 24 hours. The eggshell will become soft, as the vinegar decalcifies the shell. Illustrate how acids dissolve calcium from sterilized, extracted teeth. Place one tooth in 1% solution hydrochloric acid and another in plain water. Allow to stand for a week and note the differences.
Regular dental checkup by a dentist helps to control dental disorders.	Discuss modern dental care and compare it with that of 50 years ago. Show any of the films that are listed in the first subconcept Draw pictures of healthy and unhealthy teeth and discuss mouth and tooth diseases. Discuss malformation of teeth and how teeth depend on each other for alignment.

Dental Health	Suggested Activities - Grades 4-5-6
	Investigate the values of x-ray films on dental health and treatment.
	Listen to an oral report answering the question: "What must we do to take care of our teeth?"
Habits of safety in play must be developed to avoid injury to teeth.	Discuss habits and other behavior that might damage teeth. Some examples are: biting hard objects, opening bobby pins, cracking nuts, chewing pencils, chewing ice, chewing hard candy, bumping drinking fountains, and falling off bicycles.
	Determine how many class members have had accidents injuring teeth. Discuss how they might have been prevented.
	Listen to safety jingles, limericks, and slogans pertaining to oral safety.
	Make posters encouraging safe play; display them in appropriate places.
	Serve as a playground safety monitor.
	Invite a dentist to discuss safety practices which may prevent accidents involving the mouth.
Critical thinking must be applied to selecting products pertaining to dental health and dental services.	Make a display of toothpaste advertising and compare and evaluate their products and appeals.
	Prepare scientifically correct commercials.
	Listen to reports of how to be a wise consumer of dental products.
Community resources provide help for dental care.	Examine and discuss information about flourides and flouridation of water.

Bibliography

Selected References and Resources

The following selected resources may be made use of in supplementing and enriching this unit.

1. American Dental Association, Bureau of Dental Health Education, 211 E. Chicago Avenue, Chicago, Illinois 60611.
2. Nebraska Dental Association, 134 South 13th Street, Lincoln, Nebraska 68508.
3. Local Health departments:
   Omaha-Douglas County Health Dept. 1201 South 42nd Street, Omaha, Nebr. 68105.

Lincoln-Lancaster County Health Dept., 2200 St. Mary's Avenue, Lincoln, Nebraska 68502.
Grand Island-Hall County Health Department, P.O. Box 1698, Grand Island, Nebraska 68801.
Scotts Bluff County Health Department, Courthouse, Gering, Nebraska 68341.

4. Local dentists.
5. County dental consultants (Dental Association representative)

Disease Control	Suggested Activities - Grades 1-2-3
Subconcepts	
The spread of disease may result from person-to-person contact.	Have students pass a ball representing germs to one another. Call the ball "chicken pox," "measles" or some other childhood disease. Discuss exposure and contamination.
We can help ourselves to stay healthy.	Construct a bulletin board display on good health habits.
We can help each other to remain healthy.	Role-play the proper way of behaving around others when one is ill. Demonstrate how to prevent spread of disease when coughing, sneezing, eating, talking, etc.
Our respiratory system performs many important functions.	Observe students after they have exercised for a minute. Talk about the increase of breathing rate. Illustrate the body processes involved. Have students exhale onto palm of hand to feel heat and moisture exhaled from lungs. Explain.
We can avoid contacting respiratory diseases.	Use an atomizer to demonstrate how coughing and sneezing spreads germs.
The heart is the key part of the circulatory system	Allow students to listen to a classmate's heart with a stethoscope; discuss why a doctor uses such an instrument.

Disease Control	Suggested Activities - Grades 4-5-6
Many persons have contributed to our present knowledge about diseases.	Listen to committee reports on scientists who have made significant contributions to human health, such as Jenner, Lister, Pasteur, Salk and others. Make a bulletin board display which illustrates the great discoveries made by Jenner, Lister, Pasteur, Salk and others. View any of the following films available at the film library of the Lincoln Public Library in cooperation with the Nebraska Public Library Commission: "Miracle from Mold" "Unconditional Surrender" "Wild Cell"

Disease Control	Suggested Activities - Grades 4-5-6
We share the earth with many other living things; some of them are microorganisms.	View microorganisms which are on prepared slides. Draw some of the organisms that are viewed on the slides. Become accustomed to using the following terms correctly: protozoan, microorganisms, virus, bacteria.
Microorganisms grow rapidly	Grow gardens of bacteria in Petri dishes; some under ideal conditions of light, heat and moisture; others under less than ideal conditions. Discuss the results. Prepare drawings showing the conditions necessary for growth and reproduction of bacteria.
Microorganisms may cause disease.	Discuss students' own experiences with childhood diseases. Describe prevention measures taken to avoid certain diseases. Prepare a list of diseases caused by microorganisms and a list of those which are not.
Our bodies have built-in defenses against many diseases.	Discuss the protective function of the skin and that of the mucous lining in nasal cavities. View either of the films listed, which are available from the film library of E.S.U. #1: "Physical Fitness and Good Health" #00242 "Your Body Repairs-Maintains Itself" #00081 View the film strip "Body Defenses Against Disease," available at the Media Center of the Middle School. Illustrate on paper or on overhead projector transparencies the functions of white blood cells engulfing foreign bodies. Listen to a discussion of the term "natural immunity."
Effective disease control involves an individual contribution.	Participate in or listen to panel discussions of all possible ways to prevent the spread of disease. Invite the school nurse to discuss disease control in the classroom. Develop individual posters depicting ideas about disease control and make a display using them.

Disease Control	Suggested Activities - Grades 4-5-6
	Discuss disease prevention with adults and parents. Bring individual discussions back to class.
Disease may spread from community to community and from country to country.	Discuss how a disease organism may travel from country to country. Include animal quarantine. Invite the school nurse to discuss community procedures for epidemic control. Listen to discussions of the role of our immigration and custom authorities in controlling disease transmission from foreign countries.
Organizations help to fight disease on a local and world level.	Discuss the function of voluntary health agencies. Invite the school nurse or a doctor to speak to the class about work of health agencies.
Cancer is a disease involving abnormal cell growth.	Cancer View cancerous plant growths such as galls and burls. From this observation relate to animal cells which grow in the same manner. Discuss the effects of a weed invasion in a flower bed or a vegetable garden and relate this to abnormal cells invading normal cells. Prepare a bulletin board display using illustrations of anything having to do with cancer. The American Cancer Society, Inc., National Headquarters, 219 E. 42nd Street, New York, N.Y. has large amounts of free literature which would be helpful. Also helpful would be the set of American Cancer Society School Visual Aids which illustrate cells, their division, blood cells, benign tumors, malignant growths, and a stomach cancer. These are available in vertical file P, 614.5, p189 at the Middle School vertical file. View the film "From One Cell," available from the American Cancer Society. Display the wall chart guide called, "Combat With a Traitor-Cancer," available from the Eli Lilly Company, Indianapolis, Indiana 46206. View the following film which is available from the Lincoln Public Library in cooperation with the Nebraska Library Commission: "Wild Cell"

Disease Control	Suggested Activities - Grades 4-5-6
The increase of cancer presents a major health problem of concern to all persons.	Investigate cancer statistics: types, detection and cure. Discuss self-examination and the importance of recognizing the danger signs.
Some of our health habits can increase the risk of abnormal cell growth.	Listen to reports or panel discussions which give evidence linking cigarette smoking and lung cancer. (Refer to Smoking unit for additional information.) Listen to a discussion of some of the cancer research done with animals.
Many types of cancer can be cured.	Discuss how good health habits can help in the early detection of cancer and other diseases through annual checkups, specific examinations and tests, self-examination and communication with adults. Invite a representative of the American Cancer Society to tell of the work of the organization in the fight against cancer.
	Respiratory Diseases
The respiratory system may be impaired or irritated by disease.	Use the model of the respiratory system which demonstrates lung and diaphragm action. This model is available in the retrieval center of Project Success, Title III. View the filmstrip "The Human Respiratory System," #138, available at the Middle School Media Center. Listen to reports telling about the diseases of the respiratory system and indicate which part of the system is affected. Discuss students' own experiences with respiratory diseases. Prepare drawings or overhead projector transparencies of the parts of the respiratory system. Use these as a classroom display.
Respiratory disease control is an individual, community and world problem.	Prepare a classroom display of pictures, charts and articles about the effect of cigarette smoking on health. Listen to oral reports taken from any of the following book, available at the Middle School Media Center: This Vital Air, This Vital Water, Aylesworth, 614 A978t Clean the Air! Fighting Smoke, Smog and Smog Across the Country, Lewis, 614.71 L673c.

Disease Control	Suggested Activities - Grades 4-5-6
	The Air We Live In - Air Pollution: What We Must Do About It, Marshall, 614 M368a. Lets' Go to Stop Air Pollution: Chester, 628 C5251 Clean Air - Sparkling Water - The Fight Against Pollution, Shuttlesworth, 614 S562c. Make drawings on paper or on transparency film which show invasion of air, how a car engine works and other aspects of air pollution. The above books include many drawings and pictures which the LD student would benefit from studying. Discuss how individual health habits may affect the body's resistance; relate these habits to respiratory disease. Participate in group discussions where research is presented having to do with organizations concerned with respiratory disease on the community, state, national and world level. Follow up with brief oral and/or written reports on committee findings.
	Circulatory Diseases
The circulatory system is made up of a variety of structures.	View the pumping action of the heart and the major blood vessels by using the model of the pumping heart, available from the Project Success, Title III equipment and material retrieval center. View transparencies or charts showing the heart and the major blood vessels. Obtain an animal heart from a local butcher. Cut it in half and examine it carefully to see if the auricles, ventricles, valves, and the muscle wall dividing the two sides of the heart and blood vessels can be located. View either of the following filmstrips which are in the Middle School Media Center: "Human Circulatory System," #135 "The Heart and Circulation," #49
Diseases of the circulatory system are many.	Invite a doctor or the school nurse to discuss some of the more common heart and circulatory problems. Present possible preventive measures.
The circulatory system is influenced by many factors.	Demonstrate the effect of exercise on circulation. A stethoscope might be used to determine the difference before and after exercise. Display a chart which shows the effect of cigarette smoking on the rate of heart beat.

Disease Control	Suggested Activities - Grades 4-5-6
	Listen to a group discussion of how foods, fatigue and rest affect the circulatory system.
Many groups and agencies are engaged in research concerning the circulatory system.	Listen to a representative of the local chapter of the American Heart Association to discuss the work being done to solve circulatory system problems. Invite a doctor or the school nurse to tell about the control, treatment, education and current research on cardiovascular problems.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. Jones, Kenneth L., Louis W. Shainberg, Curtis O. Byer. Health Science. (New York: Harper and Row Publishers, 1968)
2. U. S. Surgeon General Advisory Committee. Smoking and Health: U. S. Department of Health, Education, and Welfare, Bulletin No. 1103, Washington, D.C., 1964.

Drugs and Narcotics	Suggested Activities - Grades 1-2-3
Subconcepts	
Medicines designed to cure and prevent sickness can be dangerous when improperly used.	Invite a druggist to visit the class. He might discuss the safety factors associated with medicine as well as possible harm from misuse. Make a display of various poison labels so that children will learn to identify them.
Physical hazards are posed by misuse and/or abuse.	Role play what should be done if, by mistake, any substance which is harmful is ingested.

Drugs and Narcotics	Suggested Activities - Grades 4-5-6
Under certain circumstances, following the crowd can be dangerous.	Discuss how great harm can result from "taking a dare" involving the use of unknown substances, candy from strangers, etc. Dramatize a situation in which a student is urged by his friends to take a dare. Discuss the consequences. View the films available at the film library of E.S.U. I: "Not Me" "Marijuana - The Great Escape" "Up Pill - Down Pill" Listen to a discussion of the value of volatile materials and medicines when properly used. Prepare a classroom display of any of the following pamphlets: "Glue Sniffing" - American Medical Association 535 North Dearborn Street Chicago, Ill. 60610 Attn: Dept. of Ed. and Communications Division. "Facts About Narcotics and Other Dangerous Drugs" Science Research Associates, Inc., Chicago, Ill. "Drug Abuse and Your Child" Public Affairs Pamphlet #448 Nebraska State Dept. of Health, Health Education Station Box 94757 Lincoln, Nebraska 68509 "Sniff . . ., Sniff . . . , Sniff . . . , Your Way to Ruin" Nebraska Council on Alcohol Education, Inc. 1345 "L" Street, Lincoln, Nebr. 68508. "Drug Abuse: The Chemical Cop-Out" Nebraska Blue Cross-Blue Shield 72nd and Mercy Road Omaha, Nebraska

	"LSD," "Barbituates," "Amphetamines," and Marijuana" Nebraska Council on Alcohol Education, Inc. 1345 "L" Street Lincoln, Nebraska 68508 "Facts not Fiction about Drug Addiction" Imagination, Inc. 1821 University Avenue St. Paul, Minnesota "What We Can Do About Drug Abuse" Nebr. State Dept. of Health, Health Education Station Box 94757 Lincoln, Nebraska 68509.
Decisions made early in life frequently affect our future.	View the film available from the Lincoln Public Library in cooperation with the Nebraska Public Library Commission: "A Day in The Death of Donny B"
The public is protected against medicines and products that might harm the individual	Invite a local druggist to discuss the proper use of prescribed and patented medicines. Include the purposes of records and laws governing medicines. Prepare a display of container labels. Illustrate that they show the proper use of the products. Listen to a discussion of the purposes and activities of the Food and Drug Administration.
Stimulants and depressants are present in many "common beverages,"	List and discuss the effects of common beverages such as tea, cola drinks and coffee. Include also the affects of alcohol and cigarettes on the body. (Refer to units on Alcohol and Smoking.)
Regular practice and use of stimulants and depressants often lead to stronger drugs.	Listen to a discussion of the habit-forming effects of repetitive use of sleeping pills, tranquilizers, diet pills and other stimulants. Listen to a discussion dealing with experimentation with drugs is the first step to regular use. List and discuss the five categories of drugs: narcotics, sedatives, tranquilizers, stimulants and hallucinogens.

Bibliography
Selected References and Resources

The following selected reference is suggested to supplement and enrich this unit.

Drug Dependence and Drug Abuse; A Selected Bibliography. National Clearinghouse for Drug Abuse Information. Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. ($.60)

Family Relationships	Suggested Activities - Grades 1-2-3
Subconcepts	
Each of us is a member of a family	Develop family awareness by having students color, cut out and paste family member figures in a scrapbook.
Sharing helps to make home a happy place	Dramatize ways in which the family members may share with one another.
Family unity depends on doing many things together.	Prepare a bulletin board of pictures which the students either draw or cut out which show families doing things together. The student should discuss or tell about his picture.
Children make important contributions to the family.	Make a surprise gift for the parents or the home.
There are similarities and differences in family life in other countries.	Invite exchange students to discuss family life in their country. Develop a bulletin board display of people in other countries, emphasizing differences in clothes, customs, games and sports. Taste foods and play games appropriate to other countries.
The family should foster the fullest development of each individual in the family.	Have a talent or hobby show at school. Encourage the children's musical and artistic abilities. Participate in creative activities in class to explore individual potential and family interests.
Leisure-time activities affect the development of wholesome family morale.	Learn games that can be played while traveling, on rainy days, and on special occasions. Experience the creative use of various materials, such as old Christmas cards, drinking straws, colored paper and cloth. Present puppet plays about family life. Show the film, "Homes Around the World," available from the E.S.U. 1 Library. Display the poster packet, "A Family at Work and Play" which is in the Media Center.

Family Relationships	Suggested Activities - Grades 4-5-6
Family unity and pride develop through individual contribution and interaction.	Through discussion encourage students to participate in home activities. Establish ways in which each child can take part. Discuss highlights in family life: honors won by family members, and anniversaries or birthdays celebrated at home. View any of the films which are available from the Lincoln City Libraries in cooperation with the Nebraska Library Commission: "And Now Miguel" "Asian Earth" "Obligations" "Our Changing Family Life"
Family problems can be solved, when all family members work as a unit.	Discuss ideas as to how a family can adjust to changes in the family pattern, such as: the arrival of a new baby, illness, or a working mother. Discuss the effect which the death of a family pet may create.
Family patterns differ.	Discuss family patterns in other countries and contrast them with those in America. Make drawings showing the differences between family patterns in earlier times compared with those of the present day. View the film, "A Pioneer Home" available at the Lincoln Public Library in cooperation with the Nebraska Public Library Commission.
The independent nature of family life requires that each member develop a sense of responsibility.	Share true experiences of home tasks. Prepare a chart evaluating home responsibilities. Participate in a discussion which sets up with the group a good housekeeping code and a schedule of duties in the classroom.
We feel more secure within the family when we make decisions and accept the consequences.	Discuss some personal experiences in which the consequences of making right or wrong decisions were recognized. Listen to a debate on "Parent Selection of Television Programs" vs. "Children's Selection of Television Programs."

Family Relationships	Suggested Activities - Grades 4-5-6
Changes that occur in daily living affect family life.	Discuss the natural changes that occur in everyone's life that affect family living. Some examples are new members, deaths, moving, illness, divorce, remarriage and loss or change of jobs. List things that parents may do which show love. List what students do for other family members at various times to show they love them (e.g., during illness, daily, on special days).
The family should foster the fullest development of each individual in the family.	Discuss how the talents of each family member contribute to the family structure. Discuss qualities admired in other people. Arrange a bulletin board display of pictures of people expressing different moods. Discuss and explain how moods can change and why.
Leisure-time activities affect the development of wholesome family morale.	Teach games that can be played while traveling, on rainy days and on special occasions. Compile a list of activities for a child to entertain himself at home. Plan with the class an indoor field day. Experience using various materials for creative projects, such as: old Christmas cards, drinking straws, colored paper and cloth. Plan in cooperation with the art teacher if there is one available. Participate in puppet plays about family life.
The moral and spiritual values prevailing in the family group help to share family relationships.	Assist in preparing a seasonal basket for a family in need. Participate in activities with local organizations in their benevolent programs. Participate voluntarily in a community project, e.g., paper collection, playground cleanup, etc.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. American Association for Health, Physical Education and Recreation, 1201 16th Street, N.W., Washington, D. C. 20036
2. American Social Health Association, 1790 Broadway, New York, New York 10019.
3. Mead, Margaret and Martha Wolfstein. Childhood in Contemporary Culture. (Chicago: Uni. of Chicago Press, 1963)
4. Public Affairs Pamphlets, 381 Park Avenue South, New York, New York 10016.
5. Science Research Associates, 259 East Erie, Chicago, Illinois 60611.

Health Careers	Suggested Activities - Grades 1-2-3
Subconcepts Many people working in different places contribute to the health of a community.	Water Plant Invite the city employee who oversees water purification to come and tell about his work. The Laboratory Demonstrate the use of a microscope and discuss how it can be of help to doctors and in research. The Hospital Invite the school nurse to tell about her training, the other people who work in hospitals, and why hospitals are important. If any children have had experiences in hospitals they might lead a discussion of how many different people helped them get well. Food Plants Invite a representative from the Egg Plant at Wakefield to discuss what happens to their products to prepare it for use and to make sure that it is safe for eating. The School Invite any of the school employees that help to keep us healthy, i.e., cafeteria worker, janitor, school nurse, teacher or principal, to talk to the class. Visit the food preparation area of the lunch room to observe the preparation of food and how the dishes are washed and sterilized. The Doctor Invite a doctor to discuss his work with the class. The Nurse Make a display of nurses in different types of uniform. Discuss their work. Have the school nurse visit the classroom. Have her answer questions that the students are prepared to ask. The Dentist Request a classroom visit from a local dentist. He might discuss his work and answer students' questions. The Pharmacist Visit a pharmacy or invite a pharmacist to your school to tell about his work. Using a mortar and pestle, show how a sugar lump or soda mint tablet can be crushed into powder.

Health Careers	Suggested Activities - Grades 1-2-3
	Write riddle-type questions with a designation of "Who Am I?" to pertain to different specialists and health advisors.

Health Careers	Suggested Activities - Grades 4-5-6
Many people working in different places contribute to the health of a community.	The Water Plant 1. Discuss the importance of water for good health. 2. Discuss various uses of water in relation to health and the need for its being pure. 3. Visit the water purification plant. The Laboratory 1. Discuss how research people are always looking for new ways to keep people healthy and how the laboratory people can help doctors. 2. Experience using a microscope and discuss how it can be of help to doctors and in research. The Hospital 1. Discuss why hospitals are important. 2. Discuss how many different kinds of work people in hospitals do. 3. Discuss experiences that students have had in hospitals and how many different people helped them get well. Food Plants Students tell what they think happens to food before it comes to them fresh or in cans and frozen packages. 2. Discuss how certain people inspect foods to make sure they are safe for eating. 3. Discuss "Who inspects meat?" "Have any students ever noticed the stamp on meats?" "Who inspects milk?" "Is it important?" The School 1. Discuss school employees that help to keep us healthy, i.e., cafeteria worker, janitor, school nurse, dental hygienist, school doctor, teacher and principal. 2. Visit the cafeteria to observe the preparation of food and how the dishes are washed and sterilized. The Doctor 1. Discuss how the doctor is interested in keeping us well. Consider not only when people are sick or injured but also when there is need for x-ray, examinations, and immunizations.

Experiment with a stethoscope. Listen to heart beat of other children.

Identify other medical specialists and discuss what each does. Consider the pediatricians, dermatologist, ophthalmologist, obstetrician. Discuss how each one's field of specialization relates to others.

The Nurse

Ask the school nurse to visit the classroom. After she gives information have a question and answer period.

Prepare a bulletin board display of nurses pictures showing types of work they do. Other medical professionals could be included in the display.

The Dentist

Ask the school nurse or a dentist to come to the classroom and give information about the care of teeth.

Invite a dentist to come to the classroom and talk about his profession.

The Pharmacist

Visit a pharmacy or invite a pharmacist to come to school to tell about his work.

Experience using a mortar and pestle. Crush sugar lumps or soda mint tablets.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. American Hospital Association, 840 N. Lake Shore Drive, Chicago, Ill. 60611.
2. American Medical Association, Horizon's Unlimited. (Chicago: American Med. Assn. 1966)
3. Jones, Kenneth L., Louis W. Shainberg and Curtis O. Byer. Health Science (New York: Harper and Row Publishers, 1968)
4. United States Department of Labor. Health Career Guidebook. (Washington: Supt. of Documents, United States Government Printing Office, Washington, D. C. 20402.

Heredity and Environment	Suggested Activities - Grades 1-2-3
Subconcepts	
There are likenesses and differences among living organisms.	Make charts depicting likenesses and differences among living organisms.
	Demonstrate that there is air in water: put a bottle upside down in an aquarium, observe bubbles.
	Make a pictorial display of similar needs of all living things (air, light, food, rest, water, etc.).
Living things are affected by their environment.	Grow two sets of plants. Give one proper care and deprive the others of good soil, water, sunlight. Frequently compare and discuss results.
	Dress paper dolls with different clothing for various seasons or for various climates.
Curiosity about our environment leads to a better understanding of it.	Take a neighborhood walk to discover interesting things in the immediate environment.
	Play a game: "What did you see on the way to school?"
There are male and female humans, just as there are male and female forms in animal life.	Visit a farm or zoo; observe the male and female animal Note the differences in color, size, plumage, etc.
Each parent contributes something to its offspring.	Use the poster packet, "A Family at Work and Play," availabe in the Media Center.
	Children bring to school pictures of their own families. Observe ways in which the children are like the father, mother, aunt, uncle, grandparents.
Each species produces its own kind.	Plant the seeds from various packets of vegetable or flower seeds. Observe that the seeds produce the kinds of plants from which they came.
	Obtain plant cuttings from geranium or ivy plants. Discover that the new plants are the same as the ones from which the cuttings were made.
	Observe the birth of fish in an aquarium. Note the differences in size.
	Use pictures of mother and baby animals you would find in a zoo or on the farm.

Heredity and Environment	Suggested Activities - Grades 1-2-3
	Incubate fertilized chicken eggs. Sprout beans on wet blotter or sponge to observe germination of seeds. Share information about birth of pets at home.

Heredity and Environment	Suggested Activities - Grades 4-5-6
Living things reproduce themselves and develop and interact according to their environment.	Plant, observe and record growth of seeds in different environments. Observe natural reseeding of plants on school grounds or in the neighborhood. Grow bacteria on agar plates. Use a mircroscope to observe a cross-section of a tree; observe growth and environmental influences of growth.
Organisms inherit traits which may modify their environment and in turn may themselves be modified.	Construct dioramas to show seasonal changes and protective colorations. Draw maps showing migration routes and cycles of various wildlife. Observe and discuss home building habits of animals. Listen to reports and make illustrations showing hibernation and estivation of various animals. Point out that estivation is an adaptation to reduce water use by cells. Discuss things man does to modify environment to better suit his needs (adjusting clothing to temperature). Discuss the changing environment which brought about extinction of some animals (dinosaurs, fossils).
Each parent organism contributes its own peculiar characteristics to its offspring.	Observe mother and young for family characteristics (ducks, snakes, spiders, crabs). Collect leaves from parent and seedling deciduous tree forms (oak, maple, willow).

Heredity and Environment	Suggested Activities - Grades 4-5-6
	Discuss your physical characteristics that are similar to those of parents or grandparents. Prepare a heredity chart of one's own family, tracing some special characteristics as eye color, curly hair, etc. At the beginning of the school year, have a project matching a pure strain brown mouse with a pure strain white mouse. Have children predict color combinations and the ratio of brown to white.
All living things develop from a single cell or the union of single cells which is the unit of structure and function.	Collect frog, toad or salamander eggs. Observe, reread and illustrate developmental stages (Teacher: consider gestation period of animal selected.) Construct bulletin board display showing cell structure. Make models or drawings of cell structure. For introduction, use the large plastic cell model available at the Title III storage area. Observe by microscope potato or onion cells, noting nucleus, cytoplasm and cell membrane. Make a clay model, showing budding yeast cell. Demonstrate the reproduction of yeast cells.
The pattern of the organism is passed along to new cells by duplication of chromosomes and their DNA content.	Observe paramecium dividing (bioscopic activity). Discuss ancestry of various plants, flowers or animals. Construct simplified model of DNA molecule to illustrate how it carries genetic cultural traits. Listen to a report on the work of Mendel and its significance. Demonstrate blending by mixing plants.

Bibliography
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1. Bauer, W. W., G. G. Jenkins, H.S. Shacter, E. T. Pounds. The New Health and Safety. (Fair Lawn, New Jersey: Scott Foresman and Company, 1966)
2. Jones, Kenneth L., Louis W. Shainberg, Curtis O. Byer, Health Science. (New York: Harper and Row Publishers, 1968).

3. National Foundation - Division of Scientific and Health Information, 800 2nd Avenue, New York, New York 10017.
4. Schiffers, Justas J. Healthier Living. (New York: John Wiley and Sons, 1965)

Human Growth and Development	Suggested Activities - Grades 1-2-3
Subconcepts	
There are similarities of growth in living things.	Use fertilized eggs and observe incubation and early growth of chicken. Use plastic models of growth of chickens. Growth of a variety of plants and animals should be observed in the classroom. Planting of a variety of seeds should be observed in the classroom. Planting of seeds by each child will provide stimulation for observation of growth. Show the film, "Our Wonderful Body--How it Grows," which may be borrowed from the ESU 1.
Strangers can be dangerous.	Invite a policeman to visit the classroom and discuss that he is the students' friend and helper.
Living things reproduce their own kind.	Use transparencies picturing growth from the embryo stages to maturity.
Living things reproduce in many ways.	Grow plants from seeds, tubers and bulbs. Discuss transparencies or illustrations showing the cycles of the frog, pumpkin, chicken, and human.
Young animals have a need for home, food and parental care.	Show the film, "Animals are Different and Alike," available at the ESU 1.

Human Growth and Development	Suggested Activities - Grades 4-5-6
Puberty is a time for change in boys and girls.	Discuss physical, chemical (hormones) and personality changes that can take place during puberty. Reasons for the changes and why they are necessary for maturation should be stressed. Show any appropriate films on growth and development.
Boys and girls differ in skeletal and muscular structure.	Observe charts of the male and female skeletal and muscular systems to illustrate the differences and reasons for these differences.

Human Growth and Development	Suggested Activities - Grades 4-5-6
	Discuss how the differences in body structures is related to different roles in life.
The menstrual cycle is a natural event indicating the female body has reached one area of maturity	View current films on menstruation. Prepare the class for the film and provide for discussion and follow-up afterwards. Any lecture or questions should be handled by a person who is competent, confident and understanding.

Bibliography
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1. American Association of Health, Physical Education and Recreation, 1201 16th St., N.W., Washington, D. C. 20036.
2. Jones, Kenneth L., Louis W. Shainberg, Curtis O. Byer. Health Science. (New York: Harper and Row Publishers, 1968).
3. Kimberly-Clark Corporation, Educational Department, Neenah, Wisconsin 54956.
4. Nebraska Department of Health, State Capitol, Lincoln, Nebr. 68509.
5. Personal Products Company, Director of Education, Milltown, New Jersey 08850.
6. Public Affairs Pamphlets, 381 Park Avenue South, New York, New York 10016.
7. School Health Education Study. Health Education: A Conceptual Approach to Curriculum Design (St. Paul: 3M Education Press, 1967).
8. Science Research Associates, 259 East Erie, Chicago, Illinois 60611.
9. Tampax Incorporated, Educational Department, 161 East 42nd Street, New York, New York 10000.
10. Time, Inc. Rockefeller Center, New York, New York 10020.

Mental Health	Suggested Activities - Grades 1-2-3
Subconcepts	
"You" as a person are very, very important.	Prepare a booklet that uses pictures from baby days to the students' present ages. Prepare a bulletin board: THEN (baby picture) and NOW (up-to-date picture). Plan a self-portrait, using yarn, pipe cleaners, scraps of yardgoods, buttons, etc. Use any of the following filmstrips, available from the Media Center: "All Kinds of Feelings," "Do You Believe in Wishes?" "The Joy of Being You," "Nothing is Something to Do," and "People Packages."
Everyone is different. You can do certain things well--better than others--yet some can do things better than you.	Demonstrate things which you can do now that you could not do when you were younger. Prepare a bulletin board showing children engaged in different activities, preferably showing various ethnic groups.
You should be proud of those things you do well.	Draw a picture of yourself doing things you like to do, and do well. Role-play a story about helping at school and at home. Bring to school things you have done--painting, sewing, whittling, etc. Develop displays of children's work.
Responsible behavior is a part of growing up. Improving behavior indicated they were growing up.	Listen to stories that will illustrate children whose behavior indicated they were growing up. Discuss responsibilities at home. Plan a group project which involves each child assuming a responsible role, i.e., group mural.
Feeling sad or happy is part of life; one's adjustment to these feelings in ourselves and in others is most important.	Role-play the idea of "putting oneself" in another's situation.

Mental Health	Suggested Activities - Grades 1-2-3
We must have respect for the rights and property of other people as well as our own.	Make a display of pictures of people who are showing respect for one another. Discuss punctuality, game rules, taking turns, sharing and then role-play the situations. Show any of the following films available from the ESU 1: "Beginning Responsibility--Being a Good Sport," "Beginning Responsibility--Getting Ready for School," "Beginning Responsibility--Learn to Follow Instructions," "Values--Playing Fair."

Mental Health	Suggested Activities - Grades 4-5-6
With growth, development and desire for independence comes also the need for an acceptance of responsibility.	Create and role-play stories involving self-reliance. Participate in group "buzz" sessions on how to make one's own decisions, to be a good leader and a sensible follower. Discuss students' responsibilities now and list suggestions on how to increase personal responsibilities. View the film, "Growing Up, Growing Older," available at the ESU 1 film library. Discuss and role-play the outcomes and hazards resulting from not caring for possessions. Develop a list of class "chores," and have pupils perform them. Change weekly.
Development of desirable habits contributes to one's mental health.	List good study habits orally contributed by students then contrast, compare, and discuss. Discuss habits developed in language, behavior, dress, chores, etc.
Everyone has certain gifts, and using these gifts wisely can be very satisfying.	Discuss ways of being creative and using one's talents. Art or social studies are good areas to develop projects and correlate this idea. Plan a play. The students should carry out the directing and planning as far as they are able. After the presentation, discuss how together many talents were used for the enjoyment of all.

Mental Health	Suggested Activities - Grades 4-5-6
	Express interests through art, music, physical education, etc.
	Set up hypothetical problem situations and develop a solution, using the thoughts and ideas of many.
Consideration for others is a healthy "growing up" sign.	Role-play to dramatize how a person can ease the hurt feelings of another. Discuss how to prevent or avoid hurting the feelings of others.
	Discuss "behaviors" which are indications of growing up.
	Orally construct a list of characteristics which help one to get along well with others.
	View the film "Everyday Courage and Common Sense," available from the film library of ESU 1. Another appropriate film available from ESU I is "Values--Understanding Others."
Differences in people require another's respect and understanding.	Discuss differences between boys and girls; men and women.
	Discuss the several races and cultures of people. Develop reports on each race represented.
	Role-play how it feels to be different from others in terms of religious beliefs, race, culture and customs.
	Discuss how such differences demand understanding.
	Prepare a classroom display showing different faiths, races, and countries.
	Compare orally the cultures of many lands.
	View any of a large number of filmstrips available at the Middle School Media Center which would apply. Included might be "Modern West Germany," "Modern Greece," "Modern Turkey," "Modern India and Pakistan," "Living in Poland Today," "Living in East Germany Today," "Modern British Isles," "Modern Scandinavian Europe."
	View films which are available from ESU I: "Boy of Central Africa," #00297, "China and Its People," #00130 "India, A Better Tomorrow," #00299, "Austria--Past and Present," #00125, "Switzerland--The Land and the People," #00126, "Southeast Asia Family," #00300.

Mental Health	Suggested Activities - Grades 4-5-6
Emotions such as fear, love, hate, jealousy, have a variety of expressions.	Orally make a list of those things which people validly fear, e.g. war, earthquakes, illness. Discuss reasons which cause these fears to develop. Illustrate things I love: my pet, my bicycle, my favorite food. List "my 10 favorite things"--kittens, toys, moonlight, ice cream, my mother, my father, etc. Tell the class about the topic: "When I wanted something I couldn't have." Role-play and discuss negative emotional behavior. Collect a group of pictures showing anger, sadness, hate, love, joy, and discuss them. Develop stories which could relate to the pictures, offering suggestions as to why each emotion is expressed.
Anger, hate, frustration do occur, and related behaviors can be controlled or accepted.	Discuss "hate." Indicate its inherent dangers. Talk about suggestions on how to control behavior resulting from these emotions. Discuss wholesome outlets for "pent up" anger, e.g., taking a walk, straightening your room, reading a story, etc. View the film, "The Fight," #00237, which is available at ESU I. Also view "Getting Angry" #00263.
Friendship is a great joy and one of man's greatest gifts.	Make a tape recording of the topic, "The Quality of Friendship" with the student expressing his own feelings. Discuss forgiveness of others; the difficulty and the joy.
Honesty and dishonesty influence behavior.	Analyze the effects of dishonesty; the personal gain in being honest. Compare cross-cultural concepts of honesty. View either of the films which are available at ESU I: "Values--Telling the Truth" #00265 and "Values--The Right Thing To Do," #00266.

Mental Health	Suggested Activities - Grades 4-5-6
Rules and policies have a definite and important place in your life.	Participate in a panel on school rules. Invite the school nurse, librarian, and principal to present a panel discussion on rules which govern their area. Contribute to an oral discussion of rules which influence our behaviors at home, church, and community.
Confidential discussions often provide solutions to seemingly difficult problems.	Discuss the idea of keeping confidences. Discuss the characteristics of people with whom you could discuss a serious problem.

Bibliography
Selected References and Resources

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1. Bauer, W. W., G. G. Jenkins, H. S. Shacter, E. T. Pounds. The New Health and Safety. (Fair Lawn, N. J.: Scott Foresman and Co., 1966).
2. Irwin, Leslie W., Harold J. Cornacchin, and Wesley M. Staton. Health in Elementary Schools. (St. Louis: C. V. Mosley Co., 1966).
3. Mental Health Materials Center, 419 Park Avenue South, New York, N.Y. 10016.
4. National Ass'n. for Mental Health, Inc., Director of Education and Program Services, 10 Columbus Circle, New York, N.Y. 10019.
5. Nebraska Department of Health, State Capitol, Lincoln 68509.
6. Schefferes, Justis J., Healthier Living. (New York: John Wiley and Sons, 1965).
7. School Health Education Study. Health Education: A Conceptual Approach to Curriculum Design. (St. Paul: 3M Education Press, 1967).
8. United States Department of Health, Education, and Welfare, Children's Bureau and Public Inquiries Branch, Washington, D. C. 20201.

Nutrition	Suggested Activities - Grades K-1-2-3
Subconcepts	
Food sustains life.	Observe growth of tadpoles and chart their growth patterns. Place grass seed in a sponge and water. Observe pattern of growth.
Food is essential for normal body growth.	Dramatize good posture through role-playing situations. Use the wooden model of a human body which is jointed to show examples of good and poor posture. The model is in the Title III materials. Observe and discuss the eating habits of pets; note differences between large and small animals. Have students bring in small pets that can be cared for and observed in the classroom.
Some foods are more nutritional than others.	Construct a food train made from cartons composed of an engine and four cars. Each car should be designed as one of the basic four food groups. Make models of wide variety of foods and place in the appropriate car. For a special day at school, such as the Valentines Party, plan and serve snack foods which are nutritious and healthful. Make giant paintings of fruit and vegetables on large paper or cloth sacks. Cut holes for arms and head. Use in play or skit to tell the class about each food--its taste, food value, place of growth, etc. Play store, using stand-up pictures. Shop for foods (stock with empty cans and boxes). Make simple food mobiles showing four basic food groups.
Certain behavior while eating is important to enjoying and getting the most out of our meals.	Role-play preparation for meals (washing hands, cooling-off from play activities). Demonstrate the proper use of a napkin at the table, small bites, eating slowly, elbows off table, cheerful conversation, and use of utensils. Use the posters "Common Fruits," available at the Media Center.

Nutrition	Suggested Activities - Grades 4-5-6
Work efficiency depends upon adequate food intake.	Discuss the foods that students ate for breakfast one morning. Prepare a bulletin board display of reasons why we eat (growth, energy, feel better, etc.) Compare how often we eat to how often we feed our pets. Investigate the relationship of accidents, errors, misjudgments, to food intake. Discuss food intake of people involved in different occupations.
One's diet is determined by numerous conditions, hereditary and envrionmental.	Discuss how tastes affect what we select to eat. Discuss advertising media and its effect on family food purchases and diet. Through role-playing, discover ways to encourage and create a relaxed mealtime.
All nutrients needed for growth and development are available through the foods we eat.	Make six different colored blocks of construction paper. Designate each as a vitamin, fat, carbohydrate, water, etc. Build different foods with the blocks. Make comparisons. Draw pictures of foods you dislike and discuss foods that supply equivalent nutritional value. Visit the school kitchen to find out how they store foods to conserve nutritional value, e.g., refrigerator, freezer, cold, dry, etc. View the filmstrips "You and Your Food," #107 or "Foods and Nutrition," #45 available at the Media Center of Middle School.
A balanced diet is essential to good health.	Discuss current food fads. Discuss the spending of allowance money on food treats. Discuss the balance of treats and nutritional foods. Discuss the nutritive value of coffee and tea. Discuss possible reasons why we eat desserts last at mealtime.

Nutrition	Suggested Activities - Grades 4-5-6
	Prepare a classroom display which gives information on milk. Choose a food such as milk or eggs or a favorite vegetable. Make a poster which shows the many ways to serve this food, how the food aids in growth and development, etc.
One's daily diet should be planned each day to include foods which provide sufficient amounts of nutrients and calories.	Using menus from the cafeteria for a week, evaluate them for their "basic four" contributions. Help set up a display of healthful foods in the school lunchroom. Prepare a sample breakfast, dinner, snack, and party menu using pictures cut from magazines or by making drawings. Compare with the child's actual menus for a day. Discuss implications of obesity. Compare obesity to calorie intake and output. Demonstrate how our body uses and/or stores food.
The digestive system changes the food into a usable form for the body cells.	Draw and label the digestive tract or construct a model of the digestive tract. Transparencies might be used instead of paper. Prior to this, discuss how food is processed by the body. Demonstrate the process of peristalsis and discuss its purpose. Listen to oral reports on functions of various digestive fluids, e.g., saliva, gastric, bile, pancreatic, intestinal, etc. Study drawings or transparencies of the small intestine (enlarged) which show how nutrients pass into the blood. Discuss the effects of personal eating habits and/or regular exercise on the functioning of the digestive system.
One's feelings and emotions may affect the digestion of food.	Discuss: (a) if and how feelings of happiness or sadness influence digestion. (b) if and how fear, hate and anger relate to digestion. (c) if and how rest and relaxation relate to digestion. (d) how physical activities immediately after meals relate to digestion. (e) the effects of a quick or hurried meal.

Nutrition	Suggested Activities - Grades 4-5-6
Certain processes make eating a safe, varied and interesting part of our lives.	Discuss laws pertaining to the pasteurization of milk. Discuss laws pertaining to the enriching and labeling of processed food. Orally list the advantages and disadvantages of each of the processes used to preserve food, e.g., cooling, canning, drying, dehydration, freezing, smoking, salting and pickling. Expose a variety of foods to the air at room temperature. Note how long it takes for each kind of food to spoil. Discuss how these foods are "kept" when they are transported and when they are in stores. Identify the signs of food spoilage: odor, change in texture, change in appearance, and change in taste. Soak some dried foods such as prunes, raisins, macaroni, milk, and soup in water; observe the effect on the food. Permit the soaked food to remain exposed to the air at room temperature for several days. Discuss why the soaked food spoiled, but when it was dried out, it did not spoil. Listen to a panel discuss the values of enriching foods (milk, bread, cereals, juices). Observe under a microscope the growth of bacteria or mold that appears on spoiled food. Invite a home economist to speak to the class about preserving and enriching food.
Many steps have been and are being taken to solve world food problems	Investigate and discuss current world food problems. Discuss organizations involved in world food problems: Food and Agriculture Organization (FAO), World Health Organization (WHO), International Children's Emergency Fund (ICEF).

Bibliography
Selected References and Resources

The following selected references and resources are suggested for use in supplementing and enriching this unit.

1. American Medical Association, 535 Dearborn Street, Chicago, Ill. 60610.
2. Willgoose, Carl E. Health Education in the Elementary School. (Philadelphia: W. B. Saunders Company, Chapter 11, 1969).
3. U. S. Department of Health, Education and Welfare, Consumer Protection and Health Service, Food and Drug Administration, Washington, D. C. 20204.

Physical Fitness	Suggested Activities - Grades K-1-2-3
Subconcepts	
Exercise and play contribute to personal happiness, growth, strength, relief of fatigue, and making friends.	Demonstrate or draw pictures about favorite ways to exercise. Examine sports pictures and describe the types of exercise portrayed. Discuss the kinds of outdoor activities participated in at school and at home and how they contribute to health.
Daily exercise strengthens the heart and increases the effectiveness of the lungs.	Invite the physical education teacher to discuss and demonstrate the importance and need for play and exercise in maintaining and developing personal physical fitness.
Good sportsmanship adds to the enjoyment of play activities.	Provide examples through role-playing to illustrate good sportsmanship in play activities. Demonstrate good sportsmanship during recess periods, lunch times, and other school social activities. Show the film from ESU I, "Values--Playing Fair," "Beginning Responsibility--Being a Good Sport."

Physical Fitness	Suggested Activities - Grades 4-5-6
Physical fitness contributes to good health.	Develop a definition of physical fitness inclusive of its varied components and congruent with student understanding. Investigate the emphasis given to physical fitness in ancient Greece, Rome, and Egypt. View the film, "Physical Fitness and Good Health," #00242, available at the ESU I. Explore the training schedule of professional athletes in various sports.
Physical fitness includes health practices other than exercise.	Explore the health practices necessary for good physical fitness: (a) correction of defects (b) avoidance of injury and disease (c) proper nutrition (d) proper habits of sleep and rest.

Physical Fitness	Suggested Activities - Grades 4-5-6
	Illustrate how the use of alcohol and tobacco may interfere with the full attainment of physical fitness.
There is an important relationship of the function of bones and muscles to movement and posture.	Orally review the unit on Anatomy. View skeletons and anatomical charts to demonstrate the relationships of the skeletal system to posture and exercise. Help prepare a bulletin board display illustrating how the muscles move the body and affect posture. View the filmstrip, "Posture and Exercise," #147, available at the Media Center of Middle School. Relate posture to common occupations. Observe other students' posture and thereby help one another to be more aware of good posture.
Exercise contributes to the efficient functioning of the body.	Illustrate how muscles develop in size, strength, and efficiency. Demonstrate the effect of exercise on the heart, circulation, and respiration. Demonstrate the effects of exercise on digestion, assimilation and elimination. Listen to the physical education teacher discuss and demonstrate good body mechanics. Demonstrate with other students the techniques of moving, lifting, and carrying heavy objects. Demonstrate how fatigue can contribute to poor physical performance and posture.
Participation in a variety of physical activities helps to promote development of body symmetry.	List orally the physical activities you participate in and determine if all parts of the body are being developed. Discuss the kinds of activities in which pupils participate. Evaluate each activity for its contribution to one's physical fitness.

Physical Fitness	Suggested Activities - Grades 4-5-6
Social, mental and environmental values may be derived from participation in a variety of physical activities.	Tape record thoughts on "My Favorite Sport." Comment on the values received from participation in physical activities. Orally list the lessons learned in playing team and individual sports. Illustrate how physical exertion can help you in "letting off steam" or reducing emotional tension.
Conditioning activities serve to prevent injuries in sports.	Discuss the value of warm-up before strenuous activities. Invite a school coach to speak on proper training practices designed to avoid strain, sprains and fractures.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. American Association for Health, Physical Education and Recreation, 1201 16th Street, N. W., Washington, D. C. 20036.
2. Cooper, Kenneth. Aerobis. (Philadelphia: J. B. Lippencott Co., 1968)
3. Morehouse, Laurene E., and Augustus T. Miller. Physiology of Exercise. (St. Louis: C. V. Mosley Company, 1967).
4. Presidents' Council on Physical Fitness and Sports, 330 C Street, S.W., Washington, D.C. 20201.
5. United States Marine Corps Physical Fitness Program, Inspector Instructor, Marine Reserve Training Center, 2991 North Second Street, Harrisburg, Pennsylvania 17126.

Physiology	Suggested Activities - Grades K-1-2-3
Subconcepts	
The human body is often referred to as a machine.	Make comparisons with any mechanical device and note the need to keep each part in sound working order; illustrate how damage to the entire mechanism occurs if an individual part is damaged.
The human body is a complex network of body cells, tissues, and organs, all working together.	Demonstrate by visual aids all the body systems. Compare the body systems to experiences the child can relate to, such as: nervous system--telephone network, and circulatory system--community water system. Prepare bulletin board displays of body systems.
The heart is a very special part of our body.	Illustrate the basic mechanics of a pump and demonstrate its similarity to the human heart. Listen to heartbeats with a stethoscope. Discuss how and why it is used by a doctor. Show the film, "Our Wonderful Body--Heart and Its Work," available from the ESU I.

Physiology	Suggested Activities - Grades 4-5-6
Various organs and tissues work together to form body systems.	View models, charts, and other varied visual aids in discussion sessions concerning body systems. Study visual resources, such as pictures, wall charts, and transparencies, to become familiar with the basic systems. Participate in small group discussions which compare and contrast different body systems. Develop reports, written, oral, or visual to the class.
The respiratory system brings oxygen to the body and removes CO_2.	Construct and label a chart of the respiratory system and summarize the functions of various parts. Participate in a demonstration of artifical respiration procedures. View the filmstrips, "The Human Respiratory System," #138, and "Mechanisms of Breathing," #44, available at the Media Center of Middle School.

Physiology	Suggested Activities - Grades 4-5-6
The digestive system changes food into usable form for the body cells.	View the filmstrip, "Human Digestive System," #134 available at the Media Center of the Middle School. Construct and label a chart of the digestive system. Review the unit on Nutrition.
The circulatory system transports supplies such as food and oxygen and waste products throughout the body.	View the filmstrips, "Human Circulatory System," #135 and "The Heart and Circulation," #49, available at the Media Center at Middle School. Examine a model of the heart. Construct and label diagrams of the heart and blood vessels. Listen to a demonstration of how to take a pulse rate and count the beats. Participate in a demonstration which compares heart rates before and after participation in different activities.
The nervous system is the communications network of the body.	View models or charts to examine the brain and spinal cord and outline their functions. View the filmstrips, "Human Nervous System," #131 and "The Nervous System," #50 available at the Media Center of the Middle School. Discuss why damage to the spinal cord may cause paralysis. Participate in taste experiments blindfolded and compare foods of similar consistency, such as apples or potatoes. Discuss eye and ear care. Study a diagram of the reflex arc.
The endocrine system is the chemical regulator of the body.	Discuss and show the location of the endocrine or ductless glands. Consider how the secretions are passed directly into the blood. Discuss hormones. Become familiar with the several endocrine glands: pituitary, thyroid, parathyroid, adrenal, and gonads. View the filmstrips, "Human Glandular System," #136, and "Endocrine Glands," #43 available at the Media Center of the Middle School.

Physiology	Suggested Activities - Grades 4-5-6
The reproductive system provides the cells for producing a new person and a place for the embryo to grow until it is complete enough to survive on its own.	Refer to unit on Human Growth and Development.
The excretory system takes care of the elimination of waste, liquids, solids and gases.	Trace oxygen, a solid food, or a liquid through the body until used or eliminated. Use transparencies or paper charts. Discuss the independence of the excretory system to other systems. Discuss use and misuse of laxatives. Discuss individual differences in elimination habits.
The soundness of the various systems can be interfered with by injuries and/or disease.	Discuss the ability to transplant certain body organs. Listen to reports or to a panel on childhood disease: causes, symptoms, treatment, prevention. Present material in skits or panels.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. Best, Charles H. and N. B. Taylor. Human Body: Its Anatomy and Physiology. (New York: Holt, Rinehart and Winston, Inc., 1963).
2. Hirsch, S. Carl. Four Score . . . And More: The Life Span of Man. (Dayton, Ohio: The Viking Press, 1965).
3. Kahn, Fritz. The Human Body. (New York: Random House, 1965).
4. Thompson, C. W. Manual of Structural Kinesiology. 6th Edition. (Mankato, Minnesota, 1969).

Safety	Suggested Activities - Grades K-1-2-3
Subconcepts	
The responsibility for safe conduct to and from school is shared by the home, community and the school.	Fill in the safest route to school from home on a prepared map. Discuss it with parents.
	Practice with a policman where, when and how streets should be crossed.
	Role-play safety rules for use when riding the school bus. Dramatize by arranging chairs to represent a school bus. Show correct way of boarding, riding, leaving, and crossing in front of bus. Include emergency evacuation procedures.
The community helps in keeping areas safe for pedestrians.	Walk around the school neighborhood and discover various kinds of traffic signs.
	Make a traffic-signal box (could be a milk carton). Mount on a stick and play traffic games with it.
While walking it is very important to stay alert.	Set up traffic situations and role-play rules for pedestrian.
	Invite a policeman to visit class to help with discussion.
	Using pictures of animals children may encounter on way to school discuss how and when they could be dangerous, and what to do if bitten. (discuss rabies.)
	Draw up rules of what students should do when approached by strangers.
	Provide children with pieces of clothing of different colors if there is not a good sampling in the classroom. Darken the room and have the students discuss what they see in the dark, and which colors are the safest after dark.
Safety and accident prevention is everyone's concern.	Invite a fireman to explain why we have fire drills. Demonstrate how to extinguish burning clothing.
	Make a visit to the fire station with a fireman.
	Interview policeman, nurse, bus driver, parents, school patrol member, etc. about their responsibilities in home, community, and school safety.
	Invite the physical education teacher to discuss and demonstrate safety on the playground in the gymnasium.

Safety	Suggested Activities - Grades K-1-2-3
	Role-play "lost child." While one child is lost, another is the policeman. Have the child review home address, telephone number and name. Practice the use of the phone. Show films "Donald's Fire Survival Plan," and "Firehouse Dog," available at ESU I. Use the posters, "Fire Department Helpers," available in the Media Center.
Play can be more fun if it is controlled.	Demonstrate how to use slides, swings, teeter-totters, and other equipment found not only on the school playground, but throughout the community. Have children on the playground demonstrate the typical safe play situations and those containing common accident hazards. Through role-play situations, demonstrate the proper and safe use of equipment and materials such as scissors, tricycle, blocks, wagon, lunch trays, etc. Encourage children to attend the bicycle school conducted by the local police department. Have students demonstrate bicycle safety for both riders and pedestrians. Show the film, "I'm No Fool With A Bicycle," available at the ESU I.
Courtesy and other aspects of good conduct are important to good school safety.	Demonstrate how to walk up and down stairs, one step at a time; open doors; control rate of walking, go around corners, stay to the right, etc. Interpret WHY such precautions are necessary. Demonstrate safe practices for entering and leaving the building so as to avoid pushing, shoving, and tripping. Demonstrate conduct and courtesy in use of drinking fountains, lavatory, cafeteria, playground and classroom.
Sharing safety knowledge can help others to prevent accidents.	Make puppets and conduct a puppet show on "Safety." Put on a dramatic play showing safe ways of doing things. Invite other classes or parents to come. Make bulletin board displays on safety in the school. Orally make up safety riddles or rules pertaining to such school objects as pencils, pens, scissors, etc.

Safety	Suggested Activities - Grades K-1-2-3
Safety and courtesy practiced away from school can help prevent accidents in play activities.	Make a display of toys or small play equipment which can be dangerous if not correctly used, e.g., marbles, hard balls, jump ropes, sling shots, BB guns, dart games, bows and arrows, etc. Discuss why such equipment may be dangerous. Dramatize what to do if a ball rolls into a street. Demonstrate care of minor injuries.
Practice and preparation can save our lives in hazardous situations relating to fire.	Demonstrate how to act in case of home fire, e.g., getting out of building, alernate routes, getting brothers and sisters out, getting adult help, calling fire department, etc. Demonstrate how to roll up in a blanket to smother the flame if your clothing is on fire.
There are harmful substances in certain plants, animals and products of which we should become aware.	Make a collection of magazine pictures to be used in a chart depicting household products which may be dangerous; assemble pictures by rooms in a house--bathroom, laundry, etc. Make a display of plants to avoid. Survey local neighborhood to see how many plants grow in your area. Discuss the poison symbol. Construct a medicine cabinet made of cardboard. Place in it drawings of things that may be poison.

Safety	Suggested Activities - Grades 4-5-6
The reinforcement of home and school concepts helps to develop more responsibility action and increased knowledge.	Investigate and discuss accident statistics and traffic hazards in the community, state, and nation. Compare. Discuss bus loading and unloading, and on-bus conduct. Prepare a bulletin board display of a variety of traffic signs; discuss meanings for vehicle and pedestrian traffic safety. Help to orally prepare a self-test for lower grades on pedestrian, bicycle and skate-board traffic safety. View the film, "I'm No Fool With A Bicycle," #00245, available at ESU 5.

Safety	Suggested Activities - Grades 4-5-6
With cycling pleasures come responsibilities.	Ask a member of the local police department to explain rules and regulations concerning equipment and operation of a bicycle. Help organize a bicycle inspection to be held at school to determine proper equipment, license and registration. View films related to bicycle safety. Assist in planning a "bicycle rodeo" on a weekend. PTA, local police or service clubs could work together in the organization, conduct and judging. Keep a classroom record of bicycle accidents and discuss how they could have been prevented. Orally develop rules for safe biking.
Each person shares a responsibility in prevention of school accidents and the promotion of safety.	Discuss practices which will avoid accidents due to these hazards. Make appropriate slogans and posters for display. Draw a plan of the school grounds and buildings, pointing out areas considered unsafe. Help to organize a "clean-up the playground" period to remove hazards, objects. Discuss and list safety rules for equipment used on the school playground and in sports activities. Orally study the duties of the safety patrol. Practice these duties. Act in original plays involving safety rules and precautions. Ask a representative of the civil defense program to tell how the school is involved in the program.
Most home accidents can be prevented.	With the help of an art instructor, make cartoon drawings depicting safety at home. Through oral discussion develop a home fire hazard check list. After students have conducted the check, suggest as many corrections as possible. Gather data on the causes of fires in homes and public buildings.

Safety	Suggested Activities Grades 4-5-6
	Invite an electrician or power company representative to discuss electrical hazards in the home with the class.
	Experiment with dry cell batteries to determine how electric insulation may be grounded or shorted out.
	Gather information from local insurance companies which tells the number of home falls and how this rates with other accidents.
	Report on causes and results of home accidents that involved relatives or close friends within the last year.
	Help prepare an exhibit of hazardous objects or materials found in homes, such as metal toys with sharp edges, rugs without rubber backing, oily rags improperly stored, and easily accessible poisonous substances.
	Orally develop a comprehensive check list of home hazards and suggest ways for correction.
Fire prevention is part of civic and individual responsibility	Discuss and practice the fire drill and civil defense regulations posted in the classroom.
	Participate in fire drills. Discuss ways to improve fire drills. Learn the location of fire safety equipment in the building.
	Help plan and participate in campaigns to eliminate fire hazards in homes and schools.
	Identify types of burns and treatment for each.
	Orally list all the flammables found in the home and discuss the storage of each.
	Orally develop a list of seasonal fire hazards in the locale and categorize by the season.
	Invite a fireman to visit the classroom to demonstrate the use of different types of fire extinguishers. Discuss the types of fire for which each one is most effective.
	Discuss means of personal protection in case of fire. Role-play varying situations, e.g., dress on fire, trapped in a smoke-filled house, etc.

View these films, available at ESU I:
"Donald's Fire Survival Plan," #00244
"Firehouse Dog" #00277

The safety of others becomes everyone's responsibility.

Watch a demonstration of basic first-aid practices.

Prepare a list of important telephone numbers for use in emergency at home and school.

Collect newspaper clippings and pictures about accidents. Discuss first-aid procedures that might have been used in each situation.

Plan and develop a first-aid kit for home, automobile, camping or hiking. Demonstrate why selected items are vital to the kit.

Describe accidents reported in newspapers and analyze how they might have been prevented. Diagram the accident on the board.

Through role-playing situations, demonstrate the importance of first aid and basic procedures.

Watch a demonstration of proper methods of artificial respiration given by the school nurse. Become involved in giving artificial respiration to a dummy or large doll. Create situations for application.

Discuss how, by using improper action, additional damage may be done to an injured person. Explain the meaning behind the statement, "No action at times is the best action."

Discuss pupils' camp experiences in relation to first aid in emergencies.

Watch a demonstration of first-aid practices by Boy Scouts and Girl Scouts who are qualified in first-aid.

Participate in a class project where a safety and first-aid handbook for room and playground is prepared. Involve art and English classes.

Discuss the importance of securing aid in emergencies without leaving the injured person. Role-play suggestions as to how this may be done.

Safety	Suggested Activities - Grades 4-5-6
Safe participation in sports and recreational activities requires the application of safety practices, knowledge and rules.	Discuss the following in relation to camping--fire hazards, drinking water, ax and knife safety, hiking, poisonous plants, wild animals, getting lost in the woods, keeping and leaving a clean campsite. Participate in the following activities pertaining to boating: (a) make posters of boating laws and regulations. Invite an authorized person to explain the rules and regulations. (b) Orally list dangerous boating areas and conditions in your area. (c) Collect newspaper clippings about boating accidents and discuss them. (d) Make a model of a boat showing important parts and its equipment. (e) discuss a glossary or vocabulary list of useful boating terms. (f) discuss with an authorized person how a boat should be handled safely, including overloading, standing up, etc. Through role-play situations demonstrate boating or camping safety practices. Discuss water safety practices involving the following circumstances: (a) the need for knowing how to swim well. (b) supervision whenever and wherever young people are swimming. (c) diving or using inflated devices and swimming in the ocean or surf. (d) non-swimmer rescue techniques. (e) the buddy system. (f) staying in the water too long. (g) swimming after eating. (h) swimming alone. Make posters of swimming rules. Construct bulletin board displays illustrating safe swimming practices. Include general water safety practices. Listen to a report on the safety of local swimming areas. Observe demonstrations showing techniques for water rescue of self and/or others.

Safety	Suggested Activities - Grades 4-5-6
Preparedness helps to develop appropriate responses to hazardous and emergency conditions.	Discuss natural disasters which have occurred in the area or have a liklihood of occuring. Discuss the preparation necessary to cope with them. Plan how the school could be involved. Help prepare a bulletin board display of emergency conditions and study what would be needed in each of these emergencies. Invite emergency unit members to come to the classroom and explain their functions. Discuss the importance of health maintenance for purposes of better coping with emergencies. Orally list foods, clothing, medicines and equipment most appropriate for an emergency situation. Investigate how the school is involved in the community civil defense program, i.e., shelter, food and equipment, storage, etc. Learn the meaning of the various civil defense signals and post directions at home and at school. Orally develop a list of questions which could be used with parents and neighbors to find out how well informed the community is in civil defense.

Bibliography
Selected References and Resources

The following selected references and resources are suggested to supplement and enrich this unit.

1. American Association for Health, Physical Education and Recreation. Annual Safety Education Review. (Washington: NEA Publications - Sales)
2. American Medical Association, Department of Community Health and Health Education, 535 North Dearborn Street, Chicago, Illinois 60610.
3. Florio, A. E., and G. T. Stafford. Safety Education (New York: McGraw-Hill Book Company, Inc., 1962)
4. National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.
5. Wilgoose, Carl E. Health Education In The Elementary Schools. (Philadelphia: W. B. Saunders Company, 1969)
6. Nebraska Department of Education. A Guide for Preparing Emergency Plans for Schools. (Lincoln: 233 So. 10th Street)
7. Stach, Herbert J., and J. Duke Elhow. Education for Safe Living. (Englewood Cliffs, New Jersey, 1966).
8. Strasser, Marland K., et al. Fundamentals of Safety Education. (New York: The Macmillan Company, 1964).

Smoking	Suggested Activities - Grades 4-5-6
People smoke or refrain from smoking for a variety of reasons.	Orally discuss the reasons people in general give for smoking. Participate in a survey of parents on their attitudes concerning smoking: (a) Do you think smoking is harmful? (b) Do you approve of young people smoking? (c) Do you think you could stop smoking? (d) Have you tried to stop smoking? (e) Do you wish you never started smoking? Orally make a list of the advantages and disadvantages of smoking. Identify and examine reasons why young people begin smoking.
Cigarette smoking is harmful to the body.	View the film, "Smoking and Health: A Report to Youth," available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission, or at ESU I. Discuss the effects of smoking on the body: (a) heart rate (b) shortness of breath (c) appetite (d) irritation of the nose and throat (e) life span
Lung cancer and other chronic diseases are found more frequently among smokers than in nonsmokers.	Invite the doctor or school nurse to discuss the relationship of lung cancer and other chronic diseases to smoking habits. Discuss the results of continuing research relating smoking to chronic diseases.
Smoking advertisements affect youth in many different ways.	Evaluate the pupils feelings and understandings of smoking advertisements: (a) relate the benefits of smoking claimed in television ads. (b) question whether advertisements tell one to smoke.
Smoking is a dangerous habit that is very difficult to change.	Discuss why the smoking habit is so difficult to break. Discuss why young people should not smoke. Consider reasons of health, disease, and cost to the individual and society.

Smoking	Suggested Activities - Grades 4-5-6
Along with a great increase in smoking over the last 25 years, there has been a corresponding increase in lung cancer.	Help construct a large graph showing the lung cancer death rate of cigarette smokers and non-smokers for the past 25 years. Investigate the risk of getting lung cancer after one gives up smoking. Chart the rate of lung cancer cure. Compare orally the risks of pipe, cigar, cigarette smokers and nonsmokers in developing lung cancer and other respiratory diseases.
Disease other than lung cancer are found more commonly among cigarette smokers than in nonsmokers.	Help plan for the teacher to write to volunteer health agencies, requesting information showing the relationship of smoking with coronary heart disease, emphysema, pulmonary bronchitis, and stomach ulcers. Participate in a small group that examines the materials from each agency contacted. Listen to oral reports of the committees.
Cigarette smoking may affect the individual in ways other than health.	Investigate the cost of smoking one pack of cigarettes a day for a week, a month, and for a year. Discuss the cost of careless smoking habits which may result in great loss of timber, wildlife, and recreation areas. Discuss how fires are caused by careless smoking habits.
Tobacco advertising may be misleading.	Examine the appeal of smoking advertising and the effect on causing young people to start the smoking habit. Discuss the use and effectiveness of cigarette filters. Bring smoking advertisements to class and evaluate them.
Smoking can affect the performance of an athlete.	Invite a nonsmoking athletic coach to explain to the class why athletes should not smoke. Help prepare a display of posters of professional athletes endorsing nonsmoking. Listen to varsity athletes who are and have been nonsmokers, to discuss the reasons for not smoking.

Bibliography
Selected References and Resources

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1. American Association for Health, Physical Education and Recreation, 1201 16th Street, N.W., Washington, D. C. 20036.
2. American Medical Association. Today's Health Guide. (Chicago: American Medical Association, 1965).
3. U. S. Surgeon General Advisory Committe. Smoking and Health. (U.S. Department of Health, Education and Welfare, Bulletin #1103, Washington, D. C., 1964).
4. Nebraska Tuberculosis and Respiratory Diseases Association, 406 WOW Building, Omaha, Nebraska 68102.
5. American Cancer Society, Nebraska Division, Inc., 4201 Dodge Street, Omaha, Nebraska 68131.
6. Nebraska Heart Association, (an affair of the American Heart Association), 3624 Farnam Street, Omaha, Nebraska 68131.
7. Nebraska Department of Health, Health Education Division, 1003 Capitol Building, Lincoln, Nebraska 68509.

BIBLIOGRAPHY

Guidelines for Comprehensive Health Education, a conceptual approach, A Program Continuum for Total School Health, developed under the direction of Roy R. Gray, Administrative Consultant, Physical Education and Health, issued by the State of Nebraska Division of Instructional Services, Lincoln, Nebraska, 1972.

Selected Sources of Free and/or Inexpensive Materials.

Aetna Life and Casualty, 151 Farmington Avenue, Hartford, Connecticut 06115.
Films and filmstrips on health and safety are available on a free-loan basis, except for return postage. Listings of films may be requested.

American Foundation for the Blind, 15 West 16th Street, New York 10017.
A catalog of publications on blindness available free or at minimal cost.

American Medical Association, 44 East 23rd Street, New York 10010, or Nebraska Heart Association, 3624 Farnam Street, Omaha, Nebraska (for film loan send to latter address).
Various publications and films are available free of cost. Listings will be sent on request.

American Medical Association. 535 North Dearborn Street, Chicago, Illinois 60610.
Various health aids and publications are available at minimal cost. The periodical Today's Health may also be purchased. Catalogs and order forms may be requested.

American Optometric Association, Inc., 7000 Chippewa Street, St. Louis, Missouri 63119.
Various booklets and leaflets concerning vision available free or at minimal cost.

Cereal Institute, Inc., 135 South Lasalle Street, Chicago, Illinois 60603.
Leaflets and audiovisual aids on cereals and the importance of breakfast are available free of charge.

Educator's Progress Service, Inc., Randolph, Wisconsin 53956.
A guide to free health materials. This resource is not a supplier of materials, but indicates where free materials can be obtained.

Florida Department of Citrus, P.O. Box 148, Lakeland, Florida 33802.
A variety of materials and teaching kits free or at minimal cost. Some of these aids would be satisfactory for health topics. A catalog may be requested.

General Mills, Inc., 9200 Wayzata Boulevard, Minneapolis, Minnesota 55440.
A leaflet containing information on elementary-level nutrition education is available upon request.

H. J. Heinz Company, 1062 Progress Street, Pittsburgh, Pennsylvania 15212.
Materials on food and nutrition available upon request.

Lactona Products Division, Warner-Lamhert Pharmaceutical Company, 201 Tabor Road, Morris Plains, New Jersey 07950.
Booklets on dental health are available at minimal cost.

Metropolitan Life Insurance Company, Health and Welfare Division, 1 Madison Avenue, New York 10010.
Publications and audiovisual aids on health topics are available free of charge. A catalog may be requested.

Modern Talking Picture Service, Inc., 1410 Harvard Street, Omaha, Nebraska 68102.
Films including health topics are available on a free-loan basis. A listing of films may be requested.

National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.
Publications and other materials on safety and driving safety are available at minimal cost.

Nebraska State Department of Health, State Capitol, Lincoln, Nebraska 68509.
Publications and free loan films are available upon request.

Nutrition Foundation, 99 Park Avenue, New York 10016
Booklets and other publications on nutrition are available at minimal cost. A listing of materials may be requested.

Oral Hygiene Publications, 1005 Liberty Avenue, Pittsburgh, Pennsylvania 15234.
Publications and teaching aids for dental health education are available at minimal cost. A brochure listing these materials may be requested.

TEACHING ARITHMETIC TO CHILDREN WITH SPECIFIC LANGUAGE DISABILITIES

Students who experience difficulty in the language arts often have difficulty in all other curriculum areas. However, a student with language disabilities does not necessarily have trouble with arithmetic. If his problems do carry over to this curriculum area, several techniques can be kept in mind when planning for him which will prevent failure and will provide success.

The arithmetic program should be kept as practical as possible. It may not be possible to get all concepts to him. The attempt should be made, however. If he requires a special program, give him the most practical program for everyday living. There are certain concepts that will be essential as he functions in society. They include addition, subtraction, multiplication, division, telling time, using money, and measurement.

These students require the multisensory approach. Always start with concrete teaching, using listening, touching and seeing activities. Progress to semi-concrete, then to semi-abstract and finally to abstract.

Myklebust and Johnson in their book Learning Disabilities indicate the following problems may be experienced:

1. Inability to establish a one-to-one correspondence.
2. Inability to count meaningfully.
3. Inability to associate the auditory and visual symbols.
4. Inability to learn both the cardinal and ordinal systems of counting.
5. Inability to visualize clusters of objects within a larger group.
6. Inability to grasp the principle of conservation of quantity.
7. Inability to perform arithmetic operations.
8. Inability to understand the meaning of the process signs.

9. Inability to understand the arrangement of the numbers on the page.
10. Inability to follow and remember the sequence of steps to be used in various mathematical operations.
11. Inability to understand the principles of measurement.
12. Inability to read maps and graphs.
13. Inability to choose the principles for solving problems in arithmetic reasoning.

SCOPE AND SEQUENCE OF SKILLS

NUMBERS, OPERATIONS, MATHEMATICAL SYSTEMS

Skill	Activity
Natural Numbers	Make arrays with counters, such as sticks, bottle caps, or any other object available. Give student cards on which the numbers have been made with Elmer's Glue. Allow him to feel the number. Using the overhead projector or a filmstrip, project large numbers on the board and have the student trace the number either with his finger or chalk. Make the reproduction smaller as the student develops the ability to work with smaller figures. Use "Sky Writing" where the student makes the number in the air with his finger. Write numerals on a "Magic Slate". Using sand trays and sand, write the numbers first for the student. Level the sand, hand the tray to the student and have him write the same numbers that you showed him. Use number cards which have the numbers made with heavy yarn. Move the fingers over the yarn for the tactile approach to learning the numbers. Paste pictures of objects on paper plates, perhaps five to a plate. Write the numbers on clothespins. Have the student place the pinch-type clothespin by the picture that has that many objects in it. The numbers may be put on the back of the plate so that the student can check himself for accuracy. Provide large numerals which have been cut from sandpaper. Encourage the student to trace them with his fingers. Put a series of numbers on the board not in the correct order. Allow the student to go to the board and erase all the numbers that he can identify as he tells you what they are. Use the number line in this way. Draw a line on the board. Place about 5 points on it. The teacher labels the first two or three points by making tally marks. She gives the chalk to a student, suggesting that he continue the pattern and label the next point. Ten

Skills	Activities
Natural Numbers (continued)	each of the tallies. First dot--one tap; second dot--two taps, etc. Then offer the chalk again. Repeat if necessary. Draw a line, labeling some of the points with numbers. (Use tags until pupils can write the numbers.) Let the student choose the tag that labels the next point, or have him write the appropriate number. Clothes-lines with knots for points, wire with paper clips, or masking tape on the floor make good number lines. Large tags with paper clip hooks should be available. On one set, or on one side of a set of cards, draw tallies representing the numbers 1-10. On another set or side, write the numbers 1-10. Ask the student to move his fingers over numerals of sand paper to identify them by touching and feeling them. Hold the child's hand and help him trace the numeral if he has motor control problems. After he has traced the number several times have him print the numeral on large ruled practice paper with a pencil or crayon. Have the student visually differentiate sand paper numerals on the cards. If the student has a visual handicap, have him use the whole hand to feel the shape of the numeral. Prepare a worksheet with a block of numerals on it, such as 1 6 5 3 1 2 5 4 2 4 6 2 1 6 3 2 Ask the student to put a circle around each 1, or 2, or any number with which you are working. Using a pegboard and pegs, ask the student to put his finger on the first peg and say 1, move to the next peg and say 2. Make certain that the child says the proper numeral for each object in the series. Any series of objects that would lend itself to the sense of touch might be used. For teaching Cardinal numbers, place a number on the flannel board or on the table. Ask the student to construct and identify sets containing the same amount of members. To teach multiples, use a clothesline and tags with numbers on them. On the clothesline hang number tags such as 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. Write a number 2 on 5 pinch clothespins. Ask the student to

Skills	Activities
Natural Numbers (continued)	put a clothespin on each number which is a multiple of 2. The same process could be followed with multiples of 3, 4, 5, etc. To learn to use tally marks, place several sets of objects on a table. Have the student make a tally mark for each object in the set. Use a Counting Frame or Abacus to teach sequence counting by 5's and 10's. Move 5 beads and say 5, another 5 and say 10 and on as high as needed. This could be used for counting by 2's and 10's and any other sequence needed. Until the student learns to write numerals give him problems with multiple-choice answers which he can encircle or underline. Until the student can write numbers, give him a rubber stamp to use in putting numbers on paper. Have the child close his eyes and concentrate only on counting and listening to the beat of a drum. Have him listen for a series of drum beats and simultaneously count (saying the number each time he hears a beat). When he achieves success, ask him to open his eyes, listen to the drum beats, and make marks representing the numbers but only to make marks representing the number of drum beats. This technique helps him understand concepts of more or less because he can associate the numeral 10 with a large group of marks and the numeral 2 with a smaller group. After he has learned to listen, count, and mark correctly, have him recount his marks, this time without the aid of the drum. Encourage him to use a steady, even rate while counting. Make certain that he touches each figure as he says the numbers. Have the child count objects in a manner that requires a motor response. Use a counting box in which the child places a peg in a hole as he says the number. Stringing beads while counting also is useful. By encouraging him to say a number only when he touches a peg or when he places a bead on a string, he gains understanding of the purpose of counting and his performance improves.

Skills	Activities
Natural Numbers (continued)	Large blocks or cardboard sheets with painted numerals from 1 to 10 are placed on the floor and the children are asked to walk forward and back on them. A child takes one step and then three more steps and notes how many steps he took altogether. Large number lines can be painted on rolls of wrapping paper and the child steps from dot to dot, saying the number and observing the visual symbols. If the child has no ability to relate quantity with the visual symbol, present dot configurations such as those found on dominoes. Each numeral is represented consistently by the same arrangement of dots until he can make the proper associations; use extra-large dominoes with indented dots so that the child can feel as well as see the configuration. He is asked to close his eyes and concentrate on the tactile impression. After he has the experience of feeling the configurations, he is asked to match the "feel" with the appearance. He is given one of the large dominoes, asked to feel it, carefully touching all the indentations, and then asked to open his eyes, look at another, and tell whether it is the same as the one he felt. Next these configurations are matched with the symbols (2, 4, etc.) Prepare a "Turn and Learn" board. This board has the numbers 1-9 on it. Put a hook which can be a paper clip under each number. Place notary seals of two different colors on a string. For the number 1, use a string which will be 5" long. Paste 1 color of notary seal 3 inches from the top. Stick the other color seal to the back of the one already on the string. A string should be made for each number. Because of the 2 colors of seals, the student can see that each number is one more than its predecessor. Prepare Set Cards. These are 5" x 6" cards, showing sets named by the numerals 1 through 9. Arrange adhesive labels in a uniform pattern on the cards. Then count the labels on the set cards. Prepare a "mystery box" which will provide a tactile experience. Use an inverted cardboard box with a hole in the side large enough for a child's hand to reach through. The teacher places an object in the box such as a circle of foam or a number. The students take turns trying to guess what it is by putting their hands inside.

Skills	Activities
Natural Numbers (continued)	Teach finger play (designated to reinforce the concept of oneness and twoness. "I have two eyes to see the world around me, Two ears to hear the sounds, Two feet to move myself around, Two hands to touch the ground. But I have only one head, one mouth, and one nose." When the children are playing house, ask them to set the table for a certain number of guests. They will have to count plates, forks, spoons, napkins and other items. For a game that helps with number recognition and learning the numbers that are one more and one less, distribute numbers around the circle of students. The teacher calls a number, the student holding it stands up, and then the students who hold the numbers that are one more and one less also stand up. Place beans, pebbles, buttons, paper clips or any other objects that can be counted into clear, plastic prescription containers. Ask the students to count the objects in them and then arrange them in sequence. Write the numbers to be drilled on clothespins. Have the student clip them on a clothes hanger in sequence. If the student needs opportunities to match sets and numerals, use the game "Candy in the Sack." On small paper bags write one numeral from 1-10. Prepare sets that contain pieces of candy, one on one diagram, two on another, etc. Ask the student to place the correct set of objects into the candy bag, according to the numbers outside. On long strips of oaktag, 4" by 16", write the number, the corresponding word, and objects that represent that number. Cut them apart so that there are three puzzle pieces, all cut at random so that each puzzle is different. The student will find that in order for the puzzle to fit together, he will have to have the correct number, word, and set of objects. To teach proper sequence of numbers use activities such as dot-to-dot pictures. Another approach to this activity is to draw simple illustrations on cards. Punch holes at the points where there are numbers. Place brass fasteners in the holes. Instead of drawing lines with a pencil from one hole to another, wind yarn or string around the brass fasteners. This is a simple activity for the teacher to check for accuracy.

Skills	Activities
Natural Numbers (continued)	To help the students who have difficulty with visual recall, prepare a tray that has several numbers on it. Plastic numerals or numerals written on cards might be used. Pass the tray around so that each student has an opportunity to look, touch, and tell which numbers were there. The number of different numerals on the tray could be increased as the students are ready for more numbers. For visual recall, prepare a poster which has several things on it relating to different sets of objects. There could be one cat, two trees, three birds in one tree, four apples on the other, etc. Give the student time to look at the picture, put it away, and tell someone what he saw, using the number concepts there. On paper, duplicate or draw two parallel lines. Mark the lines with equal segments. Number one line with numbers from 1 to 10 starting at the top and going to the bottom if the lines are vertical or from left to right if the lines are horizontal. Number the points in reverse order on the other line. The student should connect the points which are both number 1, those that are both 2, etc. Draw a number line on the board and label it. In labeling, there are at least two things that you can do that will draw a response from the students. Leave a blank. The student will want to fill in that blank. You also might name the points wrong. The student will correct the order. Use the records in the Elementary Library titled "One to Ten", call number RA-510-68. Also available are two records called "Math Made Meaningful", call numbers RA-510-55 and RA-510-56. Many games such as Bingo would serve as an incentive to learn numbers.

Skill	Activities
Ideas of order, betweenness, greater than, less than, equal to.	Give the student a piece of candy, have him eat it and ask if he wants more; upon request, give student two more pieces. Arrange 1 and 3 pieces of candy and ask which is more? Which is less? Group 3 and 6 pieces and again ask questions about them. If using candy in the classroom does not seem like a good idea this might be done with many other objects. Arrange pennies in groups of 1 and 3; 3 and 6; 1 and 6; 3 and 7; 2 and 5, etc. Ask student alternately which is more and less. Show pictures or drawings of coins and play a game, having students select more and less alternately. Divide students by sex and have them determine if there are more, less, or the same number of boys and girls, and ask student to mark which is more and less. Group students in number arrangement similar to coins above and play the game, having students select more and less alternately. Divide students by sex and have them determine if there are more, less, or the same number of boys and girls; divide them by students who have blue eyes and brown eyes. Build varied sets, beginning with one penny and one button compared with two pencils and one button. Gradually increase complexity until ten or more objects in a set are varied. Talk about the sets represented. Use the game "I Am Thinking of a Number." Each student is given a card with a number on it. The teacher describes the number in this manner: "I am thinking of a number one less that 9." The student who thinks he has the card with the correct number on it stands. The students decide whether the response is correct. Have the students work with sets of objects. Give a student two sets of different objects and have him match them. If the sets do not contain the same number of objects, he should indicate that there are more, or fewer objects in one set than in the other. Use a strip of paper to represent a line. The paper should be about 2" wide and 3' long. Place three objects, such as an eraser, a block, and a spool, on the paper. The student tells which object is between the other two. Give the student another object and tell him to put it on the paper so that it is between the two objects that you indicate.

Skills	Activities
Ideas of order, betweenness, greater than, less than, equal to. (continued)	Use different combinations which equal ten. It is necessary to demonstrate the similarities for the SLD child and to use more verbalizations with him. He does not gain insights from visual inspection; his learning requires guidance, considerable discussion, and repetition. To develop the concept of conservation of quantity use scales. Place a pound of beans in a bag and ask the child to weigh them. Ask him to pour the beans from the large bag into two or three smaller ones. He will observe that even though the beans were divided into smaller lots, the total amount is the same. To build "where" concepts (in front of, in back of, between) play the game "Where Am I." Line up three or four children as if for marching. Leave spaces for others to enter the line. Describe what you are doing: Now I'm going to get in line, too. I will stand in front of Tom. Now I'm going to change my place in line and stand in front of Bob. Sue, would you like to come stand in front of Bill? When all group members have located themselves in front of someone, add another dimension: "I'm in front of Ellen and I'm in back of Denise." After following your directions for several rounds, students might choose their own places in line, telling where they are. The idea of between fits into this format, too. "I'm in back of Tod. I'm in front of Jean. I'm between Tod and Jean." For more practice with between, place a widely-spaced row of objects on the floor. Ask children to walk between the book and the eraser, between the book and the pencil, etc. For more or less have the students play "Musical Chairs". There will be fewer chairs than pupils. To give concept of size ask students to build towers of blocks. Use superlatives to describe their buildings. To build "where" concepts use the game "Supermarket Shelves" (top, bottom, above, below). Pretend that a three shelf bookcase is a supermarket. Or tape three shoe boxes together with the open sides toward the student. Place some cans, boxes, and plastic bottles on the shelves. (continued)

Skills	Activities
Ideas of order, Betweenness, greater than, less than, equal to. (continued)	Say, "I'm going to put this can on the top shelf." Put it there and ask, "Does someone want to put this box on the top shelf?" When everyone in the group has had a chance to place an item on the top shelf, move the merchandise to the bottom shelf. Encourage children to use relational words. Teacher: "Where did you put the box, Jim?" Jim: "I put it on the bottom shelf." When children are responding to top and bottom directions, introduce above and below. Put a bottle on the middle shelf directly below a can that is on the top shelf. "I'm putting this bottle below the juice can. Now I'm going to put a box below the bottle. Later fill the middle shelf with items. Ask children to place the remaining items on the shelves and tell two things about where they put each one--for example, "On the top shelf, above the green box." To teach lowest, middle, highest, put numbers on the flannel board, such as 6, 7, 5, 9, 8. The student should arrange them in order and tell which is the highest, middle, and lowest. Use combination of numbers. Cut various sizes of circles or squares from large pieces of felt and ask the student to place the missing circles in the correct spaces. If he cannot do so, permit him to superimpose the figures so that he can feel around the edges and perceive which is larger. With the various sizes of circles or squares cut from felt, ask the student to arrange them in a row beginning with the smallest and work toward the largest. If he is unable to do so, provide a key, showing circles drawn in the proper order, and ask him to match the felt figures with the outline. Use auditory activities to help the child visually perceive the differences in lengths of lines. Two tones of the same frequency (produced by a whistle or a pure tone audiometer) may be used and the student is asked to indicate whether the sounds are the same length. Play two tones, one long and one short, and ask the student to tell whether they are the same. Next, use a tone while simultaneously drawing a line at the rate of approximately one inch per second. (cont.)

Skills	Activities
Ideas of order, betweenness, greater than, less than, equal to. (continued)	For instance, listen to a tone of five seconds and draw a line two inches long. Have the child watch and listen closely, noting the differences which he sees. If the student fails to relate the size of the object to the area into which he must put it, match index cards or greeting cards to different sized envelopes. The student should first superimpose the card on the outside to determine whether it will fit; later have him make these estimations using only visual inspection. Cut strips of paper or posterboard into pieces about one inch wide, varying in length from one to ten inches. Leave some pieces unmarked and prepare others showing the one-inch intervals. Show the child the strips and ask him to tell which is the longest, the shortest, etc. Then take the ten-inch strip and demonstrate for him the many ways in which he can group or regroup smaller strips to make an amount that is equal to the one long strip. For example, begin with two ten-inch strips; ask him to superimpose one on the other and note whether they are the same. Then place a nine-inch strip on top of the ten-inch strip and ask him whether they look the same. When he sees that it is shorter, ask him to look at the other strips to determine which one could be added to the nine-inch strip so that it would be as long as or the same as the ten-inch strip. Put a rope on the floor. The rope should be about six feet long. Have 3 students stand on the rope. Ask the other students to tell which student is standing between the other two. Use a bingo game to give drill on recognizing the symbols for greater than, less than, equal to, not equal to, intersection, union, empty set, set member, etc. Prepare cards that have the symbols on them. Write the words on flash cards. As a caller shows the flash cards, students mark the symbol on their bingo cards if they have it or recognize it. Winner has all symbols in a row covered as in the conventional bingo game.

Skills	Activity
Ordinal Numbers	Give the student a sequence of objects and have him identify the ordinal position of the specific object that you designate. Place 10 or 20 objects (or any number you want to work with) on a flannel board. Have the student go to the flannel board and tell the ordinal position of each object. Place several pegs in the peg board. Have the student identify the ordinal position of each peg. Place three or four toy cars in a line near a toy garage (a cardboard carton will do). Ask, "Which car is closest to the garage? Which car is farthest away? Which car is at the end of the line? Which car is at the beginning of the line?" Teacher explains that the car at the beginning of the line is the first, the next is the second.

Skill	Activity
Combining and separating actions associated with pictured situations	Let the students use objects to demonstrate the situation in the problem. Use the Cuisenaire Rods. For addition, select one of the rods at random. Find all the combinations that can be found to make the same length. Suppose the 3 rod is chosen. Have the student make as many combinations of rods that he can find that will make the same length. For subtraction, place one rod on top of the other and find a rod that represents the difference. Project pictures which set up problems on the board using the overhead projector or a filmstrip which has been prepared. Have him orally tell you what action should be taken. Act out the problem physically. If the problem involves 2 dogs and 3 dogs, have the students pretend to be dogs and decide what action should be taken and what the answer to the problem is.
Symbolism	Write three or four signs in a row and ask the student to tell whether they are the same or which one is different. If he cannot perceive them as units, draw borders around each sign until he learns to visualize them properly. Give practice by reading problems without working them. Determine whether he associates the spoken word with the visual symbol. Synonyms for each sign should be clarified so he understands that 6 plus 3 means the same as 6 and 3. As a readiness device, use the activities in the Percepts box. The student and the teacher can match the signs and symbols, shapes and forms on the cards or it can be done by one child. It would be best for the children not to compete in this activity or for it to be a timed activity.
Problem situations, addition and subtraction	To improve the visual-spatial arrangement of numbers in working with problems, give students cutout numbers and process signs to arrange, first according to a visual model and then from dictation. Write the problems on the blackboard and ask the student to arrange his numbers and symbols in the same way. Call attention to any inversions, reversals or misalignments, and correct each one, pointing out the mistakes and rearrange (continued)

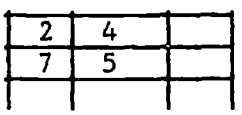
Skill	Activity
Problem situations, addition and subtraction (continued)	the figures. Later ask the students to write problems from dictation, which involves conversion of an auditory statement to the visual form. Students who have difficulty with retaining the sequence of steps used in solving problems should be encouraged to verbalize each step in detail while working. Various types of cues can be used to indicate the operational procedures. A green dot might be drawn above the numbers showing the starting point for calculation; arrows may be drawn to show the direction in which to work. Until the steps are automatic, written charts are provided containing detailed instructions. Start teaching pupils in first and second grades to observe and judge the important details in a problem. Give them pictures and ask them to explain the theme of each picture. If a picture shows four girls and five boys playing with a ball, ask the pupils to tell what they see in the picture. Ask the pupils to look for the important details. Ask for oral responses at first. The next stage is to have some pupil tell a story in a few sentences while the other pupils draw a picture of the story. They should draw the important details in the story. Next present a picture and ask pupils to write a few sentences about it. Concentrate on pupils expressing the main theme. Divide the class into several separate groups or teams and use different picuures. Members of each group can pool their responses and write down what represents a summation of all their ideas. Now ask a student or a group to write a story in a few sentences and have the other pupils draw a picture that represents the story. Show the pupils a picture and ask them to write a story about the picture and then a mathematical sentence to describe the story. Pupils should be given short written stories and then be asked to write the mathematical sentences to go with the stories. Do not require answers at first. Students who are able can help the teacher write the short stories and the other pupils can write the mathematical sentence. Then reverse the activity; give the pupils a simple mathematical sentence and ask them to write a story that fits the sentence. After students are successful at writing mathematical sentences for simple word problems, and can write word problems for simple mathematical sentences, they are ready for the next step.

Skills	Activities
Additive and Subtractive Situations	Use the Cuisenaire Rods. For addition, select one of the rods at random. Find all the combinations that can be found to make the same length. Suppose an orange rod is chosen. How many combinations of rods can we find that will make the same length. For subtraction, place one rod on top of the other and find a rod that represents the difference. Using counting blocks, introduce simple additive combinations to sum five. Have the student rearrange the combinations and draw pictures of the block combinations. Have the student make his own simple addition formulas. Encourage him to use objects such as clothespins, buttons, feltboard objects, the Abacus, and any other counting devices. Prepare paper plates which have pictures of objects and the problems that they represent. Provide clothespins with the answers on them to be pinched onto the plate at the proper spot. The student can check himself if the answers are given on the back of the paper plate. Use flash cards on which the numbers are made of something that can be touched, such as yarn, glue, or sandpaper. Use a sand tray and sand. The teacher writes the problem and the answer in the sand, shakes it out and has the student repeat the action. Practice addition and subtraction on "Magic Slates." Project the problems on the board using the overhead projector or a filmstrip which has been prepared. Vary the size, starting with a large reproduction. Have the student trace this problem and answer with chalk or with his finger. Use workbook activities which involve very little or no reading. If word problems are giving difficulty, they should be read to the student or be taken from a tape that has been prepared. After hearing the problem, ask the student to draw a picture to illustrate the problem, so that he can visualize what the answer represents.

Skills	Activities
Additive and Subtractive Situations (continued)	Acting out a problem physically will help some students. For example, if the problem involves change from a purchase, two students will participate, using real or play money, one as the purchaser and one as the seller. They will need to decide what the process should be. Using a pegboard and pegs set up problems, taking away pegs and adding to them. Duplicate sheets of paper with a pair of parallel lines marked with equal segments; on the left line, number each point from one to ten and number the right line in reverse order. Have the student follow the rule of 3, i.e., go from 1 on left line to 4 on right line, 2 on left line to 5, etc., continuing until the last dot on the right line is reached. This will illustrate all of the combinations of three. Have a child look at a number fact, such as "4 plus 5 makes 9." Try to picture the fact in his head with eyes closed, and attempt to write it down from memory. Have him then repeat this in as many ways as possible: e.g. $4 + 5 = 9$ $\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$ $5 + 4 = 9$ $\begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array}$ $\begin{array}{r} 205 \\ +104 \\ \hline 309 \end{array}$ $\begin{array}{r} 43 \\ +51 \\ \hline 94 \end{array}$ Students enjoy mathematics games and activities. Prepare a math center somewhere in the room. The center will be useful for free time activity, small group remedial work and individual testing. Some of the things that might be used in the center are: records or tapes of combinations flashcards addition tables and number lines a flannel board and flannel objects bottle caps, popsicle sticks Cuisennaire Rods puzzle squares and work sheets a deck of cards to play "sets" Students cut out or draw pictures of items they want in their store, paste them on cardboard squares, mark the price on the back of the cardboard, and display the items in their store area. Different students can take turns as store owner. They must decide how much money is owed to them and give the correct change. Some of them may even want to keep a business ledger by listing the total amount of money they take in during all their turns as store owner.

Skills	Activity
Additive and Subtractive Situation (continued)	Prepare the game "Shopping Trip". Cut a large number of grocery store ads out of newspapers. Divide the class into teams and give each team a list of items to purchase, including on each shopping list the amount of money the team has to spend. Display various ads in different parts of the room, and then take the lists and "go shopping." Team members may discuss their purchases with one another, but they keep records separately so that they can check together later to avoid errors. When the student completes his list, he should break down the change he will receive into the proper coins, and compare his results with other team members. By using clothing and toy ads from newspapers or by cutting up old catalogs to use for items sold in the store, the teacher can vary the "shopping trip" activity. Some students might try filling out catalog order forms as an individual activity, picking five favorite items and then figuring the total price including tax. Students enjoy choosing things to eat. In the following game they are to "Pick a Lunch" from a menu and find the total cost. Figure the total cost of lunch and the correct change if a dollar is used. MENU Sandwiches Cheese 25 Ham 30 Peanut Butter 20 Hamburger 30 Hot Dog 20 Tuna 25 Beef 35 Soup Chili 30 Vegetable 25 Beef 20 Beverages Milk 12 Milk Shake 25 Root Beer 10, 25 Orange 10, 25 Coffee 10 Tea 10 Dessert Ice Cream 15 Cake 20 Pie 20 Ask the students to draw the sets of objects. By drawing the sets, they acquire a mental image of the sets. Next use numerals and sets. Lay out two numerals with sets to match and then find the total of the two sets and the numeral to match. All students should have a number line and be able to use it for addition and subtraction. Allow them to use aids as long as they need them so that understanding comes before memorizing.

Skills	Activity
Additive and Subtractive Situations (continued)	To help with an understanding of subtraction, teach the students that subtraction undoes what addition does. Have the students join in activities that can be done and undone. Say to students "We are sitting. How can we 'undo' sitting?" They will probably suggest standing up. Then say, "Standing undoes sitting. How can I undo standing?" Most children will probably suggest sitting again. Next, present them with a demonstration. Using wooden or plastic building blocks, build a "tower" of several blocks. Ask students to tell what you are doing. They will see the activity as "building". Ask them how to "unbuild." Ask one of the students to show the class how to "unbuild". Then ask students to describe what is being done when someone "unbuilds" blocks. Soon someone will say that blocks are being "taken away." At this point, some students may realize that building is adding and that the undoing, or unbuilding, is taking away or subtracting. Now provide each student with ten or more counters. Ask students to count out four objects and group them. Then have them count and group six objects. Help them realize they now have four objects plus six objects which make, or equal, ten objects. Ask students to lay out these ten objects and take away six of them. Students should understand that the number of objects they start with is the same as the sum in addition. The six counters they take away used to be one addend and the four objects they have left used to be the other addend. Play the game "More or Less". Make a pack of 36 index cards. Number the cards from 1 to 18 so that there are two cards for each number. Shuffle the cards and place the pile face down. The leader of the game takes the first card and holds it up for the players to see. Suppose it is 10. The first player takes another card and shows it. Suppose it is 4. The player compares it with the 10 card and says, "It is less." Then he must say how much less. He must find the answer by thinking the subtraction. If a player answers correctly, he gets a point. When they have gone through all the cards, mix them up and start again.

Skills	Activity
Additive and Subtractive Situation (continued)	Play the game "Making Number Sentences". You will need a paper bag and up to 18 counters, depending on how difficult you want to make the game. Show students that the bag is empty. Let the class see you drop six counters into the bag, and then ask a student to take some out. He should not let anyone see how many he removes. Ask another student to look in the bag and tell how many counters are left. Next, ask someone to write a number sentence on the board to show how many counters the student took out. Play "What Number Am I Thinking Of?" Students take turns making up problems like: "I am thinking of a number. After I subtract 3 from it, the answer is 5. What is my number?" The game can be made more difficult by expanding it to include addition and subtraction in a number of steps, such as: "I am thinking of a number. After I subtract 6 from it and add 4, the answer is 8. What is the number? The students can also write number sentences for this game. Use puzzle squares for both addition and subtraction. Addition  Subtraction  Provide the student with a Matrix chart which shows the addition and subtraction combinations. He will give it up when he knows these facts. It slows him up in his work but makes it possible for him to function when the activity calls for these concepts. Play games that give drill in the combinations. Numo, Sum Fun, Smarty, and Orbiting the Earth are games which are helpful. Games can be prepared by the teacher, such as Bingo, using addition and subtraction facts. Start at the beginning with introducing every new addition and subtraction fact by asking the student to use concrete materials to show the fact. He must understand what the numbers represent to make them meaningful.

Skills	Activity
Additive and Subtractive Situation (continued)	As often as possible, work with the student on a one-to-one basis. There are many advantages in this type of work situation. Prepare puzzles. Start with a flashcard. Cut the answer apart from the other numbers. Cut it so that it is a puzzle. As the student puts the two parts together, only the correct answer will complete the puzzle. Set math facts to familiar nursery rhyme tunes, for instance, sing 8 + 9 is 17 to the tune of "Mary Had a Little Lamb." A tune can be found for nearly every combination. To assist the student with organizing addition and multiplication facts, give him 3 x 5 cards with a number written on one side, i.e., 13. He then places all of the combination that make that sum on the other side, such as 10 + 3; 8 + 5; 7 + 6; etc. Have available to the student a mathematics balance. These can be purchased or can be made by the teacher from a coat hanger, clothespins and paper cups. Cuisennaire rods can be used as weights. If an orange rod is put in one cup at one end it will take two other rods which equal orange to make the sides balance. For drill of facts, use the electric board which lights up when connection is made between a problem and the correct answer. The Table Tamer is a device which can be purchased, or this piece of equipment can be made by the teacher by using metal bolt heads, two wires, a flashlight bulb, and a battery, mounted on a board. Cut large numerals out of oaktag. Laminate them if possible. Ask the student to write all the combinations of that number on the face of it. These can be displayed on a bulletin board to help all the students in the classroom. A simple way to demonstrate concretely addition and subtraction facts is to place snap clothespins on a wire coat hanger, i.e. 3 pins plus 2 pins makes 5 pins.

Skills	Activities
Additive and Subtractive Situation (continued)	Counting rhymes might be used. Simon and Schuster have published a book, Counting Rhymes, which was written by Mary Reed. Prepare magic squares and laminate them if possible. The students can write answers with crayon and then rub them off with a kleenex.

Skill	Activity
Problem situations, addition and subtraction (continued)	Compose stories that are longer and include details that are not essential to solving the main part of the problem. Ask the pupils to tell which part of the story might be eliminated without damaging the word problem. Often word problems in commercial primary books and workbooks are written with words that are too difficult for most pupils at that level. If this is the case, make up word problems that pupils can read. Center them around major curriculum studies or projects. For instance, if third graders are studying about pioneers, many of the word problems in mathematics should have pioneer life as their theme. Give pupils story problems which are light and humorous for some variety. It is fun for students when they can compare the weights of a hippopotamus and a mouse, or they can compare the speeds of the pony express and a jet plane. Allow the student to use objects to demonstrate the situations in the problems. Supply the student with flashcards where the numbers are raised by applying Elmers Glue to them. The student should touch the numbers on the card. Make flashcards with problems on them which have the numbers made of heavy yarn. Use the sand tray and sand. The teacher should write the problem in the sand and solve it. She then smooths the sand and has the student repeat her actions. Practice addition and subtraction solutions on "Magic Slates." Use Cuisenaire Rods. For example, choose the 5 rod. Have the student see what he can add to a 3 red to make it the same length as the 5 rod, thus setting up the problem 3 + 2 = 5. The same type activity, reversing the action could be used for subtraction. After the student knows what the problem asks for have him solve it by using an Abacus or other counting device.

Skill	Activity
Problem situations, addition and subtraction (continued)	If word problems are giving difficulty, they should be read to him or taken from a tape that has been prepared. After hearing the problem, the student could draw a picture to represent the problem, so that he can visualize the process. Acting out a problem physically will help some students. For example, if the problem involves change from a purchase, two students will participate--using real or play money--one as the purchaser and one as the seller. They will see what the process and answer should be.
Mathematical sentences for problem situations using addition and subtraction.	Allow the student to use objects to set up the facts given in the problem so that he can actually see them. If the problem has been read aloud so that the student knows what is says, it would be effective to supply him with objects with which to work. If the problem is: Joe had some pennies. He was given 7 more. Now he has 13 pennies (or objects to represent pennies). How many pennies did he have to begin with? Have a student play the part of Joe. Place 6 pennies in his hand but do not allow them to be counted. Another student should add the 7 more. He then is holding 13. This should help him to write the mathematical sentence and be able to solve it. The student might find it much easier to write his sentence if he could see it in pictures that he had made. Let him draw the information given in the problem and tell you the sentence from those pictures.
Multiplication and Division Situations	Use a pegboard and pegs. Set up problems using multiplication and division. The child will demonstrate the solution with the pegs. Many students enjoy mathematics in the form of games and activities. Build a math center somewhere in the room. The center will be useful for free time activity, small group remedial work and individual testing. Some of the things that might be used in the center are: records or tapes of multiplication and division combinations flashcards multiplication and division tables and number lines a flannel board and flannel objects bottle caps, Popsicle sticks Cuisenaire Rods puzzle squares and work sheets

Skill	Activity
Multiplication and Division Situations (continued)	Prepare the game "Shopping Trip". Cut a large number of grocery store ads out of newspapers. Divide the class into teams and give each team a list of items to purchase, including on each shopping list the amount of money the team has to spend. Post the various ads in different parts of the room, and then take the lists and "go shopping". Team members may discuss their purchases with one another, but keep records separately so they can check together later to avoid errors. This activity involves many basic mathematical operations. If an ad reads "2 cans for 26¢" and only one can is on the list, the children must divide by 2. If something costs 32¢ a box and the list calls for "4 boxes", the children would multiply. Interesting discussions will arise from advertisement reading "3 for $1.00" All students should have a number line and be able to use it for multiplication and division. Allow them to use aids as long as they need them so that understanding comes before memorization. Play games that give drill in these concepts. Games that can be purchased are Winning Touch, Numo, Multiplication Bingo, Magic Squares, and Orbiting the Earth. Use Matrix charts for the multiplication and division processes. Prepare materials so that students can use the Lattice Multiplication system. Explanations for this system can be found in several sources: Models for Mathematics in the Elementary Schools by Kennedy, Math Activities for Child Involvement, by Enoch Dumas or Teaching Mathematics in the Elementary School, by Lola June May. Teach the students to do Finger Multiplication, which is explained in the book listed in the previous activity written by Dumas. Prepare Napier's Rods and teach the students to use them. Explanations are given in either of the books listed in the previous item on Lattice Multiplication written by Dumas or Kennedy.

Skill	Activity
Multiplication and Division Situations (continued)	The Cruisenaire Rods lend themselves well to teaching multiplication and division. The student will know what rod has been designated to be the "one" rod. Have him show that if we build rows including 4 rods and have three rows we will end up with 12 rods. The division process can be shown by using Cruisenaire Rods. Start with 12 "one" rods and divide them into groups of 3. There will be 4 groups, which demonstrates the problem 12 ÷ 3 = 4. Prepare a work sheet which has nine boxes on it. In each box place 15 dots in rows. Under the dots in each box give simple directions such as "two 5's," or "five 3's". Ask the student to draw circles to group the dots according to the directions. The Abacus would demonstrate multiplication and division effectively. Request that the student show 2 groups of 5's. He will see that 2 x 5 is 10 beads. For multiplication ask the student to divide ten beads into 2 equal groups. He will be able to see that 10 ÷ 2 = 5. Flannel boards can be used for the grouping of objects. Flash cards with the numbers made of heavy yarn, Elmers Glue or sandpaper might be used. Trace the numerals with the fingers. Using sand trays and sand, write the problem first for the student. Level the sand, hand the tray to the student and have him repeat writing the same problem that the teacher wrote. If word problems are giving difficulty they should be read to the student or taken from a tape that has been prepared. After hearing the problem, it would be helpful if the student would draw a picture to illustrate the problem, so that he can visualize it. Acting out a problem physically will help some students. For example, if the problem involves buying several articles at a given cost, ask two students to participate, using real or play money, one as the purchaser and one as the seller. This will show the multiplication process.

Skill	Activity
Multiplication and Division Situations (continued)	Prepare charts which can be displayed in the room. These charts should illustrate the steps in the proper sequence and be used to serve as guides for the student who has difficulty in sequential memory while performing multiplication and division. A small chart for the student to keep in his math book would also be helpful. For a student who has difficulty with placing numbers in the proper location when doing multiplication or division, provide him with activity sheets which have lines drawn to indicate where each number should be written. Spatial problems are frequently evident in the mathematics class. If a student has difficulty learning a multiplication or division fact, such as 9 x 8, give him a large piece of newsprint paper and have him write the fact in very large numbers and repeat it as many times as it will fit on the paper. Several times during the day, ask him to recall that one fact. Ask him for the fact the next morning. If he has it, move on to one more difficult problem for concentration the next day. Teach the student to solve multiplication problems by using addition if he breaks down on the traditional process. If the student knows what 2 x 8 is, he will understand that 4 x 8 must be 2 sets of 2 x 8. He then adds 16 and 16 to get the answer of 32. If the student is solving division problems such as 20 ÷ 6 = ( ) give him a piece of grid paper. On the graph paper draw a heavy dark line around 20 boxes. Number each box. Take a colored pencil and shade in as many groups of six as you can find. How many squares are left over? The number of squares left over is the remainder in this problem. This can also be done by cutting the grid into peices and pasting them into a long line; then fold them every six squares leaving two left (remainder). Another technique for teaching division is to use grid paper with enough boxes to be a few more than the dividend calls for. Number each box. All of the boxes should be in one horizontal line. To work with the problem 40 ÷ 8, start with 40 grids. Fold them off in groups of eight, then count the groups.

Skill	Activity
Mathematical sentences for problem situations using multiplication and division.	If the problem has been read aloud so that the student knows what it says, it would be effective to supply him with objects with which to work. Role playing helps students. Pretend to be people in the problem. Use objects which are suggested in the problem. Talk the problem through until he can see the sentence and the action, resulting in the correct answer. The student might find it easier to write his sentence if he could see it in pictures that he had drawn. Let him draw the information given in the problem and tell you the sentence from those pictures.

Skill	Activity
Fractions: meaning of, equivalent fractions, sets of equivalent fractions.	As a readiness device use the Percepts cards. The student will match signs and symbols, shapes and forms. The teacher can do this activity with the student or he can do it alone. Work with geometric shapes should precede the introduction of fractional numbers. Wire shapes can be used so that pupils can familiarize themselves with them. After students have had some practice matching geometric figures, give students several pieces of paper representing rectangular regions, all the same size. One should be labeled with letter A. This shape will represent a whole unit. Another piece of paper should be folded so that the paper has two congruent parts. The parts should be separated by cutting on the fold and each part should be labeled with the letter B. A third piece of paper should be folded so that there are 4 congruent parts. The parts should be separated and each part labeled with the letter C. Ask students how many parts called B are needed to cover the part called A. How many parts called C are needed to cover the part called A? Give pupils geometric figures drawn on paper. Figures are divided into congruent parts with some of the parts shaded. Pupils should look at each figure and count the number of shaded parts. Talk about how many shaded parts there are compared to all the parts. Similar questions should be asked about the non-shaded parts. Have students make drawings to illustrate the fractions written on a piece of paper. Use a number line. Divide the line segment from 0 to 1 into halves. Students will learn that the dot at the midpoint represents the fractional number 1/2. Prepare large circular disks. Cut one disk into 2 equal parts, another into 3 equal parts, another into 4 equal parts, and so on. Leave one disk intact. These disks can be made for use on a flannel board or a magnetic board, or they could be made of oaktag and used on a table or on the classroom floor. There are several ways that these disks can be used. (continued)

Skill	Activity
Fractions: meaning of, equivalent fractions, sets of equivalent fractions. (continued)	a. Put the disk that is intact on the flannel board or on the floor. Put the pieces of the other disk in a pile. Then have a student choose pieces from the pile and build a disk showing thirds. Have him identify one third of the disk, two thirds of the disk, and three thirds of the disk. For each of the other disks, follow a similar procedure and have the students assemble the parts. b. Put one half of a disk on the flannel board or the floor, and ask the students to identify the piece. If they cannot do this, have them find the other half of the disk and assemble the disk. Follow a similar procedure for one third, one fourth, one fifth, one sixth, one seventh, and one eighth. If students find it hard to discriminate between some of these fractional parts of a disk, allow them to assemble the disk to help them decide what fractional part they are dealing with. c. Assemble the parts for each of the disks. To illustrate equivalent fractions, use appropriate pieces of disks. Consider the disk cut into thirds. Select one third of the disk. Then use the disk that is cut into sixths, and show that two sixths is the same amount as one third. Show this by placing the two sixths over the one third. This method can also be used to show the students that they cannot use fourths to show the same amount as one third, that fifths cannot show one third, and so on. To vary this activity, a set of rectangular-shaped (or square) cutouts could be used. To show equivalence, give each student a number line containing only a 0 and a 1. Give him another piece of paper and make a strip the length of the unit from 0 to 1 on the number line. The strip of paper should be folded into two equal parts according to the length. This strip should be placed just above the number line. At the place where the fold meets the strip of paper they should make a dot. The fraction 1/2 should be written below the dot, the fraction 0/2 below the dot at 0, and the fraction 2/2 below the dot at 1. The same strip should be folded into fourths. Place the strip of paper over the number line with one end on the dot labeled 0 and the other end matching the dot labeled 1. At the first fold to the right of 0, have the pupils make a dot and label this 1/4.

Skill	Activity
Fractions: meaning of, equivalent fractions, sets of equivalent fractions. (continued)	Use money to illustrate equivalent fractions. A dollar bill represents the whole unit. Name a piece of money that is the same as 2 quarters or one half of a dollar, the amount is the same. The difference is in the number of coins. Fill plastic containers, such as plastic pill boxes with sand or rice to illustrate 1/2 full, 1/4 full, etc. Give the student opportunities to arrange the bottles in order of increasing and decreasing size of contents. If you want the student to be able to check himself, tape on the bottom of the bottle can supply the key. Prepare a small chart for the student to keep in his math book to be used when working with fractions. On it illustrate that all of the strips are equivalent even though one is whole (1), one is divided into 2 halves, one is divided into four quarters, one is divided into 3 thirds, one is divided into 6 sixths, etc. A large chart could also be displayed in the classroom. String wooden beads on wire or string. Use them to illustrate ½, ¼ or any other fractional number. Counters of any type such as bean, rocks, blocks, marbles, can be divided into fractional sets. Crackers that are marked off into equal sections (usually six or four sections) can be used to illustrate fractions of fourths and sixths when they are introduced. The crackers can then be eaten and enjoyed by the students. Cuisenaire Rods can be used in many ways. One approach would be to ask the student to take a rod, such as the orange one. He then is asked to use all the combinations that he can find that will make ½ the length of that rod. Play games. One possibility is to divide the class into several teams. Ask one person to rename a fraction, such as ½. If he says ¼ and ¼, his team gets a point. If other teams can also come up with other names that are equivalent to 1/2, their team gets a point, also.

Skill	Activity
Fractions: meaning of, equivalent fractions, sets of equivalent fractions. (continued)	Prepare a recipe in the classroom where the ingredients have to be trippled, or doubled, or divided by ½. This might be a whipped pudding that does not have to be cooked. Eating it after preparing it will be part of the fun. Prepare Magic Squares using fractions. After students have found that they can do this, give them the paper and have them prepare the square for their classmates to work. Provide a game that will give practice in adding fractions. On a cardboard, mount several plastic bowls or cans. Label them with numbers that are fractions. Throw a bean bag into the cans and add the number of points by adding the fractions. The numbers on the containers should be changed from time to time. Prepare a bingo game using fractions. Use grid paper. If the concept for the day is teaching ½ block off four of the grids in a rectangle. In other words, let one grid equal ½. Give the students grid paper that has shapes which include different numbers of grids. Let them define the mixed fraction that those grids represent. A shape that includes 9 grids would be representative of 2¼. This activity would lead well into using the scale of miles on a map. If the student knows that ½" equals 100 miles, he then, by using a ruler, can convert 2½ inches into 400 miles. Some students can better understand equivalent fractions if they work with horizontal strips rather than fraction disks. Prepare transparency overlays which start with the whole and show the division of the whole into fractional parts.

SETS, CONDITIONS AND VARIABLES

Skill	Activity
Ideas of many and few.	Use the flannel board. Provide the student with two sets of objects. Match the objects in the two sets. If there are objects "left over" in one set, have the student tell which set contains more members and which set contains fewer members. Provide activities in which the students work with actual objects in real situations. For example, place several books on a student's desk and ask if he has many, or few books. Then divide the same set of books among several students and ask if each student has many, or few, books. Use the Cuisenaire Rods to demonstrate many and few as in the above activity.
Tabulating sets	Introduce braces in a tactile way. Have them done on cards where Elmer's Glue has been applied, or use heavy yarn or sand paper. Tabulation of sets could be done on "Magic Slates" or on the sand trays. The teacher would demonstrate first, hand the tray to the student and have him repeat the activity for her. Supply the student with worksheets which have no reading on them. Give instructions orally.
Symbolism	Cards on which the symbols have been made so that they can be felt might be used. Heavy yarn, Elmer's Glue, and sand paper would be effective. Project the symbols on a screen or the board with a prepared filmstrip or an overhead projector. Have student trace the symbol with chalk or with his finger. As it becomes easier for him, make the original smaller. Use sand trays and sand. The teacher draws the symbol, erase it, hand the tray to the student and have him repeat her action.
Rate Pairs	To give demonstrations, have sets of objects and coins or sets of cutouts for the flannel board. Show the students 2 sets of objects and have them figure out the rate pair that can be used to make the comparison or that can be used to tell the price. The student might then show the rate pair on the chalkboard.

Skill	Activity
Rate Pairs (continued)	Have 6 white disks and 4 red disks on the flannel board. Establish that the rate pair 5 to 3 can be used to compare the number of white disks with the number of red disks. Show this rate pair on the chalkboard. Then arrange, or have the students arrange, the disks in groups in such a way that the number of white disks and the number of red disks in each group is the same. Have them give another rate pair that can be used to compare 5 white disks with 3 red disks. Show the students 1 apple and 4 pennies (or any other 2 sets of objects). One to 4 tells about the price of the apple. Then show the students another group of 1 apple and 4 pennies. Establish that 2 to 3 tells about the price of apples.

Skill	Activity
Determining equivalence by one-to-one correspondence	Prepare several pieces of felt on which there are various numbers of buttons. Prepare a second set in which there are only button holes. Give the child the pieces of felt and ask him to match the pieces with the same number of buttons and holes. Do not permit him to skip or misalign the pieces of buttons and holes. Buttoning the pieces is good motor practice. Place a series of doll figures or paper dolls in a row and ask the child to draw a hat for each one, stressing the concept of one-to-one correspondence. Assign errands that will give practice in one-to-one correspondence. Ask one child to place a sheet of paper or a pencil on each desk, explaining that every child must have one and that no child should be without. He will have to match objects and children. Those who know how to write numbers are given a series of circles in rows and asked to write a number in each circle. Tell the student not to forget any circles and that no circle can have two numbers inside. Using dominoes, ask the children to match the sets of dots. Place a set of elements or a pictoral representation which includes both elements of the set and objects not in the set on the flannel board or on a table. Ask student to identify those elements which are members of the set by removing those which are not. Using a set of objects on a table, ask the student to construct a set equivalent to it from other objects available. Given several sets of objects on a table or on a flannel board ask the student to pair those sets that are equivalent. Each child should be given small cards with numberals 1, 2, 3, 4, and 5 written on them. The teacher shows a set of objects. She asks that all who know the number of objects in that set to hold up the card with the correct number on it.

Skill	Activity
Determining equivalence by one-to-one correspondence. (continued)	Match the rows of pegs on a peg board. Arrange a row of pegs on a board and give the child another set to arrange in exactly the same way with one peg opposite each of the ones in tne board. Do not permit him to skip holes or put more pegs in any row than there are in the model rows. Ask the student to relate a number of sounds to a number of objects. Beat a drum and ask him to put a peg in a hole each time he hears the beat, or clap your hands and ask him to make a mark on a paper each time he hears a sound. A tactual activity might be to place five pennies in front of the child and ask him to put a finger on one hand on each penny. Explain that the number of fingers is the same. Place sixth penny before him and explain that the number of pennies and fingers is not the same; there are too many pennies to correspond one-to-one.
Empty sets	Place sets of objects on a flannel board or on a table. Ask the student to form an empty set by removing all the set objects.
Grouping and regrouping	The teacher might begin by presenting small groups of dots which are widely separated on an overhead transparency. Give the child a paper on which there are similar groupings and after the figures are flashed on the screen, he circles those that are the same. Then he is asked to count the number in each group and to determine how many there are in all. Color cues may be added in the initial stage of training. For example, the group of dots on one side of the screen may be red while those on the other side are blue. Size cues also foster learning (three big dots and two small dots). These supplemental cues help the child to visualize small groups within the whole. As he improves, the dots are drawn closer together and the child now "imagines" the smaller groups within the whole. Give each student a certain number of small objects, such as bottle caps, corks, buttons, or Cuisenaire Rods. Identify the number of objects. Have the students arrange the objects into various groups, such as groups of 3 and 4, groups of 3, 3, and 1 (if using 7 objects) or any other grouping plan which would seem helpful.

Skill	Activity
Grouping and regrouping (continued)	Put a variety of objects into a box, such as chalk, pencils, erasers, books, and anything found in the classroom. Have the students group these items and perhaps regroup them as an additional step. Have the students stand in a line. Group them according to boys and girls. Regroup them according to color of the eyes, tallness and shortness, and any other way to which the group lends itself.
Sets and subsets: of natural numbers, of points.	Objects on the flannel board can be used effectively for subsets. Place many kinds of animals in a set. Have the students redistribute them into subsets. A rope on the classroom floor could be used to demonstrate set and subset points. Using large circles made of colored construction paper on the rope, talk about the various combinations that can be made. Transfer this to lines on the board or on worksheets that have been prepared. Demonstrate a set by using definite things or objects. Students in the classroom could be used, or calendar months, or objects in a desk drawer. Sets could be made by grouping Cuisenaire Rods. Demonstrate a subset by using definite things or objects. Students in the classroom might be used. Make subsets by classifying boys and girls, those with blond hair and brown, those with shoes that tie and those with slip-on shoes. The subsets that could be made would be almost endless. Allow the students to suggest subsets. Make a set of object cards showing pictures of subsets of animals, toys, and anything else with which the students are familiar. Give a card with the set pattern on one side and the corresponding numberal on the other. When the pupil holds up the card to show the set, he can read the numeral on the back. When he is showing the numeral, he can see the set pattern on the back. The cards can be used to show how subsets can be joined to make a larger set. Subsets are sets made up of all the members or some of the members of a given set. "Show me two sets that make 5." Here the teacher simply is saying that she wants to see two subsets that when (cont.)

Skill	Activity
Sets and subsets: of natural numbers, of points. (continued)	joined will form the larger set with five members. The child can display cards 4 and 1, 3 and 2, 2 and 3, or 1 and 4. This procedure readies the children for addition. Many activities should be planned in which pupils name all the subsets that make up a given set. Because all children have cards, all are involved in the activity. The next step is to ask students to display numeral cards that make 6. When you ask them to prove that 4 and 2 is the same as 6, they show sets of 4 and 2 and count objects to see that there are 6. The activity should be varied, using a large set like 8, then a small set such as 3. Students might draw sets. Drawing sets gives them a better image of each set. Have pupil show subsets of a given set by shading some of the objects to show other names for 4. Pupils like to draw objects and they enjoy shading. This is further preparation for addition. In introducing the empty set never call 0 "nothing". Teachers might call him Mr. Zero to lend him prestige. After zero has been introduced and the children are given cards bearing a 0, they can use 0 as one of the subsets when supplying many names for a member. In naming two subsets of five, one of the answers can be 5 and 0. To teach sets of related objects ask students to find pictures of related sets in a magazine or in papers. Have the children cut them out and then paste them on paper. To compare sets give the students red and blue circles. Ask them to cut the circles into smaller pieces and arrange them on paper to form 2 sets, one having more pieces than the other. When sets have been compared, pupils may paste down the paper circles. Give pupils small cards with numerals 1, 2, 3, 4, and 5 written on them. These cards are used by pupils to respond to the questions directed by the teacher. Children should learn to match the numeral card to the set that shows that many objects. The teacher should produce a set of five members and then ask the pupils how many numbers it contains. All pupils who know the answer will hold up the correct numeral card. In this way all pupils are responding individually to each question.

ORDERED PAIRS

Skill	Activity
Use of an ordered pair of numbers to indicate position of an object within a set of objects.	Arrange the desks in rows. Have the students seated in their desks. Identify each column of desks by number from left to right. Identify each row of desks by number from front to back. Have each student give the ordered pair that describes his position. Give the various ordered pairs and, for each, have the student in the position described stand. On a worksheet or on the blackboard, draw 10 rows of boxes with 10 boxes in each row. Use numbers to identify the rows and the columns. Give orally the directions such as "Write the letter T in the position described by the ordered pair 6, 8."

Skill	Activity
Concept of standard units: inch, foot, pint, quart	For students who have difficulty using a measuring device, such as a yard stick or a ruler, prepare separate pieces which are either one inch in length or one foot in length. The student can lay these pieces down on the object to be measured, count how many it required and see the combined length of them. After these have been used many times for measuring, the student can prepare his own measuring device, first which includes only inches, then half-inches. Do the same with the yard stick. Develop practice problems which involve finding the length of objects in the room. Using measuring cups, quart bottles, pint bottles, etc., let the students experience equivalent measures both with dry and liquid measure.
Concept of standard unit to include yard, gallon, dozen, ounce, pound, units of time.	Have the student make a yard stick showing only the foot markings. After he becomes efficient at using this, he could add the inch markings and the half-inch markings. Have the students work in pairs. Using a small weighing scale allow them to weigh paste jars, books, boxes of crayons, workbooks, pencil boxes, box of jacks, desk calendars and any other objects in which they show an interest. A clock face with raised numbers would be effective in teaching what appears on the face of the clock. An old clock that can be taken apart would lend itself to this activity. Progress until the student feels comfortable with telling time. A simple store setting could be used where the children played the roles of the buyer and the seller. They would sack a dozen objects, or sell a pound of an object. It would lead also to handling money. Using measuring cups, quart bottles, and pint bottles, have the students experience equivalent measures of both dry and liquid measure that are in a gallon measure. If the students have had experiences with using the number line for other math concepts, approach telling time by using a number line. Prepare the number lines with 60 divisions on them. Each represents a minute. After carrying out many activities with this, mark off groups of five and label them. Talk about the first group of five being labeled 1, the second group of 5, 2, etc. After the student is comfortable with (continued)

Skill	Activity
Concept of standard unit to include yard, gallon, dozen, ounce, pound, units of time. (continued)	the concepts on the flat number line, scotch tape it together for a circle, hence a clock face. The student should help with forming the circle. This activity will help the child in that he now sees the clock face as a number line. Use the Time Teacher, DLM. Ask the student to listen for and count the clicks as the hour hand or minute hand is moved. Ask student to discriminate, auditorily, between movement of the hour hand and movement of the minute hand. Encourage the student to get visual reinforcement of learning by following the movement of the mechanism of the Time Teacher, DLM, as seen through the clear plastic back. Have the student manually move hands of the Time Teacher, DLM. This will help him to understand clockwise and counterclockwise movement. The concept of time might be started with a discussion of the seasons and a calendar. A calendar would be helpful where the pages have been pasted together so that it shows vertically the number of months in the year. To teach parts of an hour a number line is a useful tool. Draw a number line with divisions extending from 0 to 60 and let each small division stand for 1 minute. Discuss with the pupils that there are 60 minutes in 1 hour. The midpoint of the segment from 0 to 60 is shown by a dark dot. This means that 1/2 hour is the same as 30 minutes. The segment from 0-60 can be divided into 4 congruent parts. The dot marked 15 is 1/4 of an hour, the dot marked 30 is 1/2 an hour and the dot marked 45 is 3/4 of an hour. To help them grasp this concept, illustrate with "less than" and "greater than" questions. Which is greater, 50 minutes or 1/2 of an hour? Which is less, 1/4 an hour or 35 minutes? Next use a clock with numerals for hours written inside the circle and numerals denoting minutes written outside the circle. The students should be able to see that the unit called 1 hour is made up of 60 small units. Apply this number line to the circular number line called the clock. To teach the number of ounces in a pound, use the number line marked into 16 units.

Skill	Activity
Concept of standard unit to include yard, gallon, dozen, ounce, pound, units of time. (continued)	To teach the measurement of volume, supply the student with trading stamps which he can glue on a figure, such as a rectangle. This should build the concept that volume is more than outside dimension. To get a rough measure of the volume of a rectangular box, pack it with one layer of smaller objects. Egg cartons, single-serving cereal boxes, baby-food jars, or frozen-juice cans might be used. To build the concept for finding the areas of the faces of a cube or other form, start with a cube in flat form on a worksheet. Measure the edge of one cube. Make a note of this measurement. Cut the cube out and glue it into the solid shape. Now talk about how many of the squares are contained in this solid. This will give the total surface area of the cube. This information can then be used to find the volume of the cube. For metric measurement, use meter sticks for measurement. If they are available, show filmstrips or films dealing with metric measure. Available at the Middle School Media Center is "Metric System", #265. The ESU I film library has the film "The Metric System", #00151, available. Students who experience difficulty with measurement should not be expected to convert from English to Metric measure until he is ready. Use the filmstrips available at the Middle School Media Center to illustrate the volume of figures. They are: "Volumes of Cubes, Prisms, and Cylinders," #J26 "Volumes of Pyramids, Cones and Spheres," #J27 Show the filmstrip "Areas of Solids," #J29, available at the Middle School Media Center when that area is being studied.
Concept of standard measure: unit of temperature.	For working with temperature use string thermometers to register temperatures. Move from this to actually reading temperatures on a real thermometer. Set up a display of various kinds of thermometers (for example, an oven thermometer, meat thermometer, and body thermometer) for the students to use and examine. Have the students keep a record of the temperature in the classroom at the same time each day.

Skill	Activity
Abbreviations of measurement words	Abbreviations of measurement words could be handled as we handle mastering arithmetic facts. Give the students cards which have the abbreviations made with Elmer's Glue, or yarn. This would allow him to learn from touching the abbreviations. The teacher could write the abbreviations in a sand tray in the sand. She would then hand the tray to the student and have him repeat her writing. The abbreviations could be projected on the board or wall either from a prepared filmstrip or an overhead projector. The student could trace the abbreviations either with his finger or chalk.
Reduction of measures	Using measuring cups, quart bottles and pint bottles, have the students experience reduction of measures by actually carrying out the activity. This may be done with both dry and liquid measure. Starting with a yard stick which has all of the measurements on it, use masking tape or other device to mark off the feet. Place Plain Inch Cubes or Colored Inch Cubes of the DLM on a 12" ruler or a yard stick to show how to change inches to feet and yards. Provide students with tables of measurement. It is helpful if they can memorize that there are 12 inches in 1 foot and 3 feet in 1 yard, but measurement tables should be used for other measurements in elementary grades. The Plain Inch Cubes or the Colored Inch Cubes of the DLM materials might be used to show the relationship of 1 inch to a foot and the other units of measure. Make a bulletin board on which many measuring devices are used. These might be included: measuring spoons, cups, plastic measuring pitcher, yardstick, meter stick, measuring tape, six inch rulers, quart, pint, half-pint cartons, spring scale, paper clock face, thermometer and fever thermometer. Use these items to make a stickman. Call him "Mr. Measure-man."

Skill	Activity
Identification of closed and open curves.	Paths-Represent a path on a flannel or magnetic board, and place cutouts of a school, a store, and a house along the path, thus representing a sidewalk. By selecting one of the objects as a starting place, and following the path back to the selected starting place without going back over any part of the path, the student will show that the path shows a closed curve. Remove the objects, so that just the path remains. Using just the path, have the students again show that the path is a closed curve. Put cutouts on the flannel board, some inside the path and some outside. In working with this path, have the students decide if a closed curve, or an open curve is shown. If a closed curve is represented, have the students name the objects that are inside and those outside the path. Move the fingers from one object to another. They will have to cross the path to get from an object inside to one outside. Show that they must cross the path to get from an object outside to one inside. Replace the familiar cutouts with colored disks or triangles or other objects. Identify a curve as being closed or open. Draw a complete circle and have the student tell whether it is open or closed. An example of an open curve would be a letter c. Prepare worksheets with geometric figures. Ask the student to indicate the correct answer. Using pictures of closed curves, such as a triangle, a circle, a rectangle, and a square, ask the student to give you its geometric name. As a readiness device use the cards in the Percepts box. Have the student match the cards which have identical closed and open curves. The teacher may participate in this activity with the child.
Planes	Put some dots on the floor. These might be of colored construction paper. Ask if all the points on the floor are in the same plane. Tell the students that we shall call the set of points suggested by a flat surface a plane. Transfer this concept then to any flat surface.

Skill	Activity
Identification of interior and exterior of curves	Make shapes on pegboards, using string. Place an object inside the closed curve and outside the closed curve. As a readiness device, use the cards in the Percepts box. Have the student match the cards which have identical symbols on them. Give the student pictures of closed curves, such as a circle, a square, a mushroom, a Christmas tree or various other items. Ask him to shade in the region enclosed by the curve. Give the student a group of labeled points, such as a b, c. Ask the student to draw a closed curve with the points on, inside, and outside the curve. Give the student a picture of a closed curve, such as a triangle. Have him shade in the region outside the curve of the triangle. Give the student a drawing of a closed curve which has labeled points inside, outside, and on the curve. Ask him to identify, either orally or written, which points are inside, outside, or on the closed curve.
Points	Use cards which have the line made of heavy yarn. Allow students to demonstrate points by placing thumb tacks on the line segment. Show four boats, or houses or such objects on a line. Label them A, B, C, D. Ask the student to identify the object by its label on the line. Prepare points on a line segment. Ask the student to name the points that are the closest and the two that are farthest apart. Have students loop a piece of string around any two nails on a Geo-board. Sketch some of the resulting constructions on the board. Have students come to the board to trace the path of points on one of the sketches, while others run their fingers along their paths of points. As a readiness device, use the cards in the Percepts box. Have the student match the cards which have identical symbols on them. Stress particularly the line figures.

Skill	Activity
Identify betweenness for points.	Put a rope on the floor. The rope should be about six feet long. Have 3 students stand on the rope. Ask the other students to tell which one is standing between the other two. Use a strip of paper to represent a line. The paper should be about 2" wide and 3' long. Place three objects, such as an eraser, a block, and a spool, on the paper. Ask the students to tell which object is between the other two. Then give a student another object and tell him to put it on the paper so that it is between two objects that you specify. On a flannel (or magnetic) board, use a piece of yarn to show a curve, and place three or more cutouts of objects on the path. Select three objects and have the students tell which object is between the other two. Give the student another cutout of an object and tell him to place the cutout on the path so that it is between two objects that you specify. On the chalkboard, draw several curves. Have one student show and name a point that is in the curve. Have another student show and name another point that is in the curve. A third student should show and name a point that is between the other two points. Students might also show points that are not in the curve. Use cards which have the lines made of heavy yarn. Students should show points, betweeness by placing a thumb tack on the line segment. The teacher can use a sand tray filled with sand to draw lines and points. She then hands the pan to the student and has him do the same. She could ask him to place points between, outside of and on the line. Use a "Magic Slate" to draw lines on and have students place points between other lines. As a readiness device, use the cards in the Percepts box. Have the student match the cards which have identical symbols on them.

Skill	Activity
Line segments, intersecting lines and parallel lines	Provide each student with 2 straws (or similar objects), and tell the students to think of their straws as suggesting lines. Use them to teach intersecting lines and parallel lines. Use cards, such as flashcards, with lines and points on them which have been traced with Elmer's Glue. Encourage the student to touch and feel the lines. Tell the students to pick two points on their plane (nail heads on the Geo-board or on pegboards) and use rubber bands to construct different paths of points to join the two points they selected. Ask "Which path of points is the simplest, most direct, straightest, shortest path of points? Is it a line? Does it have a beginning point and an ending point? Both a beginning and ending point? Does a line have beginning and ending points, or does it go on in both directions? Is it a piece or segment of a line? Construct as many line segments as you can with your rubber bands and Geo-boards." On the flannel board or the chalkboard represent a pair of intersecting lines, a pair of parallel lines, and two lines that look as if they will intersect. Have the students identify each pair as either parallel lines or intersecting lines. If the student needs to have this enforced with larger equipment, carry out the same activity using ropes on the classroom floor.
Polygons	Have the students represent polygons on the bulletin board, the Geo-board or a pegboard by winding yarn around thumbtacks. After the yarn has been made taut and has returned to the starting point ask questions about a polygon. Some typical ones might be: (1) How many sides? (2) Is it an open or closed curve? Construct polygons on the classroom floor with a rope. Construct polygons from pieces of drinking straws. The straws should be 2, 3, and 4 inches long. Hold the straws together with 1½" long pieces of pipe cleaners. Make polygons from sand paper.
Subsets of lines	Use cards which have the lines made of heavy yarn. Allow students to demonstrate the subsets of the lines by placing tacks where they are asked to place them and then identify the subsets.

Skill	Activity
Subsets of lines (continued)	Using a rope on the floor, have the students be the subsets of the lines. They might also place large paper discs or various objects on the rope.
Segments, rays	Use a rope to represent a line on the floor of the classroom. Place letters on this line. Name the segments. Name the end points of each segment. Use drinking straws to make segments and rays. Use heavy yarn on cards to make segment and rays.
Angles	Have the students form two-member teams, (or may be done by individuals) each team working with a Geo-board, a peg board, a bulletin board, or on the floor. Each team member is to construct a ray, with rubber bands using the same starting point. Lead them to see that an angle is a set of points on 2 rays not on the same line, but with the same starting point. Angles can be worked with as the student used drinking straws, yarn, rope and paper strips. To teach right angles, give the student a set of objects, such as a ball, a book, an eraser, a flower vase, a cup and any other which will lend itself. The student should identify those which contain a right angle or those which do not.
Triangles, parallelograms, rectangles, squares, circles	Give the students models of plane geometric figures which have been made from felt, sandpaper, or other material which has texture that can be felt. Have them touch them, trace their outlines with their fingers and identify them. Use a 6' length of rope on the classroom floor to make the geometric figures. Use students as the points around which to wind the rope. Make geometric figures on cards with heavy yarn so that the student can feel the shape as it is discussed. Using sand trays and sand, draw figures in the sand. Hand the tray to the student and have him do the same. Draw the figures being presented on a "Magic Slate". Using either the overhead projector or a filmstrip which has been prepared, project the figures on the board and have the student trace them either with his finger or chalk.

Skill	Activity
Triangles, parallelograms, rectangles, squares, circles	With self or a group, make shapes with the body. Make models of polyhedrons of construction paper. Do string designs which demonstrate how straight lines can be used to give the impression of curves. Make shape mobiles. Identify shapes within a room. Use pegboards and yarn to make shapes. As a readiness device, use the cards in the Percepts box. Have the student match the cards which have identical symbols on them. Use parquetry boards and designs. Ask the student to feel the shape. Put the pieces together to make new shapes. To teach congruent figures, give the student a set of objects such as two 12" rulers, a 12" ruler and a yard stick, two pieces of unused chalk, two paper cups and two different sized boxes. Ask the student to identify those pairs that are congruent. Begin with a puzzle in which only one figure can be fitted into a space. Multi-piece puzzles are used after the child has facility with single forms. Observe him placing the figures into the spaces and note whether he systematically scans all of the pieces. Some children will have to be shown through verbal explanation or taction how and why a piece fits or does not fit into a particular space. Working with a puzzle or formboard, ask the student to feel the sides, look for corners or lack of them, trace around them with fingers. Do the same with the formboard. Cut two-dimensional figures from cardboard, construction paper, or felt. Ask the student to insert them into the proper spaces out of which they were cut. Give the student the opportunity to trace around the figures, as well as the edge of the hole. This teaches spatial concepts.

Skill	Activity
Triangles, parallelograms, rectangles, squares, circles (continued)	Outlines of two figures are made by placing ropes on the floor. The student is asked to look at the two shapes and tell whether they are the same. If he cannot do so by looking, he is asked to walk along the edge or on top of the rope and note whether the patterns feel the same. Prepare a card game which gives practice in identifying figures. Make two sets of cards that have pictures of figures. Use the square, triangle, circle, rectangle, isosceles triangle, scalene triangle, obtuse angle triangle, acute angle triangle, quadrilateral, cylinder, pyramid, sphere, cone, prism, octagon, hexagon, pentagon. Prepare one set of cards with these figure names on them. Keep the two decks separate. After shuffling them, deal five vocabulary cards to each of the two players. The first player turns over a figure card. If he has the name of that in his hand he lays down both cards. If he cannot match he draws another card. If he can't match this one either, he places it at the bottom of the pile. When one player has used all of his cards the winner is determined by the number of matches that were made. View the films from the ESU I film library: "Circles and Points," #417 "Triangles: an Introduction," #426
Cubes, spheres, cylinders	Give the student a set of three-dimensional objects and have him name them. The objects might be a wooden block, a cylindrical crayon box, and a ball.

Skill	Activity
Base-ten system (through 999,999)	Follow the Dots Game (Grades 1-2). Place a sheet of tracing paper over a simple line drawing (a good source for this type of drawing is a coloring book or workbook). Instead of tracing the picture, put dots outlining the object in the picture. Then number the dots in sequence. Trace this pattern onto a stencil sheet and duplicate one copy for each member of your class. Students will need pencils. You could use any set of numbers. If the activity should be geared to counting by 2's, use those numbers. For more advanced grade level, hundreds or even thousands could be used. Use a number board (plywood into which ten rows of ten nails each have been driven). On cardboard discs number from 1 to 100, using a felt pen or crayons. Punch a hole in the top center of each circle. Ask the student to hang each number on a nail. When they are finished, the numbers should be in proper order to count from 1 to 100. The students can count in this way by 2's, 5's, or 10's to 100. Or ask them to count by odd numbers from 1 to 99. (Grades 1-2). Have the students give demonstrations involving actual objects (or by using boxes labeled "1000", "100", "10", and single objects). Give the student directions such as these: a. Show 1 thousand 13 hundreds. Then regroup the objects and give the standard name for the number. (If the students are using boxes, they should first show a box labeled "1000" and either 13 boxes, each labeled "100" or 13 bundles of 100 sticks. Then they should show 10 of the 13 groups of 100 as 1000, so that there are 2 thousands 3 hundreds. They should identify the number as 23000.) On cards write the numbers from 1-10 (or any other series of numbers) with Elmer's Glue. After the student has traced the numbers with his finger have him tell you first then write the word either on the board or on paper. The order could be reversed where the word could be on the card and the student would tell you what the number is. The numbers might be made on the classroom floor with a length of rope (such as 6, 9, 3, etc.) Have the student first walk on the rope then go over it with his hands, then transfer the number to the chalkboard.

Skill	Activity
Base-ten system (through 999,999) (continued)	Introduce formal numbers from 1 to 10 associated with objects, such as 1 to 10 horses. Have student feel and group 1 to 10 blocks, first in order, and then by random request. Give seatwork with matching problems. Require student to match pictures of 6 horses with the correct number among three possible choices, such as 2-8-6. Vary pictures to include mixed groups and extend matching exercises.
Place Value	Separate the flannel board into two vertical sections with a piece of string. Label the right section "ones" and the left section "tens". Provide felt strips 1/2" by 2" to be used for tally marks. Describe a number by indicating a certain number of tens and a certain number of ones, for example, 4 tens 5 ones. Then have the student make the appropriate number of tally marks in the tens' space and in the ones' space. Also have them write the correct numeral in the tens' space and in the ones' space. Have the student give, orally, the name for the number. This same activity could be carried out on a duplicated worksheet after having done it with objects as tally markers. Make a bundle of 10 sticks. Put a tally mark in the tens' space. Be certain that he knows what the tally mark stands for. Have him make another bundle of 10 and put another tally mark in the tens' space. Using single sticks, have him put tally marks in the ones space at your direction. He then can count tally marks and come up with your request number. Cut thirty squares of tagboard. With felt pen or crayon, number each card from zero to nine, making three cards which show each number. Then write "ones" under each number in one set, "ten" under each number in the second set. Give the 30 cards to the students in the group. After they have sorted them into the three categories, have another student give a three digit number. The students who hold the three cards that make that number put them together in the proper order to form that number. This could be done at a table or in front of the class.

Skill	Activity
Place Value (continued)	Money is meaningful to children in teaching place value. Pennies represent the ones, and ten of them could be traded for a dime. The dime represents the unit ten. The teacher might write the number 34 on the board and represent it with pennies. Then she might represent the same number with 3 dimes and 4 pennies. Teachers who use Cuisenaire rods can show two digit numbers by letting the white rods represent the ones and the orange rods represent tens. Pupils discover that the orange rod is the same length as 10 white rods. Counting in sequence is another activity in place value for primary grades. A floor counting frame with 100 beads can be used to start the counting by 5's. The frame has 10 wires and 10 large beads on each wire. Pupils can slide five beads at a time and count: 5, 10, 15, 20, 25, 30, etc. The same bead frame can be used to count by 10's to 100. In introducing hundreds use plastic discs. The white discs represent ones and red discs represent tens. A set of 10 red discs can be traded for a blue disc. The blue disc represents the unit, a hundred.
Grouping and regrouping	Using material objects in the room, have pupil make varied groupings. Objects which might be effective are Cuisenaire Rods, tongue depressor sticks, buttons, pencils, books, and generally anything found in a classroom. The above activity can be extended to numbers to 10, using coin counting and groupings. Gradually extend to 100, first using rote counting and simple grouping. Group coins by fives and tens and teach sequential counting. Give daily practice by counting students, lunches, pencils, room, etc., extending the counting program to basic addition exercises. For regrouping, have the students work with actual objects. Have some objects in bundles of 10. Then give students directions such as these: a. Show 12 tens. Then regroup the objects and give the standard name. b. Show 52 ones. Regroup the objects and give the standard name.

Skill	Activity
Grouping and Regrouping (continued)	c. Show 240 objects (2 Hundreds 4 tens). Then show the sticks as groups of ten. How many tens are there? d. For subtraction ask students to regroup in this manner: Show 58 sticks. Now regroup these sticks so that there are only 4 bundles of 10. How many single objects will there be? e. Provide worksheets on which you have drawn several sets of tally spaces, each space labeled appropriately. Work with small groups of students at the table. While each student works with the tally spaces on the worksheet, you can use the tally spaces on a chalkboard. Be sure to have the students manipulate the objects.
Reading and writing numerals for fractions through eighths.	Cuisenaire Rods would be effective to illustrate this skill. Take a four rod and see how many 1 rods it takes to build the same length. The student will see that the rod has been broken into four equal pieces. Talk about what we would call each piece (one-fourth). Use a disk on the flannelboard. Show the disk divided into three equal parts. Discover what name would be given to each part. After the student is comfortable with this concept then have him work with how these objects and their parts can be represented with numbers.
Roman Numerals	Provide cards for the students which have Roman Numerals which have been written with Elmer's Glue. Have him feel the numerals. Use sand trays and sand. The teacher will write the Roman Numeral first with the student observing. She levels the sand and hands the tray to the student. He repeats what she has written in the sand. Write Roman Numerals on Magic Slates. Provide cards for the students which have the Roman Numerals made of heavy yarn. He should feel the numeral.

COMPUTATION

Skill	Activity
Basic Facts	Prior to formal instruction in addition, make sure the student has adequate number concepts with knowledge of sets of ten; use number and arithmetic readiness programs such as Cuisenaire Rods. Using objects, introduce simple additive combinations to sum five. Have student rearrange combinations and draw pictures with numbers of blocks indicated. Transfer to penny problems extending to sum ten. Instruct student in simple addition formulas. Have him make his own, using the Abacus, clothespins, buttons, candy, pegboard aids or other devices. Work with symbols. These could be made on cards with Elmer's Glue, yarn or other materials lending to the tactile and visual approach. Extend concepts to adding cups, teaspoons, tablespoons. Present oral problems. Use toys and games, such as toy money games, and life problem situations. The number line will lend itself to visual concepts.

APPLICATIONS

Skill	Activity
Concept of money	Give the student sets of mixed coins and paper money. Ask him to show you an amount with that money. The teacher can reverse this process by laying coins on a table and have the student tell how much it represents.
Pennies, Nickles, Dimes and Quarters	Play store, using items for sale which are interesting to the student - Hot Wheels, records, clothes, candy, special games. Students can cut out or draw pictures of the items they want in their store, paste them on cardboard squares, mark the price on the back of the cardboard, and display the items in their store area. Different students can take turns as store owner. Some of them may even want to keep a business ledger by tracking the total amount of money they take in during all of their turns as store owner.

Skill	Activity
Pennies, Nickles, Dimes and Quarters (continued)	If playing store is not challenging enough, try a "Shopping Trip" instead. To prepare for this, you'll need a large supply of grocery store ads cut out of newspapers. You can divide the class into teams and give each team a list of items to purchase, including on each shopping list the amount of money the team has to spend. Everyone can help post the various ads in different parts of the room, and then take the lists and "go shopping." Team members may discuss their purchases with one another, but keep records separately so they can check together later to avoid errors. A "shopping trip" involves many basic mathematical operations. If an ad reads "2 cans for 26¢" and only one can is on the list, the children must divide by two. If something costs 32¢ per box and the list reads "4 boxes," the children would multiply. Interesting discussions will arise from advertisements reading "3 for $1.00." When the student completes his list, he should break down the change he will receive into the proper coins, and compare his results with other team members. Check each team report for accuracy. Inform the teams of their progress in relation to the last shopping trip. By using clothing and toy ads from newspapers or by cutting up old catalogs to use for items sold in the store, the teacher can vary the "shopping trip" activity. Some students might try filling out catalog order forms as an individual activity, picking five favorite items and then figuring the total price including tax. Most students enjoy choosing things to eat. In the following game they are to "Pick a Lunch" from a menu and find the total cost. You can expand the games to have them tell what coins they should get in change from a $1.00 bill or what amount more in coins is needed if the cost is over a dollar.

MENU

Sandwiches		Beverages	
Cheese	25	Milk	12
Ham	30	Milk Shake	25
Peanut Butter	20	Root Beer	10,25
Hamburger	30	Orange	10 25
Hot Dog	20	Coffee	10
Tuna	25	Tea	10
Beef	35		
Soup		**Dessert**	
Chili	30	Ice Cream	15
Vegetable	25	Cake	20
Beef	20	Pie	20

MUSIC

Many sources of materials are used for music in the Wayne-Carroll Schools. The basic text used is Making Music Your Own, published by Silver Burdett Company.

A song is chosen for its qualities that move children to become involved in musical activities. These activities lead to learning the words and melody with no special effort. Students are taught to listen. Through the activities, using the arms, feet, and body, concepts of rhythm, melody, tempo and dynamics are learned.

Rhythm instruments (percussion), tuned bells, and the autoharp are instruments used to demonstrate instrumental music.

The major areas of study are rhythm, melody, form, expressive qualities and harmony.

The Silver Burdett text provides records to accompany each book. For the SLD student, the records provide for the auditory pathway to learning. If he is unable to read the words of the song, he gets them by listening to them first. If records are not available, the teacher can provide the same type of experience for the student by preparing tapes on which the student hears the accompaniment and the lyrics.

Use films occasionally.

When presenting RHYTHM the following activities might be used:

1. Clap hands to the tick of a clock or metronome. Clap to the beat of the song.
2. Walk, march, skip, gallop, sway, or bounce to the rhythm of the music.
3. Use rhythm instruments to beat the time or show the mood of the music.
4. Bounce rubber balls and catch them in the rhythm of the music.
5. To illustrate 3/4 time, tap knee on strong first beat and clap hands or snap fingers on the other two beats.

When teaching MELODY use the following activities:

1. Move the hands in the air with the rise and fall of the notes in the melody.
2. Sing the tonal patterns or play them "by ear" on the tuned bells.
3. Teacher plays intervals on the bells. Sing the interval back to the teacher.

When teaching FORM use the following activities:

1. Various games can be used to reinforce "music span." Students might pass a ball around the circle until the song is finished. The student holding the ball when the song is finished is out of the game.
2. Choose a series of activities that are to be performed during the song. An example would be to march during the playing of part A, then changing to snapping the fingers during part B, then back to marching when the music returns to theme A.

When teaching EXPRESSIVE QUALITIES use the following activities:

1. Provide opportunities for children to interpret the mood of the music with their voices and body actions.
2. Listen to records to discover how various instruments are used to produce expressive qualities.
3. Allow students to choose appropriate instruments to be used for a background for music and poetry.
4. Give the student an opportunity to analyze his own voice by making a tape of it, listening to it, then comparing it with other voices in the class.
5. After listening to songs in different tempos, discuss how tempo effects the mood.

When teaching HARMONY use the following activities:

1. To demonstrate simple harmonies, sing simple rounds.
2. Listen to recordings which illustrate harmonies.
3. Play simple chord accompaniments on an autoharp. Introduce chord structure.

Music is a way for all students to express joy, to release tensions, and to become emotionally involved. It should be used many times a day in any part of the curriculum where it can be used. It is a therapeutic measure, particularly for boys and girls with learning disabilities.

SCIENCE

> The pupil is not to be told but led to see . . . Whatever gains, whatever thought connections he works out, must be gained with the consciousness that he, the pupil, is the active agent--that he is, in a sense at least, the discoverer.
>
> William C. Bagley

Wayne-Carroll Elementary School and Middle School use the American Association for the Advancement of Science program. The discovery approach is used. The AAAS program nearly eliminates the need for Curriculum Modification for children with learning disabilities. The six pathways to learning and appreciation (gustotory, olfactory, tactile, kinesthetic, auditory, and visual) are a part of the program.

Generally, the following suggestions will assist a student in functioning in any science class, regardless of the program or approach used:

1. Textbook materials should be taped for those students who cannot read well enough to make it meaningful.
2. Students would benefit by working in small groups while carrying out the discovery activities.
3. Provide manipulative equipment for student use.
4. Some students have memory problems, both short and long term, which will prevent them from memorizing. Don't expect them to memorize.
5. Use a study guide prepared by the teacher. It will help to organize the material, aid memory, introduce vocabulary, and be helpful in reviewing.
6. When a new word is found, illustrate it with a drawing. Display the definition and the drawing on a classroom bulletin board so that the entire class will benefit.
7. Take advantage of opportunities for science field trips. Visit the planetarium, the high school science laboratory, and go to the out-of-doors for nature hikes.
8. A large number of films and filmstrips are available in the science area. Use them whenever they can reenforce science concepts. Transparencies should also be used.
9. Use displays of pictures and drawings to illustrate science concepts.
10. Curriculum Modification techniques from the mathematics and social science areas should be applied here for there is a relationship between these areas.
11. When possible, use a common name for scientific objects rather than scientific names.
12. Encourage each student to carry out a science project for himself, such as when seed germination is studied, plant seeds and observe them grow.

Any science teacher in grades K-6 would benefit from studying the Curriculum Guide entitled Ideas and Activities for Elementary School Science, (Experimental Edition) issued by the State of Nebraska Department of Education, Division of Instructional Services.

Periodicals that would be helpful to elementary science teachers include:

School Science and Mathematics
Donald Winslow
Business Manager
P.O. Box 246
Bloomington, Indiana 47401

Science and Children
National Science Teachers Association
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

Science Education
Science Education, Inc.
C. M. Pruitt
University of Tampa
Tampa, Florida 33606

Reference materials that are helpful:

Blackwood, Paul E. Science Teaching in the Elementary Schools: A Survey of Practices. Washington, D.C.: U. S. Printing Office, 1965.

Blough, Glenn O., and Schwarz, Julius. Elementary School Science and How to Teach It. New York: Holt, Rinehart and Winston, 1964.

Hone, Elizabeth, et al. Teaching Elementary Science: A Sourcebook for Elementary Science. New York: Harcourt, Brace and World, 1962.

Kuslan, Louis I., and Stone, Harris A. Teaching Children Science: An Inquiry Approach. Belmont, California: Wadsworth Publishing Co., 1968.

Piltz, Albert, and Sund, Robert. Creative Teaching of Science in the Elementary School. Boston: Allyn and Bacon, 1968.

Platts, Mary E., Sr. Rose Marguerite, s.g.c., Esther Shumaker. Probe: Suggested Activities to Motivate the Teaching of Science. Stevensville, Michigan: Educational Service, Inc., 1960.

Renner, John W., and Ragan, W. B. Teaching Science in the Elementary School. New York: Harper and Row, 1968.

Romey, William D. Inquiry Techniques for Teaching Science. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

Subarsky, Zachariah, Klaits, B., Landin, E., and Reed, E. Living Things in Field and Classroom. Minnemast, University of Minnesota, 1967.

Tannenbaum, Harold E., Stillman, Nathan, and Piltz, Alfred. Science Education for Elementary School Teachers. Boston: Allyn and Bacon, 1965.

A Model Science Unit Used By High School Students*

GRADE LADDER

NAME _____

HOUR _____

A	B	C	D
A-	B-	C-	D-
B+	C+	D+	F

***Begin here!!!

Here's a copy of your grade ladder. Your teacher also has a copy. Everyone will begin in the lower right-hand corner of the page. Check off one space for each point earned on an activity. Proceed upward through the grades. Identify the activity for which you're recording points and keep your tally current as each activity is completed.

Two Points will be given whenever a volunteer acts as an oral reader or a team recorder.

Extra points will be awarded whenever tape recordings of reading assignments are listen to by individual students.

Exams will not exceed 35% of the total points of the grade ladder.

To get an A+ you must show that you are a socially responsible person (help someone els organize who can't.)

You will receive the full grade to which you are entitled whenever your total is within the ten point margin of any letter designation.

Final grades will be determined at the end of the unit.

*Prepared by a Science teacher in Minnesota

GROWTH REQUIREMENTS OF PLANTS

Choice Activities

Note - Numbers 1 - 6 below are individual activities; only one person will be given credit for any work done on those 6 activities. Numbers 7 - 14 are team activities for which 2 - 4 people may receive credit.

The number of points in parentheses is the maximum available to each individual upon completion of that activity. The maximum number of points will be awarded whenever the task is finished in a thorough and conscientious manner.

Be sure to include your name, class hour, team number, and the activity number on any papers handed in for credit.

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1. Bring to class any recent magazine articles that you can find on the subject of factors that either encourage or inhibit plant growth. (5 points each)

2. Gather samples of non-flowering plants (algae, fungi, mosses, ferns, conifers), identify the group to which they belong, and bring them to class for others to see. You may receive credit for any not already seen in class. (5 points each)

3. Any of the following films may be checked out from the resource center along with a film projector and viewed:
   a) "Roots and Their Functions" (5 points)
   b) "Leaves - Chemical Factories" (5 points)
   c) "Plant Traps" (5 points)
   d) "Photosynthesis: the Chemistry of Food Making" (10 points)
   e) "Plant Motions" (5 points)

4. Any of the following may be checked out in class and read or listened to on tape:
   a) "The Cell", AEP Unit Book (15 points)
   b) "Development of Cell Theory and the Nature of Cells," Minneapolis Tribune Newspaper, Nov. 21, 1966 (10 points)
   c) "The Functional Basis of Life," Modern Biology, p. 31-39 (15 points)
   d) "The Seed Plants," Modern Biology, p. 138-145 (10 points)
   e) "Seed Plants," Exploring Biology, p. 141-150 (10 points)

   The points in parentheses will be awarded as the study sheet accompanying the assignment is completed. Study sheets may be obtained from your teacher.

5. Write a few sentences explaining the derivation of the words "cell", "organ," "growth," "respiration," and "mitosis." (5 points)

Choice Activities (Continued)

6. Make a list of words, other than microscope, using the root "micro-" which comes from the Greek word mikros meaning small. Following each word, give its definition. (1½ point for each complete word and definition - maximum 15 points)

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7. Compose a display for the bulletin board on any topic studied within this unit. It might be for instructional purposes on the subject of a life process (photosynthesis respiration, cell division) or it could be primarily illustrative using diagrams, drawings, or pictures of the parts of the cell, organs of the flowering plant, types of non-flowering plants, etc. (Credit for this activity will vary depending on the effort and creativity involved in making the display. (15-30 points)

8. Design and perform a class demonstration to illustrate any function of any organ of a flowering plant. As an example, you might want to find a way to show the class that some stems, such as a potato, are food storage organs; or you might decide to prove to your fellow classmates that roots really absorb water for a plant. (25 points)

9. This exercise will provide you with further practice in the use of the microscope and its parts. You may obtain the materials you need from your teacher and begin any time after the completion of Class Activity #5. (10 points)

10. Locate and read a magazine article or pamphlet on the electron microscope. Write a report or give one orally to the class on how the microscope functions, what it is used for, and/or any recent discoveries made through its use. (15-30 points)

11. Make a crossword puzzle on any topic in this unit. For example, a crossword puzzle might be made using the names of parts of the cell and their functions, names and uses of parts of the microscope, plant growth requirements, etc. (20-30 points)

12. Controversies occasionally arise over the use of chemical nutrients or fertilizers by farmers. Why do farmers use such chemicals and why do environmentalists object to their use? Give an oral report or write one on this subject. (20 points)

13. Write a report or give one orally on the uses man makes of plant products. (20 points)

Choice Activities (Continued)

14. One end product of the life process called respiration is energy. Reading #1 oversimplified the processes involved in the use and production of this energy by living things. If any of you are interested in chemistry and would like to know more about what happens in this life activity, you may write a report or give one orally on this topic. Aside from the topic of "respiration," you might find information listed under such headings as, "ATP," "Adenosine Triphosphate," and "Kreb's Cycle."
(20 points)

Name_____

Hour_____

GROWTH REQUIREMENTS OF PLANTS

Choice Activity #4

Study Sheet - Answer only those questions pertaining to the reading assignment you completed.

a. "The Cell," AEP Unit Book

1) Explain how prepared slides of cells are made.

2) What is "pinocytosis"?

3) In what organelle or cell part does respiration occur? Why does it happen there and not elsewhere in the cell?

b. "Development of Cell Theory and the Nature of Cells," Minneapolis Tribune Newspaper (reprint)

1) What is the "Cell Theory"?

2) What scientists composed the "Cell Theory"?

3) What are some similarities among plant and animal cells?

4) What are some differences between typical plant and animal cells?

c. "The Functional Basis of Life," Modern Biology, p. 31-39.

Name eight basic activities that go on in every living thing and describe each in a sentence or two.

Complete your answers on the back of this page if you don't have room on the front.

Note: Incomplete. For remainder see your principal.

Name_____

Hour_____

GROWTH REQUIREMENTS OF PLANTS

Choice Activity #4

d. "The Seed Plants," Modern Biology, p. 138 - 145.

1) List several ways in which gymnosperms and angiosperms differ.

2) What is a tissue?

3) How do herbaceous and woody plants differ?

4) Define and give two examples of each of the following: annuals, biennials, perennials.

e. "Seed Plants," Exploring Biology, p. 141-150

1) What are several features you can use to identify and seed plant?

2) How are monocots and dicots similar?

3) How are monocots and dicots different?

4) List 5 ways in which seed plants are important to man.

Name _____

Hour _____

Team # _____

GROWTH REQUIREMENTS OF PLANTS

Lab Quiz - Parts of the Cell and Their Functions

Everyone must score 70% or better on this quiz. No member of a team shall receive his true score until all members of the team have met or surpassed the minimum.

Proceed from one microscope to another, viewing the cells that are mounted on the glass slides. You must identify the names and functions of the parts of the cells located at the tip of the pointer.

Choose the names of the parts of the cell from Column 1. Choose the proper functions for those same parts from Column 2.

Names	Column 1
1. _____	A. cell wall
2. _____	B. chloroplast
3. _____	C. chromosome
4. _____	D. cytoplasm
5. _____	E. nuclear membrane
	F. vacuole

Functions of the 5 parts above	Column 2
1. _____	A. determines the physical appearance of the plant cell
2. _____	B. centrols the flow of liquids from the nucleus
3. _____	C. gives strength and shape to the cell
4. _____	D. stores food for the cell
5. _____	E. sugar is made here
6. _____	F. this is another name for "cell sap"

Lab Quiz - Microscope

6. In what direction would you move the glass slide to move the object that the pointer is on so that it is at the bottom of the field? Circle the correct answer

   a. toward your left
   b. upward, away from you
   c. toward your right
   d. downward, toward you

7. Circle the correct answer.
   The name of the numbered part of the microscope is:

   a. base
   b. stage clips
   c. electric light
   d. iris diaphragm
   e. revolving nosepiece

Part B. Bring into focus the threads mounted on the glass slide under the microscope near your teacher. If a part of the microscope is out of place, fix it. and then proceed with your task. Tell the teacher which colored thread appears to be on top of the slide.

3 points will be awarded for the completion of Part B.

Name_____

Hour_____

Team #_____

GROWTH REQUIREMENTS OF PLANTS

Lab Quiz - Microscope

Everyone must score 70% or better on this quiz. No member of a team shall receive his true score until all members of the team have reached the minimum or surpassed it.

Part A. Read the questions below and answer them by looking into or at the microscope.

Each numbered question refers to the same numbered microscope.

Wait at your station until the person to your right has finished with his question, then move to the right and answer the next question.

Circle the number of the question you are beginning with.

Each correct answer is worth 1 point.

1. Circle the correct answer.
   The name of this part of the microscope is:
   a. revolving nosepiece
   b. eyepiece
   c. stage
   d. high power objective
   e. low power objective

2. In what direction would you move the slide to move the object that the pointer is on over to the left side of the field? Circle the correct answer.
   a. toward your left
   b. upward, away from you
   c. toward your right
   d. downward, toward you

3. Examine the microscope. What is wrong with it? _____

_____

4. Circle the correct answer.
   The name of this part of the microscope is:
   a. low power objective
   b. coarse adjustment knob
   c. fine adjustment knob
   d. iris diaphragm
   e. arm

5. Examine the microscope. What is wrong with it? _____

_____

Name _____

Hour _____

Team # _____

GROWTH REQUIREMENTS OF PLANTS

Take-Home Quiz

Discuss these questions with members of your team, family, or friends. Write a few sentences in response to each and hand your papers in tomorrow. Remember to support with reasons any answers that you give.

A friend has just returned from a December trip to the tropics. While there he purchased 10 seeds from a beautiful orange colored orchid native to the dense, steaming jungle and transported them home as a gift to you. You've decided to grow the seeds in hopes of producing a plant with flowers in time for Mothers' Day.

---

1. Could you predict anything about the growth requirements of the orchid mentioned above?

   If so, what predictions could you make?

2. In what practical ways might you determine the validity or soundness of your predictions?

3. Assuming you've already planted the seeds, how will you judge the accuracy of the predictions that you made in #1?

(10 points)

Name _____

Hour _____

Team # _____

GROWTH REQUIREMENTS OF PLANTS

Choice Activity #9

In this activity you will need 2 glass slides, 2 plastic coverslips, 1 small piece of paper, 1 pen, 1 pencil, 1 medicine dropper, 3 different colored threads, and 1 microscope. Obtain these materials from your teacher.

10 points will be awarded for the completion of this activity.

I. Draw a small "X" in pencil on a tiny piece of paper. Dry mount this and examine it under the microscope, first with low power and then with high power. Sketch what you see under the low power and sketch what you see under high power in the space below.

Low power "X" High Power "X"

Do the same thing again, only use a ball point pen instead of a pencil. Keep the slide of the pencil "X". Examine both very carefully. It is not necessary to sketch the pen specimen.

How does the pen "X" differ from the pencil "X"? (Look carefully!)

By examining these two slides, could you explain why a pencil mark is erasable?

Could you explain why most pen marks are not erasable?

II. On a clean slide, put a drop or two of water. Take three small colored threads and put them in the drop of water on your slide. Do this in such a manner so that the three threads cross each other near their centers. Put a coverslip on the slide (this is called a "wet mount") and examine it under low power. Sketch and label what you see.

Under high power try to determine which thread is closer to the coverslip. Which one is on top? Which is in the middle? Which is on the bottom? Record your data here.

SOCIAL STUDIES

Preparing individuals to function effectively in a democratic society is the major purpose of the social studies. There are many opportunities during the school day to develop the skills for democratic living.

Students who are handicapped by a language disability in the language arts classes are plagued by the same handicaps in other curriculum areas. The student who would normally fail because of the language disabilities can achieve through curriculum modification. What problems do we see in the social studies classrooms and how do we skirt them?
A very brief list would include:

1. Inability to read materials required--provide the student with opportunities to listen to the same materials through tape recordings, records, or films. Administer tests orally.

2. Deficient memory--prepare a study guide which will act as an outline. It should highlight important points. New vocabulary should be introduced. Activities suitable for the student's skill should be listed. This outline will serve as a review device and be an aid to memory.

3. Inability to restructure a situation or problem in terms that are familiar to him--relate the activities to his own experiences or to other concepts that have been taught earlier.

4. Distractibility--seat the student as close to the teacher as possible so that movement and noises are not between them.

5. Short attention span--spend as much time as you can going over important concepts on a one-to-one basis, giving him the benefit of a second time through. Encourage him to ask questions and question him on important points.

6. Feedback problems--handwriting and spelling problems can often prevent the student from giving back what he really knows. Let him give oral answers to test questions to the teacher or record them on tape. The student may be able to write successfully if he is given ample time. Don't hurry him. Allow an extra amount of time to finish an assignment. He may be hesitant in speaking. Again, give him more time in which to reply. Do not let him sense impatience.

7. Give him concrete experiences first when teaching a concept. A tactual globe or topographical relief map are examples of helpful materials. He may need to lock in learning through experiencing auditorily, tactually, or visually. Progress to semiconcrete, then semiabstract, and finally to the abstract.

8. When the student finds a word that he doesn't know, he should write it on a piece of drawing paper and be helped to find a definition in the dictionary. This should be written on the paper and the definition should be illustrated. These should be put on a bulletin board for the entire class to see. When the board gets full, take the oldest ones down and put newer ones up. It will change each day.

The multitext approach is used in Wayne-Carroll Schools. Grades 1-4 use SRA as a major text. Students in grades 5 and 6 use the Heath Series. Inquiry and problem solving are the approaches used.

Grade 1 studies the topic "Families at Work."
Grade 2 studies "The Neighborhood."
Grade 3 studies "The City."
Grade 4 spends one semester on the study of "Nebraska." The second semester they work with social science units on values, map skills, and selected countries.
Grade 5 studies "America, from Colonial Days to the Present."
Grade 6 studies "Canada" and "Our Southern Neighbors in South America."

SOCIAL STUDIES

Grade 1 - FAMILIES AT WORK

Topic	Suggested Activities
Getting to Know the Family	Make drawings of the student's close families. All relatives who live at their house should be included. If a student is unable to draw, he might prepare a poster using pictures cut from a magazine. Make drawings of the houses in which students live. A display of pictures of other kinds of homes, such as an Indian tepee, would stimulate conversation. To teach the importance of good manners at home and at school, role-play situations such as the following: thank you, excuse me, I'm sorry, please, you're welcome, and how are you. Role-play situations that sometimes are problems in the home. Decide how they might be handled so that they aren't problems. Include: a. where does a family get the money needed? b. who works at home. c. who decides what will be done with the family money. d. sharing toys with brothers and sisters. Prepare a display of model cars in the classroom. Talk about the changes in cars through the years. Discuss why people prefer the newer cars instead of an old one, such as a Model T.
Families Are Alike	After defining the difference between a producer and a consumer, either make drawings or cut pictures from magazines which illustrate the difference. Play a game which will give practice in identifying producers and consumers. The teacher describes one or the other, such as: "I'm thinking of a person who is eating a hot dog. Is he a consumer or a producer?" The students respond by rapping on their desks if a consumer was described or claps his hands if a producer was described. Play charades in which the student dramatizes producers and consumers. Examples of professions that might be included would be a mother baking a cake, a student using a pencil, a tailor sewing clothing. Play a game in which the teacher describes different kinds of producers, such as a dairy farmer. The students guess what he produces. To demonstrate products sometimes are used once and sometimes more, play a game where products are displayed, such as toothpaste, food, a shoe, an automobile (toy model), a book, perfume. Demonstrate that some products are used quickly and some slowly by displaying the items to be discussed. Include such things as a paper sack, an ice cream cone, toothpaste, a dress, a pencil.

Topic	Suggested Activities Grade 1
Families are Different	Compare homes that we live in by making a model of an igloo and one of a tepee. A quick igloo can be made of a half ball of styrofoam. Stick cotton balls to it. Mark a door on it and color with a felt marker. For a tepee, cover a piece of cardboard that has been folded with burlap or other tent-type fabric. Talk about the differences between these homes and the ones the students live in. To understand how different people get food to eat, role-play. Portray an Eskimo hunter, a Bushman food gatherer, or any others that would be much different than the student's home. View the film, "Work Around the World," #511, available at ESU I film library. View following films available at Nebr. Public Library Commission: "A Boy of India: Rama & His Elephant" "A Boy of Mexico: Juan and His Donkey" "A Boy of the Navajos"
How Do Families Produce?	Prepare a classroom display of drawings showing what the mother, the father, and the students produce at home. Magazine pictures might also be used. Teach the differences in producing goods and producing services by using pictures the teacher has collected. Discuss what the people are doing in the pictures, then determine whether they are producing goods or services. Play a game in which the teacher describes a father's occupation. If he produces goods, the students clap their hands. If he produces services, they stand by their desks. Play a singing game using the tune "Farmer in the Dell." A leader sings verses that describe work that fathers, mothers, and children do at home. The leader might sing, "The mother bakes the bread." The rest of the students sing "We all bake the bread," as they act out this activity. Make drawings of people who probably would not be able to produce anything. They should explain why they are not producers. Each student should make a drawing of himself doing something at home that is helpful. He should indicate about how many times a week he does this activity. View the films availabe at ESU I: "People Who Work in the Community," #506. "People Who Work in Factories," #507. "People Who Work in Offices," #521. View the filmstrip and listen to the tape produced by Eyegate which is available at El. School Media Center, "Families Work Together," #K 301.42, 48.

Topic	Suggested Activities Grade 1
Dividing the Work	Prepare a display of items that we use but are not produced in our area. Those that might be included are pineapple, bananas, coffee, coconut, spices, and others. Discuss that if someone were not sending these things to us we would have to do without them. Prepare a chart for a bulletin board which lists the various types of help needed in the classroom, such as watering the plants. Place the helper's name by the task. Discuss why all the children cannot be responsible for this job at the same time. To demonstrate the division of labor, bake cookies in the classroom. Divide the children into two groups. In one group, the students will each do one job, such as roll the dough. Another will use the cookie cutter. In the other group, have each student be responsible for each of the jobs. The students should understand as a result that division of labor is the efficient way to work.
Tools and Machines	Prepare a simple display of tools that are used around homes. Pictures could also be used. Discuss what differences we would see if we didn't have these tools. View any of the following films, available at the ESU I film library: "How Levers Help Us" #488 "How Ramps Help Us" #489 "How Wedges Help Us" #490 Prepare a display of tools in which the very simple tools were used, such as the levers in pliers, the pulleys used in draw drapes, and wheels as they are used in egg beaters.
Families Sometimes Work During Their Free Time	Prepare a display of pictures which illustrate the many things that can be done with free time. Talk about the difficulty of choosing. Role-play activities that are different ways that children can spend their free time. Some of the activities are a service to the family, and others are to earn money to help the family. Included might be mowing the lawn, delivering papers, running errands.
Families Sometimes Play in Their Free Time	Invite various people to come into the classroom to tell about ways that one can spend free time. Invite the PE teachers to talk about physical activities, the music teacher to tell about recreation involving music and the librarian to explain how books are a source of recreation. Make drawings of activities that the students enjoy doing during their free time.

Topic	Suggested Activities Grade 1
	Role-play or use puppets to demonstrate things that students enjoy doing during their free time. Prepare a classroom display of items that students enjoy using during their free time.
Wishes, Wishes, Wishes	Prepare a wish book for the classroom, showing something that every student would wish for. Use drawings or magazine pictures. Help him to understand what it would involve if his wish were to come true.
How Choices Are Made	To teach the concept that sometimes the things we wish for are not good for us, role-play situations such as eating all dessert and no vegetables, playing ball in the street, driving a car before we have a license and other appropriate situations. Discuss what consequences are in these situations. View the film, "Carpenters' Three Wishes," #478, available at the ESU I film library.
Long, Long Ago	Discuss what things are in our homes and what things we would not have if we lived during the pioneer times. Consider what tools were needed to produce all of the things a family required. Make drawings of the items that were not available but had to be produced at home. Learn to sing some of the songs that pioneers sang. "Turkey in the Straw," "Pop Goes the Weasel," and "Froggie Would A-Courting Go," are examples of what might be used. To demonstrate how different communication was in pioneer day, play the game "Grapevine." Give a whispered message to the first child and have him pass it to the next person. The message will probably be incorrect by the time it reaches the last person. Discuss why oral communication was not always easy for the pioneers. View any of the following films from Nebr. Library Commission: "Boy of a Frontier Fort" "Boy of the Seminoles" View any of the following films available at the ESU I film library: "Pioneer Living: The Home" #518 "Pioneer Living: Home Crafts" #519 "Pioneer Living: The Village" #520
As We Grow Up	Role-play using good manners. Include covering the mouth with your hand when you sneeze or cough, use your handkerchief, sit quietly, saying pardon me, listen when others talk, eat slowly, say please and thank you, stop at red light, cross the street at the corners, do not litter, and respect the possessions of others.

Topic	Suggested Activities Grade 1
	View the filmstrips and listen to the records in the Kindle, "Who Am I?" series, produced by Scholastic. Include "The Joy of Being You," "Nothing is Something to Do," "People Packages," "All Kinds of Feelings," and "Do You Believe in Wishes?" View the films, "Values--Playing Fair," #00264, available at the ESU I Film library.
Specialists at Work	Use pantomine to demonstrate what the students' fathers do at work. Other students try to guess the profession. Using pictures, discuss how many workers are needed to produce the item in the picture. A house would be an example. Play the game in which the teacher describes the work of a father and the students determine whether that work is producing goods or service. For those students who need some activity, provide it by having them stand by their desks if the work produces goods, sit down if it is a service. Sing songs that tell about work that fathers do. View the film, "Economics -- Workers Who Build Houses," #00293.
Transportation is Needed	Prepare a display of posters which are appropriate for first graders showing types of transportation. Sources of these are the American Petroleum Institute, and the American Trucking Association, Inc., American Transit Ass'n., Automobile Manufacturers Ass'n., and the Ass'n. of American Railroads. Make a display of toys which are examples of modes of transportation. Prepare drawings for a display which show the ways that goods and services are delivered to our houses. Some that might be included are milk trucks, bike, oil trucks, trash pickup truck. View the films available at the ESU I film library: "Moving Goods in the Community," #505 "Moving People in the Community," #506 Listen to the records available at the Elementary Media Center: "Transportation," #FS 301.3, 248 "Transportation, Music for Young Americans," #RA 031, 96 View the filmstrip, "A City is Transportation," #FS 301.3, 248, available at the Elementary Media Center. Prepare displays of the following posters, available at the Elementary Media Center. "How People Travel in the City," #Pic 388, 57 "Moving Goods for People in the City," #Pic 388, 58 "Transportation Teaching Pictures," #Pic 380.5, 29

Topic	Suggested Activities Grade 1
	At story time read any of the large number of books with colored illustrations which deal with transportation.
Reward For Our Work	Give experience in the buying-selling process by setting up a store in the classroom. Provide the students with beads, rocks, pictures of animals, or food which can be used to experience the process of bartering. Play a game which demonstrates how money is used over and over. Ask each student to draw a picture of something that he has to sell. The teacher asks a student what he has to sell. He tells her and she pays him a dollar for it. He then buys something from another student, using the same dollar to pay him. This can go on until all students in the classroom have had the dollar. View the film "Economics: Money," #446, available at the ESU I film library.
Why Some Incomes Are Low and Others Are High	Use the store that was set up in the last unit about money. Discuss why the owner of that store should get more of the money that is taken in than one of the clerks or anyone who works for him. Discuss why some workers produce better and faster than others by comparing a vacuum cleaner and a broom, a hand saw and a power saw, a tractor and a horse.
How Do We Get Our Money's Worth?	Cut pictures from magazines which show the activities of a family, such as a father buying a pair of shoes, a mother shopping for groceries, a family buying a house. Display these pictures under the labels not important, important, most important. Let the entire class decide into which categories the activity falls. To teach the concept that a family regulates its buying according to the number of people in the family, the prices of the items, the taste of the buyer, and the income, role-play a shopping incident where a father takes his children to the store. They see expensive things that they want but the father doesn't have much money. How would this situation be resolved? Another case might be a lady shopping who has no children but has a large income. In what ways can her shopping habits differ?
Families Buy Many Goods and Services Together	To teach what types of goods and services are purchased by single families and which by large numbers of families, play a game. The teacher names an article. Students decide who buys it. A quart of milk and gas to run furnaces might be examples to use.

Topic	Suggested Activities Grade 1
	View any of the following films available at the ESU I Film library: "Cities Are Different and Alike," #504 "What is a City," #508 "The City Changes," #457 "A Community Keeps House," #444
What We Do With the Income We Don't Spend	Discuss the things that people save money for, such as travel, buying special things they want to buy, education, retirement, for their business and many others. Prepare a display of illustrations drawn by the students illustrating why people save money.
What Does the Bank Do With Our Savings?	To teach the concept that one has to demonstrate certain characteristics before a bank feels that they can lend money to you, role-play two different circumstances. One might be the story of a man who has worked as a welder for many years. He has saved money enough to buy a shop and everything he needs for it except one big piece of equipment? Another opposite example might be of a boy who wants to deliver papers. He has done very poorly in school. This is his first job. However, four families on his block have promised to take papers from him if he has a route. Should the bank lend him $100 for the bike he needs? View the film available at the ESU I film library: "Economics: The Credit Card," #447
What We Need to Go Into the Baking Business	Take a field trip to a bakery. Observe production lines, the equipment used, and the finished product. To teach the concept that the baker must sell all that he produces in order to make a profit, role-play the situation where the baker only sells 1/5 of his wares on a stormy day. What happens to him as a result?
What We Need To Go Into the Clothing Business	Prepare a table display that shows the materials and the tools needed to produce clothing. Discuss the designer, patternmaker, cutter, machine sewer, hemmer, finisher and the presser. Draw pictures of these people doing their work. Set up a buying and selling situation by preparing a display of doll's clothing. Place the price of the garment in a cardboard box that is also on the table. When everyone has had the opportunity to buy what he chooses, count the money in the various boxes. Discuss what would happen to the manufacturer if no one chose the clothing he produced. Contrast what would happen to the manufacturer of the garment that was most in demand. To give practice in sequencing steps, describe the people who work on garments in factories, leaving out one person. Students will try to guess which has been omitted. They will repeat the people in the proper order that work on the assembly line, including the one that has been omitted.

Topic	Suggested Activities Grade 1
What We Need to Go Into the Building Business	Prepare a bulletin board display of pictures which show the people who are involved in building. Have in the classroom materials and tools so that students can pound nails and saw pieces of wood. Paint boards with latex. Mix a little cement so that they can put bricks together. Take a field trip to the site of several new houses in different stages of finish. Discuss what they see. Cover what will make one house more expensive than another, what kind of family might buy the house, how many people were involved in the building this far, and what materials have been used. If students have model earth moving machines and tractors display them in the classroom. Ask the lumber yard for scraps of different kinds of wood. Prepare a display which illustrates the differences in wood.
What Happens When People Buy All That is Produced?	Prepare a mural that shows how goods get from the producer to the consumer. Include three sections--the factories which produce the goods, the transportation of the goods and the consumer using the goods. Use a buying-selling situation to demonstrate what happens when an item, such as a ten-speed bicycle, is very much in demand by the public.
What Happens When People Do Not Buy All That is Produced?	Use a buying-selling situation to demonstrate what happens to a store-keeper who has more bananas or other produce on hand than are needed and purchased. Discuss the many people that are effected by this situation.
What I Want to Be	To impress upon students how many jobs there are for them to choose from as a way to make a living, play a game. Each child supplies the name of a job. A student who cannot think of a new one that hasn't been named, he must sit down. The goal is to be the last standing. Sing any songs which are about people who do various jobs. ABC Music Series, Music for Young Americans includes the following: "The Gas Station" "The Milkman" "The Baker" "The Carpenter" "The Dentist" "The Traffic Policeman"

Topic	Suggested Activities Grade 1
Some People Work Away from Home Without Receiving Income	Prepare a mural either with drawings or magazine pictures showing people who do volunteer work. Examples might be a father working in a youth recreation program, a mother helping with Scouts, children helping with a cleanup project, providing transportation for elderly citizens, collecting money for a drive, or volunteers who are in the armed services. Use puppets to dramatize how volunteers serve others. A good example might be getting groceries for an elderly person. Plan a class project in which the students clean up the school yard as volunteers not being paid.

Topic	Suggested Activities Grade 2
	View any of the filmstrips produced by Eyegate: "Types of Little Towns" "Little Town--U.S.A." "Stores in Little Town" "Food for Little Town" "Houses in Little Town and Life on a Farm" "Building a House in Little Town" "Workers and Activities in LIttle Town" "People Who Help Little Town"
Big-City Neighborhoods	View the filmstrip and listen to the tape of the story, "City Rhythms," available at the Elementary School Media Center. As background for this unit, view any of the following films available at the ESU I film library: "The Modern Post Office" #458 "Cities are Different and Alike" #504 "Moving Goods in the Community #506 "Moving People in the Community" #506 "People Who Work in Factories" #507 "People Who Work in Offices" #521 "What is a City?" #508 To relate the idea that cities and individual neighborhoods have a close relationship, role-play the situation in which there are 5 factory owners. There is a merchant back in the neighborhood. All the other students should portray workers in the factories. They should be paid with play money which they take back to the neighborhood and spend. The factories should close one-by-one and the effect on the merchant should be emphasized. Listen to recordings of music representing the many nationalities in a city which will show the large variety of ethnic groups found in a big-city neighborhood. Prepare a mural showing how big-city people must learn to live together. Included could be trash removal, control of pets, controlled noise.
Suburban Neighborhoods	Play a game that involves descriptions of suburbs and descriptions of large-city neighborhoods. The teacher says, "Which has less noise?" If the response should be suburb, students stay in their desks.
Farm Neighborhoods	Prepare a bulletin board display of the products that are produced on farms. Don't forget to include such items as wool, Christmas trees, fish, and honey. Prepare a large map of the United States showing the major agricultural products of the different regions. Cut the map apart so that the puzzle can be put together by the students. Discuss why different products are produced in different places.

Topic	Suggested Activities Grade 2
	Ask a farm machinery company for brochures of the equipment they sell. Use them in a display to demonstrate the large variety of machines used.
	Ask a 4-H member to come to the classroom and tell about 4-H Clubs. The County Agent might also be asked to speak.
Houses in the Neighborhood	Using pictures cut from magazines, stimulate discussion about what characteristics make a house a good, comfortable house that we enjoy using.
	As a contrast to the foregoing activity, collect pictures that show undesirable living conditions, such as would be found in slum areas.
	From the want ads in the newspaper, talk about the different prices being asked for the various houses. Discuss why there is such a difference in the selling price.
	Involve students in a debate, in which they argue whether a family of parents and six children should rent an apartment in the city or buy a house in the suburbs.
	Visit a construction site where the students can observe a house being built. Note the tools and the materials being used. Talk about the speciality jobs that the men are involved in, such as bricklaying, plumbing, wiring, etc.
	Set up a display on a table which contrasts the building materials used in the past and those used presently.
Stores in the Neighborhood	To impress upon the students that stores do a great service for us, ask them to accompany their parents to a grocery store. While there, they should find three items on the shelves that have been brought from different parts of the world. In class, the places where these foodstuffs originated should be marked.
	Using sale bills, discuss what factors encourage a merchant to have sales from time to time.
	Set up two tailor shops in the classroom, side by side. Role-play that the volume of business done by these shops is largely determined by the prices they charge, the quality of the work, the services they give, the demand for their work, and the profit they make.
Factories in the Neighborhood	View the film, "People Who Work in Factories," #507, which is available at the ESU I film library.
	Prepare a bulletin board which includes pictures showing items that are produced in factories and those that are not produced in factories.

Topic	Suggested Activities Grade 2
	To teach the advantages of assembly lines in amount of goods produced, set up an assembly line. Choose a task that will enable one team to each do one part of the job and on the other team, each member will do every part of the work. After the activity, discuss what happened and why assembly lines have advantages. Display several items in the classroom which have copyrights on them. Discuss why we have copyright laws. To demonstrate what would happen to a factory if people decided not to buy the goods produced there, dramatize the situation.
Volunteers in the Neighborhood	Ask someone from the community, who has been active in the Community Chest drive, to speak to the class about the volunteers, and how the money is divided between the different organizations. Another point to cover would be how the drive has made the neighborhood a better place for students to live. If the Community Chest Drive is going on at the time of this unit, have two children watch the thermometer that is in a place of business. Keep a corresponding thermometer in the classroom. Using pictures that students have drawn or pictures from magazines, prepare a classroom display which shows the fine work of volunteers. Discuss what would happen if people would stop volunteering.
Government in the Neighborhood	Role-play what would happen if the tax supported services were discontinued, such as fire and police protection. Ask students to choose goods or service produced by government, and make two drawings--one showing how the neighborhood is with the benefit of the service or goods and a drawing of what the neighborhood would be like if the service were discontinued. A game could be played where the pictures are shuffled then the students are asked to match them. Divide the classroom into precincts, students' desks representing houses. Hold a mock election, each precinct voting in a different place. Display a map which is marked in precincts as they exist in the community.
How Neighborhoods Change	View the film, "The City Changes," #457, available at the ESU I film library. Invite the principal to speak to the class about what happens when new families move into the neighborhood. The effect that families moving in have had upon the size of the school, property prices, and new housing projects should be considered.

Topic	Suggested Activities Grade 2
Neighborhood Planning	Prepare a mural showing what the students consider an ideal plan for a neighborhood and then compare it to the neighborhood as it is. Play a game in which the first student says,"When I help to plan a neighborhood, I will want an auditorium." The next student then repeats what he has heard and adds an item starting with B, the next C, etc. Beside giving some careful thought to what a neighborhood needs this will be a good sequencing activity. Build an ideal neighborhood in the students eyes out of small cartons which have been decorated as buildings. Arrange them on a table with streets, parks, litter baskets, schools and anything else that is important. Cut out two pictures of the same house. These could be found in ads in magazines. Paste the one on a paper that has many other houses around it and small yards. Paste the other one on a paper showing no other homes but a large, well-kept yard. Have the students vote on which house they would buy, how much more they would pay for it, and give the reasons that they feel as they do.
How Neighborhoods Solve Problems	Discuss problems that neighborhoods have, such as elderly people who can't help themselves. After a complete list has been made, students should prepare drawings which illustrate people helping other people to solve their problems. These should be used as a classroom display. Bring to school any articles that have appeared in the local paper which demonstrates ways the people in the community have helped others to solve their problems.
Schools in the Neighborhood	Prepare a bulletin board showing the schools in Wayne. Talk about how the schools have changed since 1930. The students should ask parents and grandparents about changes that they have seen. Use the filmstrips and records in the Kindle Unit 2 produced by Scholastic. The concepts covered are, "Figuring Things Out," "Making Mistakes," "Do You Forget?" "Who's Afraid?" and "What Next?" This kit is available at the Elementary Media Center. Prepare a display of people in occupations that require special ability in reading, writing, and counting. People in journalism, accounting, law, doctors, television, movies might be included.
We Go to School to Learn About Nature	Use a picture from a magazine such as National Geographic, which shows underdeveloped areas. To launch a discussion of why the country is underdeveloped. Without schools, specialists, skills, and tools are not developed.

Topic	Suggested Activities Grade 2
We Go to School to Learn About People	Take a field trip to the language laboratory at the high school. Observe how languages of different people are taught, and discuss why it is important for us to understand other languages. Play a game which is based upon pictures of different places around the world. Both rural and urban should be used. As the pictures are shown, children should try to determine what the country is. They will find that urban areas are easier to identify than rural areas.

Topic	Suggested Activities
Dots on the Earth	On the large tactile globe, locate the following cities: London, Paris, New York, Los Angeles, Tokyo, and Wayne, Nebraska. Collect pictures on postcards and from magazines which show cities from all over the earth. As they are shown on the opaque projector, talk about the differences that are visible in the pictures. View any of the following filmstrips from the Elementary Media Center: "Big City--U.S.A." #Fs 301.3, 3 "A City is Buildings," #FS 301.3, 252 "A City is People at Leisure," #FS 301.3, 249 "A City is People at Work," #FS 301.3, 250 "A City is Services," #FS 301.3, 251 "A City is Transportation," #FS 301.3, 248 "Fun and Recreation in the Big City," #FS 301.3, 2 "Cities and Towns," #K 301.42, 16 "Visiting a Large City," #FS 301.3, 1
What is a City?	To teach the concept that the goods sold in the city come from many places, place goods that are sold in the city on a table. Place a map of the world behind the table. With string, join the product and the place on the map where it was produced. To teach that there are many specialists in a city, play a game with the yellow pages of the telephone book for the area. The person who is it chooses a profession listed on the yellow pages. The rest of the students are divided into two teams. They take turns identifying the profession with a definition. A point is earned for a correct definition. Sometime, compare the size of the yellow section of the local phone book with that of a large city like Omaha. Discuss whether Wayne is a city that provides everything that people need. As an example, talk about those people who work outside the neighborhood, go to other cities for leisure, and shop in other cities. Prepare a display of picture postcards or magazine pictures which show landmarks of cities which are familiar to most everyone.
Why a City is Where it is	Collect pictures of places such as Athens, Moscow, Venice, Ravenna, Oslo, and other places. Discuss that these cities are all placed in spots which provided for their safety by being easy to defend. Collect maps which show the various means of transportation into a city. Discuss what transportation means to a city. Locate some of the largest, most important cities in the United States on the tactile topographic relief map. Some conclusions should be made about the effect of land forms.

Topic	Suggested Activities Grade 3
The City: Marketplace of Goods and Services	Study grocery ads and talk about the things that stores do to increase the amount of customers coming to the stores. To demonstrate that price for goods is important to customers, provide three students with identical things to sell, i.e. small bags of M & M candies. One student charges 5¢, one 7¢, and one 10¢. With play money, determine which merchant would sell the most bags of candy with the difference in price. Prepare a display of pictures which demonstrate that businesses come in many different sizes. Role-play how a factory is set up. Include many shareholders.
The City: Marketplace of Ideas	Take the class on a field trip to the library, the newspaper, or a bookstore. There they will be able to see the place where many different ideas are available.
Why a City Grows	To help the students discover how and why cities grow or fail to grow, use pictures and material in the Wayne County history book. Show the pictures on the opaque projector. Try to determine the reasons that Wayne grew to the size that it did. Many people have left the ruralareas and are now living in the cities. Demonstrate why with a role-playing situation. Designate one student as a farmer of 150 years ago, one of 75 years ago, and one today. Pass out to these people paper plates with illustrations of food on them, one plate for each person he could feed when he farmed. The first farmer was able to feed 4 people so will be given 4 plates. Seventy five years ago a farmer could feed 6 people, and the farmer today can feed 35. The student should see that increased production eliminated a need for so many farmers.
What Keeps People Together? What Keeps People Apart?	Prepare a display of newspaper articles which demonstrate the conflicts that arise between people in a community. Illustrate the conflicts with drawings. To illustrate that there may be strong feelings between people who are in different economic groups, role-play a factory situation. One student should portray the management, others the factory workers, and others the custodial staff. They should be paid in play money. Their feelings about the others can show in the narration.
The City and Government	Invite the mayor of the city to the classroom to talk about local government. He should discuss how he was elected, who helps him govern, how are issues decided, who enforces them. After discussion, draw pictures of the way our city would look if we did not have a group of representatives taking care of it. Some that might be included are no fire controls, no sewers, no water, no schools, no police protection, no street lights, no parks, no garbage collection, no hard-surfaced streets, and no recreation program.

Topic	Suggested Activities Grade 3
	Have a mock election of city officials in the classroom. After they have been elected, go through the process of deciding an issue and then enforcing it.
Why Must Cities Plan?	To demonstrate that all phases of the city have a relationship to every other part and there is much interdependence, prepare mobiles of geometric shapes. Each shape should stand for one element of the city system. The mobile will demonstrate that too much weight on one system will throw the whole mobile out of balance.
	Display a large map of the city streets. Discuss why some are crooked, or vary from the gridiron pattern.
	Prepare a model of a large, many storied building. Put it into a cardboard box and cover the first two stories with soil. This will demonstrate that, when land is scarce, very little of the building covers the surface of the land. Most of it is above and below the ground.
	To determine what things make a city either beautiful or not beautiful, show slides of city scenes and let the students determine whether they think it is beautiful or not. Include scenes that show some of the problems of the cities. If slides are not available, pictures from magazines can be used on an opaque projector.
	Make a collection of reports on city council proceedings. Discuss those items which show planning for a better community.
Keeping Cities Up To Date	When talking about urban renewal, consider the problems that a family experiences when they have to move out of an area that they are used to.
	Divide the class into small groups. Debate what use should be made of a newly-acquired plot of land in the city.
The City and Transportation	Prepare a table-display which shows the various means of transportation found in the city.
	Prepare a bulletin board display which will show early modes of transportation and the changes that have been made to get the modern means of transportation.
	If students have not seen the films, "Moving Goods in the Community," #505, or "Moving People in the Community," #506, show them at this time. They are available at the ESU I film library.
The City, Water and Air	Invite a person from the local water department to tell the class about the source of water and how it is handled in the community.

Topic	Suggested Activities Grade 3
	To understand the technology of getting water to people of Wayne, prepare drawings of the steps required. Include the people who work at supplying water to the city. Discuss the cost of water for a city. View any of the following films available at the ESU I film library: "Water Pollution--A First Film," #00389 "Air Pollution: A First Film," #429 "Conserving Our Environment: The Pollution Crisis," #496
The Precious Gifts of a City: Athens	Locate the city of Athens on the large, tactile globe, touching the area and surrounding areas. View any of the following films available at ESU I film library: "Alexander the Great and Hellenistic Age," #00222 View the film, "Greece: the Land and the People," available at the Lincoln City Library in conjunction with the Nebraska Public Library Commission. Prepare a display in the classroom of pictures that show Greece as it was in the Hellenistic Age.
The City that Swallowed Villages: London	Prepare an illustrated time line which will show the invasions of these islands. On a wall map mark the trade routes that were used by the British merchants and sailors. Mark the routes with string or yarn. Prepare a display of pictures of early England. Prepare a display of classroom pictures in the packet, "The British Isles," Pic. 914.2, M, available at the Elementary Media Center. Invite someone who has traveled to Great Britain to come to the classroom to talk about what he saw there and to show slides if they are available.
A City Married to the Sea: Venice	Compare the ancient maps that the Polos had to use in their travels with those that are available today. To demonstrate the amount of preparation that had to go into sending a ship and crew off for unknown parts of the world, role-play the process of hiring the crew, equipping the ship, and financing the trip. Prepare a display of pictures showing Venice as it is now and as it was. Invite a person who has lived in Venice or traveled there to come and tell the class about the city.

Topic	Suggested Activities Grade 3
	Look at the pictures and read, if possible, books from the Elementary Media Center. One that is available is This is Venice, by Sasek.
A City Rises from Ashes: Rotterdam	Ask someone who has lived or visited this city to speak to the class and show slides if they are available. Prepare a display of pictures. Locate the city on the tactile globe. View either of the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Hold Back the Sea" "Holland Today"
A City That Has More People Than Jobs: Calcutta	Invite someone who has lived in or visited Calcutta to come to class and speak and show slides if they are available. Locate Calcutta on the tactile globe. Prepare a display of pictures showing India in general and Calcutta specifically. Show the film, "India--A Better Tomorrow," #00299, available at ESU I. During literature period read a book to the students which demonstrates what living in India is like. There are books available in the Elementary Media Center. Study pictures in books about India that are available in the Elementary Media Center.
A City that Uses Its Wit: Singapore	Invite someone who has lived in or visited Singapore to come and speak to the class. If possible, show slides of the area. Prepare a display of pictures which show Singapore. Have available a display of picture books available at the El. Media Center.

SOCIAL STUDIES

Grade 4 - Nebraska

Topic	Suggested Activities
Nebraska Indians	Make a transparency of the state of Nebraska and show the location of the Indian tribes on it. Outline a map of Nebraska with heavy yarn or Elmers Glue so that the outline can be felt. Use different colored markers to show the location of the Indian tribes. Arrange a display of Indian artifacts. Label them. Have the students make Indian tools, weapons, and musical instruments. Paste a map of Nebraska showing Indian tribes on a piece of cardboard. Cut it into puzzle pieces showing one tribe on each puzzle piece. Have the student put the map together. Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer. Role-play various situations such as the Indian lady planting the crops, making corn meal, washing clothing. Use any of the following films, available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Children of the Plains Indians" 'Great Plains Trilogy Series II: Nomad and Indians" (any of series) Use filmstrips having to do with Indian tribes of Nebraska, available in Elementary Media Center: "Plains Indians, Dakota," "Indians of North America," "Learning About Indian Crafts," "Learning About Indian Dances," "Learning About Indian Houses," "Indians of the Plains."
The White Man Appears	By using a transparency projected on the blackboard the student will be able to draw an outline map of the United States and mark the Lewis and Clark Route on it. For a tactile approach, outline the map of the U.S. with Elmers Glue. Mark Lewis and Clark's route with colored stars. Have the student touch the outlines and the starred route. Make two large shoe patterns. The students are to imagine that these are footprints of the explorers that are being studied. Write the name of the explorer, the date of his exploration on one footprint. Make a drawing or use a picture on the other to show what his exploration was.

	Suggested Activities
The White Man Appears, continued	Place a piece of window screen behind a map of the United States. Stick a picture of a pair of shoes to a magnet. Have the student move the magnet over the route the explorer covered. If the route was a water route, boats can be attached to the magnet. Make Conestoga Wagons from boxes. Cut out pictures of items that the early pioneers would put in their wagons when preparing to leave. Use filmstrips having to do with early explorers and pioneers. Use film having to do with early explorers and pioneers. Available from the Nebraska Public Library Commission is, "Great Plains Trilogy Series III." Role-play various situations such as the explorations of Lewis and Clark. Some of the students might have picture postcards from museums, such as the Nebraska Historical Museum in Lincoln. Make an array of these postcards. A set of posters, "Pioneer Days," is available at Elementary Media Center. Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer.
The Days of the Trails	By using a transparency projected on the blackboard the student will be able to draw an outline map of the United States and mark the Oregon Trail on it. For a tactile approach, outline the map of the United States with Elmers Glue. Mark the Oregon Trail with yarn, glue, colored stars, tacks or any other object that has texture. The two activities above could also be carried out when studying the Mormon Trail. Place a piece of window screen behind a map of the United States. Stick a picture of a Conestoga wagon to a small magnet. Have the student move the magnet over the Oregon and Mormon Trails. Make models of the Conestoga wagon using cardboard boxes. Place pictures inside of articles that the family might have taken with them. Make corn meal by mashing corn in a bowl with a stone. Make an early fort by using tongue depressors.

	Suggested Activities
The Days of the Trails, continued	Role-play in a situation where one student is a pioneer who followed the Mormon or Oregon Trail and the other student interviews him for a newspaper article. He might be asked questions like "Was the trip dangerous?" How long did the trip take you?" "What things did you take with you?" and others. To make this a more realistic situation a tape recorder could be used and it could be set up as a radio or TV interview. Have a display of books from El. Media Center. During literature time, read one to students which will give flavor of the culture. Use filmstrips having to do with the major trails. Use the film, "The Oregon Trail," available from the Nebraska Public Library Commission. Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer.
Pioneer Living in Nebraska	Using Lincoln Logs, construct a log cabin. Make an array of any items which might be typical of those brought to Nebraska by the pioneers. A washboard, a cast iron kettle, a wooden ladel, a slate, a raccoon hat, and other related articles. Make candles in the classroom. If it is impossible to get a mold, dip the wick in the melted wax or make a mold out of milk cartons. Use filmstrips having to do with the life of the early explorers and pioneers. View the film, "Boy of a Frontier Fort," available at Nebraska Public Library Commission. View any of the films available at the ESU I film library: "Pioneer Living: The Home" #518 "Pioneer Living: Home Crafts," #519 "Pioneer Living: The Village," #520 Role-play with the students demonstrating what the pioneer family might be doing in the evening at home, or during the workday. If students have souvenirs from historical museums, such as the Nebraska Historical Museum, make an array of these souvenirs.
Agriculture in Nebraska	Use a transparency of the map showing the farming areas in Nebraska. The different sections should be shown in different colors. Have the student trace over the projection on the blackboard.

	Suggested Activities
Agriculture in Nebraska continued	Paste a map of Nebraska showing the farming areas of the state on cardboard. Cut the various sections apart and have it used as a jig-saw puzzle. To allow children to get the feel of the land formation, particularly the slope of land from the West to the East in Nebraska, fill shallow boxes with sand or dirt. Have the student show hills, prairie lands, and rivers. By lining the trench for the rivers with Saran-wrap, water can actually be put in the rivers. If possible set up an array of a head of the oat plant, sorghum plant, and wheat plant. An ear of corn and a stalk of the alfalfa plant should also be included. A sugar beet would also interest the students. Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer. Show the films which are available at the Nebr. Public Library Commission: "Nebraska - Land of Grass" "Nebraska: Where the Cornbelt Meets the Range" Use film strips having to do with the agriculture of Nebraska. Prepare slides using pictures and postcards. Have student plan and record narration. The "Nebraskaland Magazine" will provide many fine pictures which the student can use in various ways, such as on a bulletin board.
Industries in Nebraska	Use any pictures available for a classroom display. "Nebraskaland" would be one source of pictures. Prepare a slide program by filming magazine pictures and postcards. Have the students plan and record the narration.
Importance of Conservation	Make a transparency of the state divided into the three soil type regions. Have the regions colored in appropriate colors. Project this on the chalkboard and have the students trace it with a piece of chalk. Make a map of Nebraska and represent the three soil areas with different grades of sandpaper. Encourage the student to touch the areas and to feel the outlines. Get charts and pictures from the Soil Conservation office which illustrate erosion and conservation. Make an array of these illustrations either on a table or on a bulletin board.

	Suggested Activities
Importance of Conservation, continued	Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer. Ask personnel from the Soil Conservation office to talk to the class and show any films or slides that are available.
Wildlife in Nebraska	"Nebraskaland Magazine" will have many pictures that could be used for bulletin boards and for activities. Some pictures could be pasted on cardboard and used as jigsaw puzzles. Students might be able to relate experiences they have had on hunting and fishing trips in Nebraska. The Nebraska State Game Commission could supply posters and perhaps slides or films. Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer. Ask questions such as "A quail is sometime called a ?" He then would put the contact point on the answer "Bob White" and the bell would ring or buzz.
Government	Have the principal come into the room and tell about school government. He should touch upon the name, school district, school board, teachers, students and superintendent. Relate this to the government in Nebraska.
The Nebraska State Capitol	Many of the students will have been to the State Capitol and will have souvenir post cards or pictures. Make an array of these items on a table or a bulletin board. Make a silhouette drawing of the State Capitol by using the overhead projector. Use the filmstrip from the Media Center entitled "The Nebraska Capitol." It has an accompanying record. Use the large posters showing views of the Nebraska State Capitol. Read the information on the posters together. These are in the Media Center. View the film "Nebraska's Memorial Capitol," available at the Nebraska Public Library Commission. Take a field trip to the Capitol in Lincoln. See the things that have been studied in the classroom.
Symbols of Our Nebraska	Have a Nebraska State Flag in the classroom. Allow the students to touch the seal on it.

	Suggested Activities
Symbols of Our Nebraska continued	Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer. Ask questions like "What is the Nebraska state flower?" He should get a buzz if he touches the Goldenrod. Use the large poster set called "Nebraskaland" to make an array. It includes pictures of the symbols and information about each. This is in the Media Center. Prepare a slide program by filming pictures from magazines and postcards. Have the students plan and record the narration.
Nebraska Will Always Remember These People	Arrange a display of the books that Neihardt, Cather, and Sandoz wrote. Label them with cards with the names of the authors made with heavy yarn so that the students can touch the letters of the name. Use the electric board which will buzz when the student correctly makes contact between the question and the correct answer. Put the names of these people on the board--Neihardt, Cather, Sandoz, Aldrich, Pound, Norris, Bryan, Morton, Bessey, Flanagan, Nichols, and Condra. Put a short statement about each in the other column. Have the student work with this until he can get a buzz from most of them. Use a Nebraskaland Magazine to find pictures of famous Nebraskans. Prepare a classroom display.
Some Important Nebraska Cities	Have a large map of Nebraska with nothing but rivers on it. Using colored tacks or stickpins have the students locate the major cities of the state. Using road maps of Nebraska play a game where the teacher will give letters and numbers on the sides of the larger cities. The student is to tell what city he finds at the point where these lines intersect.

Supplementary Activities

On a large outline map of Nebraska locate the State Parks, Nebraska National Forests, National Monuments, National Historic Landmarks, and the National Historic Site. Use various colors of stickpins or tacks to show each category.

Learn to sing "My Nebraska," the state song.

SOCIAL STUDIES

Grade 4 - Four Lands, Four People

	Suggested Activities
A Trip Into Space	To start the imaginary space flight read to the students the materials about the first space satellite launching from John Lewellin's book, The Earth Satellite: Man's First True Space Adventure. Use the poster set "Pictures From the Moon," which is in the Media Center. Show any of these films from the Educational Service Unit: "Space Science: The Planets," "Space Science: Studying the Stars," "Comets, Meteors, Planetoids," "Our Class Explores the Moon," "Space Science for Beginners" and "Sun, Earth and Moon." Prepare a list of items that would be needed if one was to take a space flight. Instead of words, pictures could be taken from magazines and used for the list. Provide the SLD children an opportunity to improve their auditory skills by listening to oral reports on "How the Planets Received Their Names." Prepare a diagram of the solar system on the board or bulletin board. Multi-sensory media, such as yarn, could be used to show the paths of the planets around the sun. Use a globe to illustrate the movement of the earth in space. Take the students to the College Planetarium to see the show on the planets. Show the filmstrip, "The Solar System" from the Media Center.
A Closer Look At the Earth	Use the large multi-sensory globe which will allow the students to touch land surfaces as well as bodies of water. Take the students outdoors to observe cloud movement, objects being blown about and to feel the wind. This will help the students to feel and see wind movement. Listen to a recording of the music by Claude Debussy called Les Nuages (The Clouds). Give students the opportunity to tell you if the music suggests clouds to them and why or why not. This will be a good auditory activity. Use any of these films which are available at the Educational Service Unit: "Clouds" "What in the World is Water"

	Suggested Activities
A Closer Look At the Earth continued	Use the filmstrip in the Media Center, "Earth," and "Our Earth."
The Earth's Crust	Three-dimensional poster models made in the Media Center showing how mountains are formed will be helpful. Have models showing lifted crust, folded crust, slipped block crust, and a volcanic cone. Make a display of pictures showing different types of land-forms. These might be cut from magazines or might be snapshots taken on trips. Prepare a model volcano which will actually smoke from the cone area. Show any of the following filmstrips from the Media Center: "Work of Internal Forces" "Work of the Sea" "Work of Running Water" "Work of Snow and Ice" "Work of Ground Water" "Work of the Wind" "How the Earth's Surface Changes" "Demonstrating Changes in the Earth's Surface"
The Crust Shapes Land and Water	Make a wall mural showing the cross section diagrams of where water goes. Give students an opportunity to mark examples of islands, peninsulas, gulfs, bays, coastal plains, rivers, and harbors on prepared sheets. Show the filmstrip: "Map Skills" from the Media Center. Films available from the Educational Unit are: "Mapping the Earth's Surface" "Map Skills--Using Maps Together" "The Globe and Our Round Earth"
Riches In the Earth's Crust	Make a bulletin board using a list of building materials. In one column list those that come from living things and in the other list those coming from nonliving things. Take a walk around the school building, observing materials which have been used in the school and discuss why each material is used as it is. Make a display of samples of rocks mentioned in the text: sandstone, limestone, flint, marble, slate, and granite. Allow students to handle them and discuss their differences.

	Suggested Activities
Riches in the Earth's Crust continued	Make a display of metallic objects used around the home such as iron, copper, steel, and aluminum. Label them to tell what material has been used. Filmstrips in the Media Center that might be used are: "Rocks and Minerals," and "Rocks and Mineralization."
The Sea and Its Resources	Make a picture display of grocery ads which include foods that are provided by the sea. Talk about those that are from saltwater and those from fresh water. Set up an experiment using two plants. Demonstrate the effect that seawater has on plant life by watering one with fresh water and the other with seawater or salted water. Label them. Use prepared slides of microscopic sea plants and animals and a microscope to observe them. Explain the microscope and its uses. Use the filmstrip, "Familiar Fresh-water Fish," or "The Work of the Sea," available at the Media Center.
Oceans and Continents	Have the large multi-sensory globe in the room so that the student can demonstrate directions on it. A large wall map should also be used. Roll a wall map up to demonstrate that it is only a flat projection of a globe. Locate the six continents and oceans on the multi-sensory globe. Write continent and ocean names in the sand trays or on magic slates. Make outline maps of the continents from sandpaper. Have the student touch the outlines of them. Draw outlines of the continents on a balloon with a felt-tipped pen. Deflate the balloon, cut it open and demonstrate how a flat projection is made from a global one.
Movements of the Sea	Make a mural or bulletin board showing the movement of the sea. The arrows should be made of sandpaper or glue, or yarn so that they can be touched. Make a display of souvenirs that have been gathered from around the seacoast. Look for tide marks, or any other characteristics of interest. Play the record La Mer (The Sea) by Claude Debussy. Ask the students to try to hear the rhythm of the sea in the music.

	Suggested Activities
	Read the poem by Robert Frost, "Once By the Pacific." Have the children pick out words and phrases that suggest the incoming sea was hitting the shore violently.
	Have students touch the Arctic and Antarctic Regions on the multi-sensory globe.
	Have the student give an oral report on the sinking of the Titanic to demonstrate the danger of icebergs. Encourage the SLD children to listen carefully.
Sea and Land at the Poles	Use the large CBS topographical globe so that students can touch the land and sea areas at the poles.
	Write the names of continents and oceans on outline maps.
	Make shadow outlines of the continents on a mimeograph stencil and have the children identify each continent from its outline.
	Inflate a ballon upon which lines have been drawn with a felt-nibbed pen. Let the mouthpiece represent the South Pole. Mark the North Pole. Deflate the ballon and cut it so it will lay flat. This will demonstrate the problem of trying to represent a spherical surface on flat paper.
An Ocean of Air	Prepare a bulletin board showing the Troposphere, Statosphere, and Ionosphere.
	Show the filmstrips, "The Air," "Exploring the Air," and "Putting Air to Work." These are in the Media Center.
	Set up a demonstration showing what happens to a balloon filled with air and one filled with other hydrogen or helium. The students will observe the gas-filled balloon rising upward.
	Make a display of pictures showing aircraft that are lighter than air-the blimp, dirigible, and balloon.
Water In the Atmosphere	Keep a record of the weather in your community for a week or two. Find out how many days of rain there have been, how many days were cloudy, and how many days of sunshine. Ask the children to tell what kind of clothes would have been appropriate each day.
	Make a display of dehydrated foods and use it to demonstrate the concept that these foods have lost their water because of evaporation.
	Set up an experiment to demonstrate evaporation and condensation of water. Have a closed container and an open container of water. Place another container in the sun and one in the shade. In another container mix water with another substance, such as milk.

	Suggested Activities
	Show filmstrips, "NEW Why Does It Rain, Snow, Hail, and Sleet?". "NEW Why Does the Weather Change?" and "Foggy and Windy Day" from the Media Center. The films, "Clouds," "What In the World Is Water?" and "Weather for Beginners," which are in the Educational Service Unit Library can be shown.
What Happens to Rain?	Show the filmstrip, "How Does Water Get Into the Air," and "Weather: The Weather Cycle," from the Media Center. Make a multi-sensory bulletin board showing the Water Cycle. Use yarn, sandpaper, cotton and other materials which lend themselves to the tactile approach. The children can prepare a wall mural showing the water cycle.
Life in the Atmosphere	Prepare a multi-sensory map on a bulletin board showing the areas of desert, grasslands, forest, rain forests, mixed mountain growth and tundra and ice. Draw pictures and make a display showing kinds of work in which men have to carry air or gases to breathe, or use special breathing equipment. Make a display of pictures showing the plant and animal life that one would find in the various vegetation areas of our country. Use the filmstrips from the Media Center: "Seeds and How They Travel" "How Plants Start Growing" "Seeds and How They Travel" "How Plants Help Us" "Animals of our Continent" Use these films available at the Educational Service Unit: "Why Plants Grow Where They Do" "Why Animals Live Where They Do" "Small Animals of the Plains" "We Explore the Desert"
Seeing and Feeling the Sun	Use two clocks, one set for four hours before class time and one set for four hours after class time. Talk about how the conditions around them were or will be different at the time the clocks show. Locate the Tropic of Cancer, equator, and the tropic of Capricorn on a large world map. Use yarn or sandpaper or a multi-sensory globe so these places can be felt with the fingers. Make a record of temperature readings at a specified time of the day for a few days. From this, have the students tell you what the warmest part of the day is.

	Suggested Activities
With Stanley In the Tropics	Make a display of pictures showing tropic areas. Make a simple time line with the present year at the top and 1876, the year of Stanley's trip, at the bottom. Students might put in pictures that relate to these dates such as their births, their parents' birth, and so forth.
Down the River	Show the filmstrip, "Life Along the Nile," which is in the Media Center. Use the set of posters from the Media Center called "Children of Africa." Use these films from the Educational Service Unit: "African Continent--An Introduction" "Boy of Central Africa" Have one of the better readers in the group read, The Congo: River into Central Africa by Patricia Lauber and share it orally with SLD students.
Peary Explores the Artic	Make a display of posters in the Media Center called "Alaska." Use the filmstrip from the Media Center called. "British Columbia and the Yukon." On a transparency make a drawing of Peary's trip to the pole. Allow the student to move his finger along the route that Peary took. Have the student make a recording on which he tells about how life would be if he lived with the Eskimos or with the people of the Congo.
The Dash For the Pole	View the film, "Nanoak of the North," available at the Nebraska Public Library Commission.

SOCIAL STUDIES

Grade 5 - The United States

Unit I-A Look at Our Country

Chapter 1 Our Land	Suggested Activities
Map Skills	Use any of the following films available at the ESU I film library: "The Globe and Our Round Earth" "Map Skills - Using Maps Together" "Mapping the Earth's Surface" "Latitudes, Longitude, Time Zones" View any of the following filmstrips available at the Middle School Media Center: "Maps: What They Are" #235 "Map Symbols and Terms" #236 "Globes: Our Most Accurate Maps" #237 "Maps: Their Types and Uses" #238 "Latitude and Longitude: Finding Places and Directions" #239 "Latitude and Longitude: Time, Zones and Climate" #240 Make a display of several samples of different kinds of maps (road, atlas, population, rainfall, etc.). Spend several days talking about symbols and keys. On a tactile map, look at and touch the two major mountain systems in the conterminous United States. Point out two mountain ranges in each of the systems. Draw a cross section of the United States. Label the important landforms. Listen to an oral report which tells when Nebraska joined the United States, why it joined, what other states joined at the same time and how many states joined after Nebraska joined. On a large styrofoam ball, mark the lines of longitude and latitude with yarn. Let one color of yarn represent latitude and another longitude. Designate the equator, Tropic of Cancer and Tropic of Capricorn with different colors. Prepare a transparency of a modern weather map. Discuss the signs and symbols on the map. Prepare a graph showing the average rainfall as it is in New York City; Houston, Texas; Denver, Colorado; Phoenix, Arizona; San Francisco, California; Portland, Oregon.

Chapter 2 The American People	Suggested Activities
American was explored by men from different European countries	Prepare a display of articles that are from the far-East, including spices. Discuss these articles in class. Start a time line to be expanded as study progresses, showing the background and development of the United States. Put trade routes on a world map with yarn. Discuss the economic concept of limited resources and unlimited wants. How best could the wants be satisfied? Talk about possible solutions.
Religion was a major unifying force in Europe.	Prepare a mural which will show the story of the Crusades. Discuss what influence the Crusades had on trade. View the film, "Rise of Europe - 1000-1500 A.D.," available at the ESU I, #00351. View any of the following filmstrips available at the Middle School Media Center: "Our Heritage from Egypt" #211 "Our Heritage from the Middle East" #212 "Our Heritage from Greece" #213 "Our Heritage from Rome" #214 "Our Heritage from the Byzantine Empire" #215 "Our Heritage from the Moslem Empire" #216 "Our Heritage from Medieval England" #217 "Our Heritage from the Renaissance" #218

Chapter 3 The Iron Age Sails to the Stone Age	Suggested Activities
The possibility of a good trade route to the Orient prompted Queen Isabelle to sponsor Columbus	Listen to reports prepared by other students which tell about experiences they might have had if they had been Columbus. Participate in a play or puppet show concerning an aspect of the discovery of America. Orally list the dangers and risks Columbus faced. On a map or a transparency, draw Columbus' routes. Listen to the record, "Voyages of Christopher Columbus," available at the Middle School Media Center. Make a model of Columbus' ships. Write original poems about Columbus. Make a time line of the various explorers. Include Amerigo Vespucii, Columbus, Cortes, Coronado, Balboa, Vasco de Gama, Magellan, Erickson, De Soto, Cabot, Hudson, Ponce de Leon, Marquette, Joliet, La Salle. View the filmstrips and listen to the record available at the Middle School Media Center: "Discovery of America," #K 94. List places that have been named after Columbus.
God, Gold, and Glory were the driving forces behind Spain's interest in the New World	View the following films available at the ESU I film library: "Why the New World was Explored," #00306 "Early American Civilizations," #00223 Use transparencies from the Middle School Media Center: #973.1/147 "Motives For Exploration and Colonization" #973.1/148 "Discovering and Exploring a Continent" Make posters to illustrate the exploits of the explorers. Participate in charades where certain exploits are dramatized and the rest of the class guesses who is being represented. Write riddles about explorers and share them with the class.

	Suggested Activities
France settled in the North	Add the French explorers to the time line. View the film, "French Explorations in the New World," available at the ESU I film library. Prepare posters showing why the French explorers began their journeys.

Chapter 4 Coast Colonies	Suggested Activities
English exploration in the New World was a private undertaking without government aid.	Add English explorers to the time line. Use the overhead projector to draw the routes of the explorers. Have each pupil choose an explorer he would like to have been. The student should report on the explorer and make a paper mache figure of him, painting and dressing the figure.
The first permanent English settlement in America was the result of determination and resourceful leadership by Englishmen	Listen to the record, "Pocahontas and Captain John Smith," #R45 available at the Middle School Media Center. Make a model of Jamestown. Dramatize the story of John Smith and the settling of Jamestown. Listen to a report on Pocahontas and her later life in England. Listen to a tape recording of the poem, "The Courtship of Miles Standish." Make a bulletin board of Jamestown using maps and the opaque projector. Display any antiques available from this period. Make a model of a home of this period. Dress paper dolls appropriate to this period.
The search for religious freedom was the reason many people came to America.	Dramatize the meeting of Pilgrims and Indians. Dramatize the first Thanksgiving. Listen to the record, "Landing of the Pilgrims," #R52, available at the Middle School Media Center. Prepare a tape recording which is a description of an English colonist's life in the colonies as he would describe it to a friend in England.

	Suggested Activities
	Role-play two people who are planning to come to America for religious freedom. Tell in the conversation why they are coming to America.
	View the film, "The Pilgrims" available at the Nebraska Public Library Commission.
The New England colonies were founded for religious reasons.	On a time line show the chronology of the establishment of the colonies.
	Prepare a chart of the colonies, listing the name, religion, location, leader, and the reason for settlement.
	Prepare a display of materials and products from various colonies.
	Make a model of a New England clipper ship.
	Tape record a message which could be sent back to the mother country describing life in the colonies.
	Fill in areas on a large map of the United States which show the colonies as they are studied.
	Write riddles for each colony. Put the riddles in a box. Have pupils draw for them and identify.
	Dress dolls in clothing appropriate to this period.
	Make a diorama in a cardboard box depicting life in one of the colonies.
	Prepare a display of objects for a colonial exhibit. Example: candle molds, spinning wheels, butter molds, etc.
	Construct models to show architectural ideas of the period.
	Listen to individual reports on the important men of the colony.
	Make booklets with this information: types of homes, clothing, government, schools, recreation, forms of punishment.
The topography of the New England colonies contributed to the interest the colonists developed in the areas of manufacturing and other businesses.	Make a relief map to show the rugged coastline, forest areas, good harbors.
	Prepare a model of clay which shows the Fall Line between the Piedmont and the Coastal Plain.
	Discuss why the natural resources and the natural features led to commerce and industry. Follow this with a role-playing situation in which two colonists discuss why they settled in this area.

	Suggested Activities
The Middle Colonies were settled by persons from many countries which resulted in a diversity of ways of life.	View the filmstrip and listen to the record available at the Middle School Media Center, "The Dutch, English, French, and Spanish Colonists," #K98. View the filmstrip, "Middle Atlantic, Their History," #250, available at the Middle School Media Center. View either of the following films available at the ESU I film library: "Atlantic and Gulf Coastal Plains," #00199 "Colonial Life on a Dutch Manor," #00207 Prepare maps on which the location of the colonies, the nationality of the people which settled it, the date and the reason for settling are shown. The teacher should direct this activity by using transparencies on an overhead projector. Listen to oral reports on the important men of this area. Listen to the record, "William Penn: Quaker Hero," #R28, available at the Middle School Media Center. Write letters back to the mother country describing life in this group of colonies. If writing is a problem, tape record the communication. Write poems and stories about the colonies. If writing is a problem, tape record the poems and stories. Prepare a time line which shows the chronology of the establishment of the colonies. Chart these colonies, showing the name of the colony, religion, location, leader, and reasons for settlement. View slides made during travels in this area. Prepare a display of pictures and magazine articles for the classroom. Participate in a play written by the class which portrays life in the Middle Colonies. Reproduce a map of the original 13 colonies large enough to use as a bulletin board. Paint it and number each colony. Make small cards with the names of each colony. Practice identifying the colonies by tacking or pinning up the names to correspond with the numbers. Bring objects for a colonial exhibit. Examples: candle molds, spinning wheels, butter molds, etc. Make a diorama in a cardboard box depicting life in one of the colonies. Dress dolls in the clothing of that period.

	Suggested Activities
	Write riddles for each colony. Put the descriptions in a box. Have pupils draw for them and identify.
	Show architectural ideas of the period by constructing models.
	Make a Pennsylvania Dutch design for a bulletin board.
	Make booklets with this information: types of homes, clothing, government, schools, recreation, forms of punishment, kinds of work. If writing is a problem, pictures may be used.
The Southern Colonies were developed to gain profit.	View the filmstrip, "Southern U.S.--Its History," #251, available at the Middle School Media Center.
	View the transparency, "North America, 1750," #973/17 available at the Middle School Media Center.
	Make a table-top model or a diorama model of a plantation.
	Participate in a play that is written by a member of the class which demonstrates the southern way of life.
	Listen to oral reports on the important men of this area.
	Prepare a display of articles used in these colonies.
	Write an alphabet story of the unit, beginning with A and using every letter of the alphabet in an important statement about the unit.
	Listen to the story of a pine tree or a piece of cotton telling its life from the seed to the market.
	Make a chart of the colonies, listing the name, religion, location, leader, and reasons for settlement.
	Make a time line to help show the chronology of the establishment of the colonies.
	Write poems and stories about these colonies. If writing is a problem, tape recordings might be made.
	Prepare a display showing the materials used and the products from various colonies.
	Make a map showing these colonies, their location, the nationalities which settled them, the date and the reason for settling. The teacher should lead the class by preparing this on a transparency on the overhead projector.

	Suggested Activities
	Write riddles about these colonies and put them in a box. Draw for them and identify that which is described. Dress dolls in the clothing of the period. Make a diorama in a cardboard box depicting life in one of the colonies. Make booklets with this information: types of homes, clothing, government, schools, recreation, forms of punishment, kinds of work. Poems, pictures and songs may also be used. Prepare a large map of the 13 colonies for a bulletin board. Paint and number the Southern colonies. On small cards put the names of the colonies. Identify the colonies by taking up the names to correspond with the numbers.
The plantation system and use of slaves were basic to the economy of the Southern Colonies.	Discuss the changes that have taken place in farming that have affected the number of people engaged in farming. Discuss why most of the plantations were near rivers. Discuss the differences of the plantation owners and small farm owners of the South. Contrast the life of the slave or indentured servant in the South. Learn to sing some of the folk songs of the region with the help of the music teacher. Suggested are "Lonesome Valley," "Sourwood Mountain," "One Morning in May," "Shuckin' of the Corn," "Shenandoah," and "Wayfaring Stranger."
Chapter 5 New Nation, New Government	Suggested Activities
The self-supporting Colonists with a unified purpose, brought about the eventual desire for the colonists to become an independent country.	Make a mural that depicts acts that led to war with England. Use slides, postal cards and pictures obtained from friends or from trips to show: Fort Necessity, Paul Revere's home, Fort Ticonderoga, First National Road, the development of the American flag, the Mayflower, Boston Harbor, Carpenter's Hall in Philadelphia, or any other place of importance at this period. Listen to oral reports which are character sketches of colonists, emphasizing traits which most seemed to have in common. These should show how the desire to be self-governing developed. View the transparency, #973.3/150 "Chronology of Events Leading to the American Revolution," available at the Middle School Media Center.

	Suggested Activities
	View the films, "The Midnight Ride of Paul Revere," #00085 and "Dawn of the American Revolution," #00136, available at the film library of ESU I.
Acts of retaliation by England resulted in the Revolutionary War, which gave the colonists their freedom from England.	Construct an ongoing bulletin board in a ladder effect which builds up to the final Declaration of Independence. Make drawings to explain the various stages. Prepare sketches or plays to dramatize great heroes of the Revolutionary War Period. Listen to a student debate on: The colonists should have obeyed all of the acts passed by the British. Prepare a cartoon of an event that might have appeared in a newspaper at this time, perhaps printed by Ben Franklin. If possible, memorize some of the parts of the Declaration of Independence. Choose those parts that are understood and have meaning for the student. Discuss in class the meaning of the Pledge of Allegiance and tell exactly what each part means. Draw the story about our flag and its development. View the film available at the film library of ESU I. "America's Heroes - George Washington," #00069 View any of the following filmstrips available at the film library of ESU I: American Revolution "Causes of the Revolution" #25 "War from Lexington to Princeton," #26 "Declaration of Independence," #27 "War from Saratoga to Valley Forge," #28 "War at Sea," #29 "War in Action," #30 Use any of the following filmstrips with accompanying records available at the Middle School Media Center: "The Spirit of Independence," L15, M75 "Freedom's Pledge," L16, M76 "History of Our Flag," L17 Listen to any of the following records available at the Middle School Media Center: "Bill of Rights," R1 "Declaration of Independence," R15 "Our Independence and the Constitution," #R41 "Declaration of Independence," #R63

	Suggested Activities
	"American Revolution," #R103 "Your Living Bill of Rights," #R133 "Winter at Valley Forge," #R45 "Swamp Fox of the Revolution," #R40 "George Washington, Frontier Colonel," #R36 "Thomas Jefferson: Father of Democracy," #R35 "Benjamin Franklin: Man and His Discoveries," #R17 "Ben Franklin of Old Philadelphia," #R49 View any of the following transparencies available at the Middle School Media Center and discuss: "Revolutionary War 1775-6," #973/21 " " " 1777," #973/22 " " " 1778-9," #973/23 " " " 1780-1," #973/24 "American Revolution 1775-1783," "Factors For and Against American Success in the Revolutionary War," #973.3/151 "American Revolution - The Outbreak in New England," #973.3/152 "American Revolution: Boston and Bunker Hill," #973.3/153
The Democratic form of government was instituted, which gave all people a voice in their government.	Prepare as a class a chart that lists reasons that the 13 states needed some form of central government. Set up a mock Constitutional Convention in Philadelphia. Each student should choose a state to represent. Prepare a constitution that fits the period of time when it was written. Compare it with the constitution that was actually written at the convention. After listening to the record on the Bill of Rights, discuss it. Discuss reasons why ten amendments were added. Listen to oral reports on the men who helped write the constitution. Prepare a bulletin board showing the trunk and branches of a tree which will represent the different parts of our government. Draw pictures to show what the trunk and branches represent. The tree should show how people have a voice in government. Participate in a class role-playing activity which demonstrates why we have a representative democracy rather than a pure democracy. Prepare a transparency to show to the rest of the class which shows the branches of government. Include the main functions of each branch. Discuss how the "checks" and "balances" can be derived. Make a bulletin board display of newspaper articles which pertain to the right to life and liberty, right to a fair trial, right to worship, and freedom of speech.

	Suggested Activities
	Discuss the duties of citizens which go along with the rights. Prepare a mural or pictorial chart illustrating the ways our government helps us and the ways we cooperate with the government. Listen to stories written by classmates. They could be: "This is Where Our Money Goes" "Is the Constitution Just a Piece of Paper?" "The Freedoms I Like Best" "Symbols of Our Government" "We Live in a Democracy" Prepare a mural or pictorial chart which illustrates the ways our government helps us and the way we cooperate with the government. View the film, "Certain Unalienable Rights," #00377, available at the film library of ESU I. View any of the following filmstrips in the "Government in Action," set, available at the Middle School Media Center: "President," #15 "Congress," #16 "Federal Courts," #17 "Executive Department and Agencies," #18
Chapter 6 Westward and Westward	Suggested Activities
The need for more land and an opportunity to make a life for one's self caused many pioneers to move westward.	Prepare a large map of the U.S. for a bulletin board. Show the area that has been settled up to this period of time. Show trails made of string or yarn and other important events cut out of construction paper and pasted on the map. Listen to student-prepared stories about the rich land and opportunities that were found as settlers went to the other side of the Appalachians. Listen to stories about Daniel Boone. Help present a play about him. Have a pioneer day. Bring articles to school that might have been used by pioneers, dress as pioneers, and dramatize scenes of pioneer life. Listen to legends or tales of the West as they are told by the teacher, other students, or that have been recorded. Compare orally pioneer life and our lives today.

	Suggested Activities
	Research family history. Furnish each child with a heritage chart on which generations can be listed. Make booklets of family stories.
	On a large map on a bulletin board show each territory as it is acquired. Discuss which states were formed from that land.
	Prepare an imaginary daily diary of a pioneer child using pictures instead of writing. Include something that the child was responsible for. Compare with a modern child's responsibility as they are read.
	Discuss the barriers and other modes of travel at this time and how it kept the colonists from traveling west sooner if good land was becoming so scarce.
	For a piece of simple reading which will give a lot of information about pioneer families, read The Courage of Sarah Noble.
	View the films available at the film library at ESU I: "Mississippi River - Role in American History," #00303 "Pioneer Trails, Indian Lore, Bird Life," #00231
	Listen to the record, "Daniel Boone," #R46, available at the Middle School Media Center.
	View the transparency, "Settlement of U.S., 1770-1890," available at the Middle School Media Center.
America extended its boundary westward to the Pacific Ocean with various land acquisition.	View any of the following films available at the film library of ESU I: "Daniel Boone In America's History," #00135 "Lewis and Clark Journey," #00137 "Territorial Growth of the United States from 1819," #973/234 "Territories Formed, 1783-1812," #973/27 "Westward Expansion, 1804-44," #973/28 "United States, 1825," 973/29 "United States, 1840," #973/30 "Acquisition to 1848," #973/31 "United States, 1850-60," #973/34 "United States, 1861," #973/25 "Settlement of U.S. 1770-1890," #973.2/71 "Conflicting Claims to the West," #973.4/70 "War of 1812," #973.5/65 "Compromise of 1820," #973.5/158 "Causes of the War of 1812," #973.5/155 "War of 1812," #973.5/156 "Free and Slave States," #973.7/69 "Issues Dividing the North and South 18-19-1860," #973.7/159 "Comparison of the North and South - 1860," #973.7/160 "U.S. at the Outbreak of the Civil War 1861," #973.7/161

"Mississippi River - Role in American History," #00303
"Pioneer Community of the Midwest," #00138
"Pony Express in America's Growth," #00140
"Westward Movement III - Great Plains," #00334
"U. S. Expansion - Settling the West," #00216
"U. S. Expansion - California," #00214
"Gold Rush Days," #00139

Listen to the records and view the filmstrips available at the Middle School Media Center:
Westward Migration
"Into the Southwest," #L11
"The Oregon Country," #L12
"The Gold Rush," #L13
"Three Routes to Eldorado," #L14

View the filmstrip available at the Middle School Media Center:
"New Ways West," #305

Use any of the transparencies available at the Middle School Media Center:
"State Claims, 1783," #973/26

Plan and tell an imaginative story as though you were one of the individuals on the Lewis and Clark Expedition. Base the story on facts that are known to history.

On a small map of the United States draw the famous trails. The teacher should use the opaque projector or the overhead to direct the activity.

Prepare a mural showing families traveling in a wagon train.

Listen to a discussion about Sacajawea and make drawings of her experiences while traveling with Lewis and Clark.

Listen to reports which tell why New Orleans became such an important center of trade, and why U. S. had to buy land west of Mississippi from France.

Compare the ease of travel, danger from Indians, and length of trip on the Wilderness Road, Ohio Waterway, and the Oregon Trail.

Participate in a dramatization of one of these situations:
a. choosing a wagon master and trail scout.
b. buying supplies at Independence, Mo.
c. fording a river.
d. fun around the campfire.

Suggested Activities

Discuss some hypothetical situations and suggest outcomes which would have been different, e.g.

a. What might have happened if the Mississippi River had run west from the Cumberland Gap?
b. What if there were no Ohio River?
c. What if the lands of Ohio and Kentucky had been prairies?
d. What if the land west of the Appalachian had been desert?

Chapter 7 A New America Grows Up	Suggested Activities
The concept of slavery had long been a controversial issue in the United States	View any of the following films available at the film library of ESU I: "America's Heroes - Abraham Lincoln," #00068 "Lincoln's Last Day," #00343 Use any of the following transparencies available at the Middle School Media Center. "Civil War," #973.7/67 "Civil War - Virginia Campaigns," #973.7/68 "Free and Slave States," # 973.7/69 "Issues Dividing the North and South 1819-1860," #973.7/159 "U.S. at the Outbreak of the Civil War 1861," #973.7/162 "War Between the States 1861/1865," #973.7/229 "Settlement of the West, 1865-1890," #973.8/212 "U.S. Becomes a World Power 1865-1914," #973.72/222 Using yarn and a large map, show the route of the Underground Railroad. Read Thee, Hannah by Marguerite De Angeli. This could be recorded and listened to or read during Literature period if the student does not have the skills to read it. Listen to reports given on the lives of Harriet Tubman, Booker T. Washington, or George Washington Carver. Discuss the 13th, 14th and 15th Amendments to the Constitution. Sing or listen to records of Negro folksongs, and spirituals. Give possible reasons for "sad," "work," and "spiritual," songs.
The Civil War brought an end to slavery with the resulting reconstruction problems in the South.	Make a tape recording which will tell your classmates what it was like to be a soldier in the Civil War, pretending that you experienced it. Prepare a large map on which the major battles of the Civil War can be shown with a variety of colors. On an outline map, write the date of entry of each state into the union. Listen to a panel discussion of the ways the people in the North and South made their living. Present reasons why the people in these regions thought differently.

	Suggested Activities
	Observe students who stage a debate between Lincoln and Douglas. Orally prepare a list in class of the problems the South faced after the Civil War. Discuss the South today and how their way of life has changed. Listen to a teacher or another student read the Gettysburg address with the Battle Hymn of the Republic as background.
The development of our natural resources and industrial might rapidly change the U.S. from a struggling nation to one of the most powerful countries in the world.	Use a styrofoam ball or a globe to show trade with other countries of the world. Choose a mechanical device which is of interest to the student. Trace the history of that device from its origin to the present day. (Automobile and farm machinery manufacturers have information available upon request.) Other devices that might be reported on are the electric generator, the light bulb, gasoline engine and electric motor. Diagrams and overhead transparencies would be an effective way to share with the class the workings of the device. View any of the following films available from the Lincoln City Libraries in cooperation with the Nebraska Public Library Commission: "Auto-biography" "The Ballad of the Iron Horse" "Completion of the First Transcontinental Railroad" "The First Flight of the Wright Brothers" "Last of the Giants" View any of the filmstrips available from the Middle School Media Center: Evaluation of American Industry "Beginnings of American Industry," #J16 "Natural Resources and New Frontiers," #J17 "Creation of Modern Industrial America," #J18 "Social and Economic Development," #J19 U.S. As a World Leader "Entering the World Scene 1913," #N1 "Road to War, 1917," #N2 "War and the Treaty 1917-1919," #N3 "Aloof from World Affairs 1919-1933," #N4 "Gathering Storm," #N5 "World War II 1941-1945," #N6 "Burden of Responsibility 1945-1953," #N7 "Uneasy Coexistence 1953-1963," #N8
The United States emerged as a leader of the Free World after World War I and II.	Discuss the question of whether World War II could have been avoided if the United States would have joined the League of Nations. Listen to a debate in which the question of whether the nations not directly involved have a right to try to stop small wars before they become big, more serious ones.

	Suggested Activities
	Pinpoint on a map or globe the free world countries. Also designate the Communistic countries. Discuss why it is important for people who govern themselves to be informed and intelligent. Listen to reports on specific reasons that the U.S. is a leader in the Free World. Discuss how individual citizens contribute to the greatness of our country. Prepare a display illustrating the work of the United Nations. Materials are available through the United Nations organization.
One of the great accomplishments of our nations has been the exploration of space.	View any of the following filmstrips available at the Media Center at Middle School: Communism "What is Communism?" #J8 "Communism and Government," #J9 "Communism and Economies," #J10 "Communism and Human Rights," #J11 "Communism: Years of Struggle," #J12 "The American in the Cold War," #J13 "The Communist Party," #J14 "Communism: The Cold War," #J15 Prepare a display treating the various stages of the space program in the U.S. Listen to oral reports which give information about how space projects have given us better communications, and developed new items such as aluminum foil which we find helpful in our homes. A large variety of reports treating different aspects of the space program might be included. View any of the following films available from the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Eagle Has Landed: The Flight of Apollo 11" "Earth Satellites--Explorers of Outer Space" "Rockets: How They Work" "Students Track the Space Age"
Chapter 8 Changing America	Suggested Activities
Each year fewer Americans live on farms.	Mark off a square of 69 yards on each side in the school yard. This will be approximately an acre. Time a student who slowly walks from one end of the plot to the other to demonstrate the amount of time that it took for a farmer to plow one row thatwas an acre in length.

	Suggested Activities
	Take a field trip to a farm where one of the students live. Allow him to tell about the use made of the various farm machines and the production which the acres produce.
People are moving into town and out to the suburbs.	Draw a map of the city where you live. Indicate the central business district, the oldest residential and business area and the new residential areas. Discuss why the new residential areas are scattered over a wide area.
	Construct a population graph to show what has happened to population of Wayne since statistics have been recorded. Discuss that growth may be because fewer farmers can produce more food today than in early days.
	Prepare a display in the classroom which is made up of newspaper articles which discuss the local problems of Wayne. Include highway construction, utilities for new housing areas, and any other problems which demonstrate what happens to a city when there is population growth.
	Make a survey of the class to determine which students have always lived in the community and which have moved from a different community at least once. Graph the findings. Discuss why the families who have moved from another community have chosen to live in Wayne. As a followup, discuss what characteristics of a community are attractive to people who want to change locations.
	View any of the following films available at ESU I: "America: My Country," #503 "Cities are Different and Alike," #504 "Moving Goods in the Community," #505 "Moving People in the Community," #506 "People Who Work In Factories," #507 "People Who Work In Offices," #521

Chapter 10 New England	Suggested Activities
In the northern section of the Northeast, good soil is scarce because in the past the ice sheet carried away most of the top soil.	Become familiar with the topography of this area by touching a Tactual Raised-Relief Map. If a student in the classroom has visited the New England area invite him to share information and pictures with the other students. Prepare a classroom display of pictures and drawings which show the physical features of this region. Listen to reports on the relationship of physical geography to the livelihood of man. View any of the following filmstrips and listen to the accompanying records available at the Middle School Media Center: "United States: Regions, The Northeast," #K84 "North Atlantic Community, Political Foundations," #K78 "Cultural Background" #K79 "Geographic Features" #K80 "Economic Resources" #K81 "Economic Development" #K82 "World Outlook" #K83 View either of the following films available from the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Geological Work of Ice" "Men of Gloucester" View either of the following films available from ESU I: "Atlantic and Gulf Coastal Plains" #00199 "The Birth and Death of Mountains" #396 Out of styrofoam cut a model of the New England states. Mark the various states in different colors. As the study of the area progresses locate the points on the map and mark them with labels. After the regions have all been studied, the styrofoam should fit together like a large jigsaw puzzle. Listen to a recording of the book, The Return of Harvey Cheyne.
The Northeast as a whole has a wide variation in climate conditions, with short summers and long, cold winters in the north and long, warm summers in the southern section.	Make a climatic chart to illustrate the rainfall, growing season and temperature of this area. Use an overhead transparency at the beginning of this activity to illustrate this concept. Discuss why a short growing season makes life difficult for farmers.

	Suggested Activities
The presence of coal and iron in the southern part of the Northeastern states helped them to get an early start as a manufacturing center.	Prepare a large manufacturing time line for the New England States. Trace the course of a ship which carries iron ore from Duluth, Minnesota to the steel mills of Pennsylvania. Discuss how this source affects the New England states. Listen to reports given about the various methods of steel making. Prepare a classroom display of the natural resources and the finished products found in this area. Make drawings of the various types of industries that are based upon the natural resources of the Northeast.
Fish, timber and stone are the major resources of the northern section of the Northeastern States.	Discuss the importance of trees to the early settlers. Compare this with the need for wood today. Listen to reports about the importance of the sea food that is harvested from the ocean. Included in these reports might be the story of whaling today and long ago. Ask for samples of scrap lumber at the lumber yard which illustrate the most common specimens of wood that are found in the New England states. After identifying them, they should be mounted and labeled and displayed in the classroom. On a map of these states, label the places along the coast where the various types of fish are found.
The Northeastern area is a region of dense population, highly developed industry and trade, and extensive transportation though there are a great many ways of making a living within this region.	Discuss the reasons for this area becoming densely populated. Listen to reports on specific industries found in the Northeast. Prepare a product map. The student can be lead in this activity by the teacher using a transparency on the overhead. Prepare a graph which illustrates the density of population in the Northeast and compare it with population in other sections of the United States. Discuss why there is great diversification in industry in areas that are densely populated.
Though only a small fraction of the people of the Northeastern states now live on farms, agriculture is important and it provides much of the food f people in t ies of the Northeast.	Through a study of pictures, contrast the farms found in the Northeast with the farms in Nebraska. Prepare a farm product map. Display a collection of containers that held food that was packaged in the Northeast.

	Suggested Activities
Manufacturing had an early start in the Northeast, largely because of the unfavorable farming conditions and the presence of conditions favorable to the growth of manufacturing and industy.	Prepare orally a list of the necessary factors which must be met to have a successful industry. Include labor, transportation, materials, capital market, and power. Listen to a report about some article that is manufactured in the Northeast. Begin with the raw materials used and trace the process until the article is ready to be sold. Discuss how new factories help a region to grow.
The northern part of the Northeastern states is unusual as a manufacturing region because it lacks fuel and raw materials.	Prepare a display of textiles which are manufactured in the Northeast Indicate on a map that, even though raw materials are not close at hand, products can be manufactured with the help of good transportati Mark on the map where the raw products originate and where they emerge as finished products.

Chapter 11 The Middle Atlantic States	Suggested Activities
These states are a mixture of plains and highlands and are densely populated.	Out of styrofoam cut a model of the New England states. Mark the various states in different colors. As the study of the area progresses locate the points on the map and mark them with labels. Include the highlands and plains areas. After the regions have all been studied, the styrofoam should fit together with those of other areas like a large jigsaw puzzle. On a large road map of the Middle Atlantic States, find the main highways that serve the areas. Include the New York State Thruway, the Pennsylvania Turnpike, and the New Jersey Turnpike. Pick out routes from New York City to Buffalo, from Philadelphia to Pittsburgh and from New York City to Washington, D.C. If the student has difficulty with right and left, place a red mark on the right side of the map and place a green mark on the left side. Review the various routes used by early travelers to cross the Appalachians---the Wilderness Road to Kentucky; the Cumberland Road from Cumberland, Maryland, to Wheeling, West Virginia; the Pennsylvan Road from Philadelphia to Pittsburgh. Mark routes on a map. Learn by touching on the tactual, topographical relief map what the characteristics of the land are in this region.

	Suggested Activities
	Prepare a clay model showing two bodies of water which are connected by a canal. Relate this to the Chesapeake and Ohio Canal along the Potomac, the Pennsylvania Canal along both the Susquehanna and Juniata rivers in eastern Pennsylvania, and Kiskiminetas and Allegheny rivers in western Pennsylvania, and the Erie Canal along the Mohawk River to the plains bordering the Great Lakes.
	Listen to reports covering the following articles in the National Geographic Magazine: "From Sea to Shining Sea: A Cross Section of the United States Along Historic Route 40," July, 1961 "New York's New Main Street," November, 1956 "Waterway to Washington, the C & C Canal," March, 1960 Spend time talking about the pictures which illustrate these articles.
Five buroughs are populated by over half of the people in New York state. They make their living by manufacturing, trading and in finance.	Use a large map showing New York City and its surrounding area to show the five buroughs, the bodies of water and the bridges and tunnels which connect the various parts of the city. Good maps can be found in an atlas or in the July, 1964, National Geographic Magazine.
	View the film, "North American Regions - Appalachian Highlands," #00200, available at ESU I.
	View any of the following films available from the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "New York City" "New York, New York"
	If a student in the class has traveled to New York City, ask him to tell of his trip and to show pictures of points of interest there.
	Prepare a bulletin board display of pictures showing scenes of New York City.
	Ask someone from the community who has taken slides of New York City to come into the classroom to show them and talk about them.
The Middle Atlantic States rank second in manufacturing.	On the large styrofoam map of the Middle Atlantic States mark places where machinery is manufactured, and the places where chemicals and iron and steel are produced.
Much food has to be produced to feed the people of the Middle Atlantic States.	Prepare a map of the area showing places where certain food products are produced.
	Prepare a bulletin board display of food products of this area.

	Suggested Activities
There are many points of interest in the Middle Atlantic States.	Ask any student who has traveled in this area to talk about and show pictures of Niagara Falls, Fort Ticonderoga, Valley Forge, Gettysburg, Independence Hall in Philadelphia and other points of interest.

Chapter 12 The South	Suggested Activities
The South has a warm, moist climate that is excellent for raising some crops that cannot be raised farther north.	Out of styrofoam cut a model of the southern states. Mark the various states in different colors. As the study of the area progresses, locate the points on the map and mark them with labels. After the regions have all been studied, the styrofoam should fit together with those of other areas like a large jigsaw puzzle. Prepare a series of maps. On one mark the major topographic features--the coastal regions, the plains, the delta lowland, and the Ozark Mountains. On another map mark the rainfall amounts by using symbols. On a third map the various resources and the manufactured products of this region should be located and represented symbolically. Another map could show the cultural subregions of the area. Included should be the blacks, American Indians, Acadians, and the Spanish-speaking Americans. Another map that would be beneficial to include would show the different farming areas of the south--i.e., cotton belt, tobacco belt, citrus fruit and rice. Prepare a display of pictures found in magazines and newspapers of farm products of the South. Prepare a graph to illustrate the states that grow the most cotton, tobacco, citrus fruit, etc. If it is impossible for some students to do this, have the less able work with a partner who is capable. Ask any student who has traveled in this area to share his experiences and any pictures he might have with the rest of the class. Using small boxes, paper, and other simple sketch material, construct models of an early plantation. A good picture or illustration should be studied to give background for this activity. View either of the following films available at the ESU I film library: "Atlantic and Gulf Coastal Plains" #00199 "North American Regions--Appalachian Highlands" #00200 View the filmstrip and listen to the record available at the Middle School Media Center: "United States: Regions: The South," #K85
The climate is a factor that makes the South a desirable tourist resort in the	Write letters to some of the resorts of the area which are advertised in the Sunday paper. Ask for any brochures that they have available. Prepare a classroom display using these materials. Mark some of the famous resorts on the map of the South.

	Suggested Activities
The coastal plain has land suitable for farming and the Appalachian Mountain chain is an area of timber, mining and topography suitable for hydro electric generating plants.	On the tactual relief map touch the areas being studied. Discuss why this area lends itself to the lumbering, mining and hydro-electric generating it is noted for. Locate on the styrofoam map some of the large hydroelectric plants that are located on the Tennessee River. Prepare a display of naval stores. Include rosin, turpentine, tar, pitch. Listen to reports on the Tennessee Valley Authority. Include conservation practices in the South. Represent the minerals on a map to show where they are found. View the film, "The River," available at the Nebraska Public Library Commission. View the film, "Conservation and Our Forests," #445, available at the film library of ESU I.
The South produces phosphate for fertilizer, sulfur for chemicals, bauxite for aluminum, iron ore, coal and limestone for steel, trees for lumber and forest products and has extensive oil and natural gas fields.	Prepare a display for the classroom including items that are the natural resources of the South. Prepare a resource map. This might be done on outline maps or on transparencies. Listen to reports given by students about the resources of the South. Include the uses of the resources. Get scraps of lumber from the lumberyard. Label them and sort them according to whether they originated in the South or in the Northeast or Northwest. Discuss the distinguishing characteristics. Illustrate what use is made of the various kinds of lumber typically. View the films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Magic of Coal" "Powering of America's Progress" "Underground Adventure" View the film, "Conserving Our Mineral Resources Today," #00152, available at the film library of ESU I. Prepare a tape recording of ideas about what would happen if all of the oil resources and products in this area were to disappear suddenly. Prepare drawings of the ways that oil is moved from one place to another.

	Suggested Activities
The industries of the South are allied and supported by the natural resources and raw materials of the South.	Communicate with Chambers of Commerce in some of the large, well-known cities of the South. Ask them for information about how the people in their cities make a living. Prepare a classroom display of the materials received.

Chapter 13 The North Central States	Suggested Activities
The North Central States lie in the Central Lowland. It is an important farming region because of the gently rolling surface, rainfall, and good climate.	Prepare a chart which shows the rainfall, growing season and temperature of this region. On a map, label the different types of soil found. Out of styrofoam cut a model of the North Central States. Mark the various states in different colors. As the study of the area progresses, locate the points on the map and mark them with labels. After the regions have all been studied, the styrofoam should fit together with those of other areas like a large jigsaw puzzle. View any of the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "New Ways in Farming" "Nebraska--Land of Grass" "Nebraska: Where the Cornbelt Meets the Range" "Nebraskaland, Where the West Begins"
Several important rivers and the Great Lakes provide water transportation and water for the cities of the Middle West.	Locate the important rivers and lakes on a tactual, topographical relief map. Touch them and trace them. While looking at this map attempt to locate the same bodies of water on an outline map. Make transparencies during class discussions. Make a clay model of a canal and locks. Demonstrate how it operates. View any of the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Return to the River" "The River" "St. Lawrence Seaway" View the film, "Mississippi River--Role in American History," #00303, available at the film library of ESU I.

	Suggested Activities
Deposits of iron ore, coal, limestone, and some petroleum coupled with excellent farm land account for the Middle West being the largest farming and manufacturing region in the United States.	Make a product map of this area showing the various mineral deposits. Listen to a debate on the topic, "Which is more important, our soil or our mineral resources?"
The ways of making a living in this region are food production, working in factories and related occupations.	Prepare a classroom display of some of the food products processed in this area. Include how it is processed, the workers involved, and how the product is distributed. Role-play to illustrate the difference in price between what the farmer receives for his product and the price the consumer pays. Attempt to determine where the difference goes. Select an occupation typical of this region. Dramatize through role-playing what the occupation includes.
The North Central States have always been noted for the agricultural contributions to our country. It is also important for its manufacturing. This dual role has been brought about by the abundant resources and the need for machinery to carry on agriculture.	Prepare a classroom display of pictures of products manufactured in the North Central States. Listen to a discussion of why farming takes less manpower today than it did in the past. Prepare a bulletin board of drawings which illustrate the concept of "From farmer to consumer." Write to a farm implement company and request materials and catalogs on machinery and information on the history of the company. Visit a grain elevator to observe how grain is stored. Discuss with the manager how grain is moved in and out. Consider who buys the grain and for what purpose. On a large map of the world mark the many places that might buy wheat from a large elevator in Minneapolis. View the following film available at the film library of ESU I: "Food for the City--Wheat and Flour," #00292 Contact a car-producing company, such as Ford. Ask them for literature on their industry. Use any films that they have available for class use.

Chapter 14 The Mountain States	Suggested Activities
The West is an area of contrasts, especially in land forms and climate.	Touch the land forms on a tactual, topographical relief map. Prepare a classroom display of pictures that illustrate the land forms of the West. Materials from Chambers of Commerce, or postcards, or magazines would be good sources of pictures. Prepare a diorama to illustrate a specific land form. Prepare a climatic chart to illustrate the rainfall, growing season and temperatures of the area. View the following filmstrip and listen to the accompanying record which is available at the Middle School Media Center: "United States: Regions" The Plains, Mountains and Desert States #K87 View any of the following filmstrips available at the Middle School Media Center: "National Parks of the Midwest and Southwest" "Yellowstone National Park" View any of the following films, available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Canyon Country" "Geology of Yellowstone Park" "Spirit in the Earth" View any of the following films available at ESU I: "Glacier Park Studies" "North American Regions-Great Plains" #00202 "North American Regions-Intermountain Highlands" #00204 "North American Regions-Rocky Mountains" #00203
A semi-arid region, the Great Plains, has extremes in weather and length of growing season varies.	On a climatic chart, illustrate the rainfall, growing season and temperature. Prepare a relief map of this area to show elevation. Clay or salt and flour could be used. The tactual, topographical relief map of the United States could be used as a guide. Listen to a report on what the term "Dust Bowl" means. Discuss why parts of the Great Plains are dry while other places have enough rainfall for crops and still others for forests. Use the tactual, topographic relief map to illustrate this point.

	Suggested Activities
Located in several Great Plains states are large deposits of petroleum and other minerals.	On the large styrofoam model of these states, mark the mineral and petroleum deposits. Make graphs which will show the leading petroleum--producing states and the leading consumers. Obtain samples of crude oil and of the products made of crude oil. View the film, "Conserving Our Mineral Resources Today," available at the ESU I film library.
Water from wells, rivers, and dams is used for irrigation.	Listen to reports about the various kinds of irrigation systems. Drawings might be made of these for a classroom display. Pictures from magazines or brochures could also be used. Make a model of an irrigation ditch or of a field of irrigated crops. Listen to a report which tells who the first American settlers were to develop irrigation. Prepare drawings which show the three most common sources of water used to irrigate the desert. Include wells, rivers that flow through the area, and water that is diverted from a distant source. View the film, "Water: Life Blood of the West," available from the Lincoln City Library in cooperation with the Nebraska Public Library Commission.
The people who live in the Great Plains make their living by ranching, farming, oil production, mining and the basic types of work found in the cities.	Prepare a bulletin board which illustrates the different ways that people make a living in the Great Plains. View the film, "North American Regions--Great Plains," available at the ESU I film library. In music class, learn to sing some of the songs about these professions as they were during the early settlement years. This will provide a background about the culture. If a student in the class has visited this region, ask him to tell what he saw there. A contrast might be made in the current ranching process and the early cowboy days. Discuss why the farms of the Great Plains are larger than those in the Middle West.

	Suggested Activities
In some areas of the Great Plains, the people found that they had to make changes in their methods and ways of using the land in order to conserve the natural resources wisely.	Ask someone from the Soil Conservation Office or the County Agricultural Agent to speak to the class about some of the problems of farming in this area and the methods that are being used to prevent destruction of the land. Take a field trip to a farm where soil conservation is being practiced. Observe contour plowing, grassed waterways, and learn about crop selection as well as other practices. Prepare bulletin boards to illustrate methods of conservation. View any of the following films, available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Grasslands" "Look to the Land" "Yours is the Land" View the film, "Conserving Our Soil Today," available at the ESU I film library.
Copper, iron, zinc, uranium, coal, and petroleum are minerals found in the West.	On a styrofoam model of this group of states, locate and mark the petroleum deposits. View the film, "Virginia City," available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission. This will give background on early mining techniques and shows life in a mining town.
Phosphate and potash, two important minerals, are mined in the West.	Locate the deposits of phosphate and potash on the styrofoam map of this region. Listen to reports which explain the importance and the use made of these minerals.
The rivers furnish water for irrigation and electrical power and fish for food.	Listen to reports on the Hoover Dam and Roosevelt Dam. Locate them on maps.
Much of the United States gets lumber and lumber products from the West.	Prepare a bulletin board which shows the various uses of the timber of the West. Discuss the possibilities of exhausting our forest resources and the alternatives. Include the process of reforestations. Obtain samples of the types of lumber produced in the West from the lumber yard. Label them and prepare a display.

	Suggested Activities
Farming and ranching, mining, lumbering, fishing, manufacturing and tourism are ways that people of the West make a living.	Write to several Chambers of Commerce in the various regions of the West. Ask for brochures which deal with any of the ways people make a living. Prepare a display with the materials received. Review the various parts of the occupations listed. Role-play these occupations then move to a charade activity. Guess what profession is being dramatized.
Changes have been brought about in the West by man's work with irrigation and damming.	Prepare diagrams or three-dimensional aids to help visualize dams and irrigation systems.

Chapter 15 The Pacific States	Suggested Activities
The high ranges of mountains in the Pacific States influence the climate of this region: the interior side is not as wet and mild as the coastal side.	On a styrofoam model of this group of states mark the boundaries of the states and add other important information as it is studied. On the tactual, topographical relief map touch the land forms of this area. Discuss why two different climates are found with the mountain range as the dividing line.
Changes have been brought about in the Pacific states by man's work with irrigation and damming. Rivers also furnish electrical power and fish for food.	Prepare a transparency or a drawing on paper of the Columbia River System. Show the dams. Listen to reports on the life cycle of the salmon. Make a drawing or a diagram of a hydroelectric power plant such as is found at Grand Coulee Dam. Locate the Imperial Valley on a map. Discuss why it is the largest area of irrigated farm land in the United States.
In the dry farming region, which lies in the Columbia River basin, wheat is raised.	Review the dry farming method. Ask the County Agricultural Agent or someone from the Soil Conservation Office to come to class and describe the dry faming process.

	Suggested Activities
The Puget-Willamette Lowland lies between the Coast Ranges and the Cascades. The climate is suitable for raising fruits, nuts, flowers, vegetables, and producing dairy products and poultry products.	Prepare a classroom display of pictures which show the region being studied. If a student has visited this area ask him to share his information with the group.
These states produce a large amount of three kinds of lumber--pine, fir and redwood.	Obtain samples of the types of lumber produced from the lumber yard. Label them and prepare a display. Discuss the possibilities of exhausting our forest resources and the possible alternatives. Include the process of reforestation. Prepare a bulletin board which shows the various uses of the timber of the West.
Many industries have grown up in the Pacific States because of the movement of people to this area.	Construct a large time line covering the years 1769, when the first Spanish settlers arrived in California, to the present. Determine what events should be included because of their importance to this area. Listen to reports on the development of transportation and its importance to this area. Divide the class into six groups, all ability levels in all groups. Have each group be responsible for telling the rest about one factor that has helped to make California the successful state that it is. Include natural resources, transportation, power, water, tourism, and good leadership. View any of the following filmstrips from the Middle School Media Center: "National Park Service Areas of the Pacific Coast and Northwest," #283 "California," #286 View the following filmstrips and listen to the accompanying record from the Middle School Media Center: "The Pacific Northwest," #K88 "The Pacific Southwest," #K89 View any of the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Ghost Towns of the Gold Road" "The Redwoods" "Yosemite National Park"

	Suggested Activities
	View the filmstrip, "North American Regions--The Pacific Coast," #00205, available at the ESU I film library.
Chapter 16 Alaska	Suggested Activities
Alaska is a mountainous region with short summers except for the extreme southern section of the state.	To better understand the landforms of Alaska, touch the tactual, topographical relief map. Discuss the differences in elevation. Prepare a classroom display of pictures cut from travel brochures or magazines which show the important characteristics of Alaska. Prepare a climatic chart to illustrate the rainfall, growing season and temperature of this area. Cut a large styrofoam model of Alaska. Pinpoint the important characteristics as they are studied. Make salt and flour relief maps of this state. View "Geography of Alaska and Hawaii," #00119, available at the ESU I film library. View any of the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Alaska Cruise Style" "Alaska: the 49th State" "Alaska: Settling a New Frontier" "Letter from Alaska"
Timber, fish, minerals and potential water power are Alaska's resources.	Invite someone who has traveled in Alaska to come to speak to the class and show slides he might have. Stress the natural resources. Refer to several of the above films which present natural resources.
Alaska is important in our national defense.	Ask someone from the community who has spent time in Alaska while in the armed services to come to speak to the class.
Certain steps have to be taken to change an area from a territory to a state.	Role-play the six steps required for the change to be made from territory to state: a. Permission is given by Congress for the writing of a constitution. b. A proposed state constitution is written by delegates elected to a convention. c. Constitution is ratified by people in the territory. d. Congress passes an act of admission. e. People of the territory vote to accept or reject the terms of admission. f. President proclaims the admission of the new state.

Chapter 17

Hawaii	Suggested Activities
Hawaii was built up by volcanoes. The climate is mild the year around.	Out of styrofoam cut a large model of the island of Hawaii. Mark significant spots on them. Prepare a display of pictures of Hawaii for the classroom. Ask someone who has traveled to Hawaii to tell about the area and show slides if available. View any of the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Eruption of Kilauea" "Hawaii--the 50th State"
Hawaii's resources include fertile soil good for year around crops.	Listen to reports given by students which tell about raising pineapples, sugar cane, cattle, nuts, and any other crops of significance.
Ways of making a living in Hawaii include farming, tourism and national defense.	Write for travel brochures and for other information which can be supplied by Chambers of Commerce in Hawaii. Display these materials. Discuss them. Listen to records of Hawaiian records to better understand the culture.

SOCIAL STUDIES

Grade 6 - Canada and South America

Unit I - Canada

	Suggested Activities
Physical regions of Canada are often extensions of those of the United States.	On the tactual, topographic relief map or globe, touch the predominant physical features, such as mountains and bodies of water. Discuss the extension of them from Canada to the United States. Find the latitudes in which Canada and the United States are located. Relate why Europeans moving to North America might choose to settle here. If students have visited Canada, ask them to share with the class what they had to do to cross from the United States to Canada. Discuss why there are no fortifications between the two countries. Prepare a display of pictures of Canada and the United States which illustrate the similarities between the two countries. Show these on an opaque projector for class discussion. Travel agencies located in Canada happily provide classrooms with materials. Addresses are available through the Entertainment section of most newspapers.
A western highland area, the Great Plains, an eastern highland area and the Canadian Shield are the four major landforms that are in Canada.	Locate the four major areas on the tactual maps or globe. View the film, "U. S. and Canada--Cultural Region," #00198, available at the ESU I film library. View the films from the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Canada: Geography of the Americas" "Canada's Waterway West" View any of the following filmstrips available at the Middle School Media Center: "Canadian Regional Geography" Introduction to Canada's Geography, #225 Atlantic Region, #256 Canadian Shield, #257 Interior Plains, #258 Southern Ontario--Saint Lawrence Lowland, #259 Western Mountain Region, #260 View transparencies available at the Middle School Media Center, call numbers 970-972.

	Suggested Activities
One of Canada's great resources is the fresh water stored in lakes all over the country.	Locate the major lakes on a tactual map or globe of Canada. Touch them and trace them. View the following films available at the Lincoln City Library in cooperation with the Nebraska Public Library Commission: "Alberta Fishing is Fun" "Assignment Manitoba" "Autumn Salmon" "Canoeing the Big Country" "Downstream to the Sea" "East 1 West 1" "Free from Care" "Minawanamut (Ontario)" "Ontario A La Carte" "A Place of Refuge" "A Place to Be" "Speckled Trout Across Canada" "Spring Trout"
Canada's rivers flow in many directions to the sea.	On a large Canadian map, mark the routes of the rivers to reach the drainage area. Mark this with yarn, string, or magic markers. Prepare a bulletin board display of pictures of Canada which show the various lake areas.
There are several different climates in Canada, but much of it has continental climates.	Prepare an outline map which shows the July temperature averages. Prepare an outline map which shows the January temperature averages. Color the areas on an outline map which show the continental climates, the marine or maritime climate and the tundra climate.
Two types of natural vegetation found are trees and grasses.	On an outline map, designate which kinds of trees are located in the different areas of Canada. Get samples of lumber from the local lumber yard which come from Canadian trees. Label them, tell the use of each and display them in the classroom. View the films available at the Nebraska Library Commission: "Blessings on the Woods" "Assignment Manitoba"
Frenchmen settled southeastern Canada	On outline maps, mark the routes that traders took to reach the interior of Canada. An overhead transparency could serve as a guide to the students. View the film, "French Exploration in the New World," available at the ESU I film library.

	Suggested Activities
Britain and France brought their rivalry to the new World and involved the Indians in their wars.	Prepare a large time line showing the entire history of Canada. Start with 1497, at which time Cabot claimed Canada for England. Include the French explorers. Add to the time line as the important events in Canadian history are studied. Illustrate the time line. Listen to oral reports on the lives of the Marquis de Montcalm, and General Wolfe, about the Battle of Quebec, and a report of the fictionalized story Madeline Takes Command by Brill. After the reports on the various people who are important in the history of Canada, prepare riddles for other members of the class.
Fur traders and explorers pushed beyond the established settlements.	Prepare a map which shows Mackenzie's route. Listen to book reports on Syme's Alexander Mackenzie, Canadian Explorer and Tharp's Company of Adventurers.
Unification of Canada and Canadian self-government came with rebellion and strife.	On a large outline map color code the various areas of settlement at the time of the Dominion of Canada being created. After locating Ottawa on the map, listen to a report on how this city was chosen as the capital of Canada.
As gold was discovered and farmland was opened up, the Dominion of Canada grew westward and new provinces were added. They were linked together by railroad.	Prepare a transparency of the transcontinental railroad line that crossed Canada. This might also be done on outline maps. Show any of the following films, available at the Nebraska Public Library Commission: "City of Gold" (Yukon) "Echoes of Gold" (British Columbia) "West to the Mountains"
Canada is an independent, self-governing nation with democratic ideals, but is a monarchy.	
Canada ranks high in productivity.	Paint pictures that might be typical of scenes one would see in Canada, such as a seascape, fish under the sea, trawlers, paper mill, lumber production, harvest fields, grape arbors, mining apparatus and an old miner of past years panning for gold.

	Suggested Activities
The lowlands bordering the Great Lakes and the St. Lawrence River have more than half of the total population of Canada.	Locate this area on the tactual globe or map. Indicate on an outline map the St. Lawrence Seaway. Listen to oral reports on the St. Lawrence Seaway. Prepare a display of pictures in the classroom of the St. Lawrence Seaway. Ask anyone from the community who has traveled in this area to tell the class about it and show slides if they are available.
The Appalachin Highlands of the United States extend into Canada and end on the island of Newfoundland.	View any of the following films available at the Nebraska Public Library Commission: "Autumn Salmon" (New Brunswick) "Blessing on the Woods" (Nova Scotia) "Canada's Picture Province" (New Brunswick) "Marine Highway" (Nova Scotia) "Newfoundland Sings" "Newfoundland Trailer Trip" "Tides of Fundy" (Nova Scotia) "Tuna Angling" (Newfoundland) Prepare a large map for display in the classroom which shows these four provinces.
The Southern Great Plains Region is not only an area of grasslands, but has rapidly converted to mining and industry.	View any of the following films available at the Nebraska Public Library Commission: "Alberta Fishing is Fun" "Assignment Manitoba" "Camp-Sights Holiday" (Alberta) "Edmonton--Canada's Holiday City" "Saskatchewan Jubilee" "West to the Mountains" (Alberta) Prepare a large map for display in the classroom which shows the provinces of Manitoba, Saskatchewan, and Alberta. Color code them for easy recognition. Prepare a classroom display that illustrates all of the products that are produced in these provinces. It might be a display of cartons and packages that items are packaged in or it might be drawings placed on a map of the area.
The Western Cordillera is a northward continuation of the Rocky mountains and is a land of rugged terrain and fishing streams.	Mark the Western Cordillera provinces of the Yukon, British Columbia and Alberta on a large map which is displayed in the classroom. Distinquish them with colors. Get the feel of the rugged terrain of this area by touching a tactual map or globe. View any of the following films available at the Nebraska Public Library Commission: "Breath of Spring" (British Columbia)

	Suggested Activities
	"City of Gold" (Yukon) "East 1 West 1" (British Columbia) "Echoes of Gold" (British Columbia) "West to the Mountains" (Alberta) Invite someone who has spent time in this area to come to school and tell the class about it and show slides if they are available. Prepare a large drawing for classroom display which shows the steps used to make paper of wood.
The Northland	Designate this region on a large map which will be displayed in the classroom. Listen to oral reports of life in the tundra and the taiga.

Chapter 1 Land and Water	Suggested Activities
Landforms consist of roughlands and flatlands.	Using a tactual map of Latin America, touch the flatlands and the roughlands. Relate what colors are used to represent the landforms. Transfer the color coding of this map to the relief map either in the book or on a wall. On a styrofoam globe mark the lines of longitude and latitude with yarn or string. Pin the continent of South America on the globe.
Highlands of Middle America are made up chiefly of mountain ranges and the Mexican Plateau.	Listen to oral reports on the Andes Mountains. Discuss the highest peaks, length of mountain system, and the mineral resources there. Listen to reports from National Geographic: "Avalanche! 3,500 Peruvians Perish in Seven Minutes," June, 1962 "Costa Rica, Free of the Volcano's Veil," July, 1965 View the film, "Geography of South America--The Continent," available from the ESU I film library. "Earth--Volcanoes," #00159 and "Earthquake," #00285 might also be shown. View the film, "Earthquake in Ecuador," available at the Nebraska Public Library Commission. Throughout the study of Latin America prepare vocabulary lists. If the word is English that is new, look up the term in a dictionary for a definition. Prepare a drawing which illustrates the meaning. If the word is Spanish, put it on the Spanish list, define it and draw an illustration. A separate list for Indian words and illustrations might be made. These should be displayed in the classroom for all students to see.
Latin America's leading mineral resources are iron, copper, lead, zinc, and tin.	Prepare a display of pictures which show the mineral resources available in Latin America. Items that use these resources should also be in the classroom so that the students can handle them.
Soil is made up of rock particles and plant and animal refuse called humus. Soils differ because rocks differ and climates differ. Vegetation that helps to produce soil also [illegible]s.	Prepare a transparency which shows the various soil areas of Latin America. This can also be done on an outline map. Prepare a classroom display of the soils that are available in this locality. Put the samples in clear plastic bags. Discuss the difference in color and texture.

	Suggested Activities
	Use the transparencies that are available at the Middle School Media Center: "Typical Soil Profiles," 551.1/185 "Development of Soil," #551.3/95
There are numerous rivers in Latin America, used in many ways.	Locate these rivers on a tactual map or globe or on a wall map: San Juan, Guayas River, Amazon, Sao Francisco, Cauca and Magdalena, the Orinoco, the Parguay and Parana. Listen to oral reports of any of the above rivers. Find out the length of the rivers being studied. Cut a piece of twine to represent each one, allowing 1 inch for each hundred miles of river length. Compare the lengths. Show the transparency, "Water Cycle," #551/55, available at the Middle School Media Center.

Chapter 2 Climate and Vegetation	Suggested Activities
The climates south of the equator tend to repeat those north of the equator as though the equator were a mirror.	View the film, "Climate and the World We Live In," available at the Nebraska Library Commission.
There is a wide variety of vegetation to be found in Latin America.	Prepare a bulletin board display which shows the many kinds of natural vegetation to be found in Latin America. Prepare drawings which demonstrate that forest differences are due to differences in rainfall. Have a display of books in the classroom which contain pictures of the varieties of vegetation found in Latin America. National Geographic would be a good source to use, also.

Chapter 3 People of Middle America	Suggested Activities
Columbus' second trip to the new world took him to the island of Hispaniola. There they expected to find gold.	Locate the island of Hispaniola on a map of Middle America. Use a tactual map if it is available. Listen to a presentation by a group of students which gives the following information about Hispaniola: How large is it? What is the climate? What happened to the Indians that lived there? What kind of history did it have up until the revolution for independence?
The search for gold carried the explorers to the mainland.	On a map trace the route of Balboa. Discuss why he thought that the Isthmus of Panama was the South Sea. Locate and color the Yucatan Penninsula on an outline map. Prepare a display of National Geographics which have articles in them on this area. Include the issues from October, 1961, and January, 1959. View the film, "Early American Civilizations," available at the Nebraska Public Library Commission. View the films available at the ESU I film library: "Latin America--An Introduction" #00123 "Mexico's History" #00224 "Indians in the Americas" #449

Chapter 4 People of South America	Suggested Activities
Introduction	Have available several issues of National Geographic which have good pictures that would be helpful. Include the issues from January, 1966; May, 1964; February, 1961; March, 1955; June, 1957; and July, 1961.
The Inca Empire extended from Ecuador to northern Chile. Incas had a well-organized agricultural civilization.	Show the film, "The Ancient Peruvian," available at the Nebraska Public Library Commission. Display any picture books in the classroom that are available. Encourage the students to study the pictures. Prepare a bulletin board display of pictures that show the characteristics of the ancient Inca civilization.

	Suggested Activities
	Prepare a transparency showing the Inca area of South America. This may be done on desk outline maps if an overhead projector is not available.
The Portuguese settled in Brazil.	On the large, tactual map tie a string around at the point of the Line of Demarcation. Discuss what part of South America went to the Spanish and which went to Portugal.
Magellan and Cabot both sailed around the southern point of South America.	Locate and mark the routes of these two explorers on a large globe or map. Include their explorations of the Rio de la Plata.
	Read excerpts from Dana's Two Years Before the Mast to the class. Include especially the writings for November 9 which relates the difficulties of rounding the Horn and the problems with the weather in the spring.
The Spanish found gold and the Chibchas Indians in Columbia.	On a large outline map of South America mark the routes of all of the explorers. Use different colors for marking.
	If it is possible to obtain a copy of MacEoin's Colombia, Venezuela. Guianas, read pages 28 and 29. Discuss this material.

Chapter 5 From Dependence to Independence	Suggested Activities
Discontent in the colonies was brought on by several factors.	Prepare a list of reasons for the discontent in the colonies and display it. Drawings might be made to illustrate the problems.
	Listen to oral reports about Simon Bolivar, Jose San Martin, and Father Miquel Hidalgo, all of whom helped to free South America and Mexico from Spanish control.
Even though Latin America gained independence, they did not govern themselves.	Prepare a large bulletin board for the classroom which shows the process of local government in nineteenth-century Latin America. Include peons, haciendas, the cabildo and hacendados, and the cacique.
	Prepare a display for the classroom which includes a diagram of how the government in the United States functions and the government in a dictatorship.

Chapter 6 Culture Zones	Suggested Activities
Geographers have worked out a series of cultural zones for Latin America.	Prepare an outline map so that it shows the various cultural zones of Latin America. This might be done with an overhead and transparencies. Include the Tropical Plantation Zone, European Commercial Zone, Mestizo Zone, Indian Subsistence Zone, and Zone of Little Change. Prepare a classroom display which shows the plantation crops. These might be arranged by cultural zones. Have on display in the classroom any books which have pictures of the various cultural zones. National Geographic is a good source. View any of the following films available at the Nebraska Public Library Commission: "Mexico: Land and People" "Brazil: People of the Highlands" "Argentina, People of the Pampa" "The Amazon" View any of the following films available at the ESU I film library: "Mexico in the 70's, A City Family," #450 "Mexico in the 70's, Heritage and Progress," #451 "South America: Cartagena, a Colonial City," #454 "South America: Market Day," #456 "Brazil: People of the Frontier," #513

Chapter 7 Mexico, Next-Door Neighbor to the South	Suggested Activities
Tourism is one of Mexico's leading industries.	Request brochures and travel information about Mexico from a travel agency. Prepare a display for the classroom of these materials.
The relief features of the United States cross the border into Mexico.	On the tactual, topographical relief map of the United States, find what relief features continue into Mexico. Touch them and talk about them. On an outline map of southern United States and Mexico, color the landform features. View any of the films about Mexico listed in the previous section. Invite someone to come to the classroom who has either lived in or visited Mexico. Have them tell about this area and show slides if they are available.

	Suggested Activities
More than half of the Mexicans live on farms, and most of them are very poor.	Prepare a vegetation map which shows the vegetation found in Mexico. Prepare an outline map which shows the soil types found in Mexico. View the filmstrips available at the Middle School Media Center: "Mexico, Part I-Northern and Southern Regions" #241 "Mexico, Part II- Central and Gulf Coast Regions" #242 View the filmstrips and listen to the accompanying records available at the Middle School Media Center: "Mexico" Northern Mexico and the Central Highlands, #K90 Historical Triangle: Mexico City, Cuernavaca and Puebla, #K91 Taxco, A Spanish Colonial City, #K92 Southern Mexico, the Lowlands, and the Yucatan Peninsula, #K93
Redistribution of Mexican land has created hundreds of thousands of landowners where once there were only a few.	View the film, "Mexican Handcraft and Folk Art," #00124, available at the ESU I film library. Prepare a display of pictures that show the modern Mexico. View any of the following films available at the Nebraska Public Library Commission: "American Flamingo" "Arts and Crafts of Mexico" "A Boy of Mexico: Juan and His Donkey" "Mexico: Land and People"

Chapter 8 Central America	Suggested Activities
There are six independent countries and one colony in Central America - Guatemala, El Salcador, Honduras, Nicaragua, Costa Rica, and Panama. British Honduras is a colony.	Locate the six areas on a tactual, topographic, relief map. Touch them to better understand the landforms. Locate and color the six areas on an outline map. Also prepare transparencies. Trace the Inter-American Highway through Central America on an outline map or in an atlas. Mark it with string or chalk. Prepare a display of children's books on the Panama Canal. Include The First Book of the Panama Canal, by Markun's, Goethals and the Panama Canal, by Fast's, The Panama Canal, by Considine, Canals, by Boardman, Walter Reed, Doctor in Uniform, by Woods, Soldier Doctor: the Story of William Gorgas, by Judson, British Honduras in Story and Pictures, by Henry, Tico Bravo and Shark Hunter by Brown, and El Salvador in Story and Pictures by Donaldson.

	Suggested Activities
	View either of the two films available at the Nebraska Public Library Commission: "Guatemala" "The Panama Canal" Invite someone from the community who has visited or lived in this region to talk to the class and show slides if they are available. View the film, "Panama Canal," #00121 available at ESU I film library.
Chapter 9 The West Indies	Suggested Activities
The West Indies include Cuba, Haiti, the Dominican Republic, Barbados, Trinidad and Tobago, and Jamaica. Puerto Rico, a commonwealth, depends upon the United States.	Locate these island countries on a tactual, topographic, relief map. Touch them to understand the landforms. Listen to reports about any of the islands. Include the struggle for independence by Cuba. The naval base, Guatanomo, would be another point of interest. March, 1961 National Geographic includes a report with pictures of Guatanomo. Report on Henry's The Dominican Republic in Story and Pictures. National Geographic issues from December, 1965 and February, 1956 are good sources for reports on Hispaniola. December, 1962 National Geographic includes an article on Puerto Rico. View the following film available at the Nebraska Public Library Commission: "Puerto Rico--Island in the Sun."
Chapter 10 Northern South America	Suggested Activities
Northern South America includes Colombia, Venezuela, Guyana, Surinam, and French Guiana. The area is rich in minerals.	Locate these areas on the tactual, topographic relief map. Touch them to learn about landforms. Find and color these countries on outline desks or prepare transparencies to be used on the overhead. Prepare a display of books that have pictures of this area. Study the pictures and draw conclusions from them. Have available books that have pictures of these countries. Include MacEoin's Colombia, Venezuela, Guianas and National Geographics

	Suggested Activities
	View any of the following films available at ESU I film library: "Geography of South America: Five Northern Countries," #514 "South America: Cartagena a Colonial City," #454 "South America: Life in the City," #455 "South America: Market Day," #456 View the following film available at the Nebraska Public Library Commission: "Colombia and Venezuela." Invite anyone in the community who has either lived or visited this area to talk about it and to show slides if they are available.
Chapter 11 Three Inca Countries	Suggested Activities
The three countries in this area are Ecuador, Peru, and Bolivia. It is an area difficult to unify because of the differences in economic standards and the landforms.	Carry out any map activities here that have been helpful when studying any of the other South American countries. Prepare displays of pictures and books for the classroom which show what life is like in these countries. Study the pictures and draw conclusions from them. View the following film available at the Nebraska Public Library Commission: "Peru: People of the Andes."
Chapter 12 Chile	Suggested Activities
Chile, a country as long as the United States from east to west, is divided into three regions, dependent upon climate and latitude.	Carry out any of the activities used effectively in the study of the foregoing areas of South America.

Chapter 13 Argentina	Suggested Activities
Because Argentina is such a large country, it includes many climates which divide it into four major culture zones.	Use any of the foregoing map activities. Prepare a large product map to be used for classroom display. Use any filmstrips or films that are available.

Chapter 14 Brazil	Suggested Activities
Brazil is the fifth-largest country in the world and is the largest area in South America.	Use any of the activities used with previous chapters. View the film, "Brazil: People of the Frontier," #513. View the film, "Brazil: People of the Highlands," available at the Nebraska Public Library Commission.

Chapter 15 Men and Machines in Latin America	Suggested Activities
Industrialization in Latin America was difficult to achieve.	View any of the filmstrips available at the Middle School Media Center: "Children of Latin America" Vacation on the Pampas #219 Chico Learns to Read #220 Jose Harvests Bananas #221 Market Day at Cusco #222 Fiesta Day #223 The Silver Studded Belt #224

BIBLIOGRAPHY

Alpren, Morten, ed., The Subject Curriculum: Grades K-12. Columbus, Ohio, Charles E. Merrill Books, Inc. 1967.

Critchley, Macdonald, Developmental Dyslexia. London, William Heinemann Medical Books Limited, 1966.

Dronich, Doreen, They Too Can Succeed. San Rafael, California, Academic Therapy Publications, 1969.

Glennon, Weaver, Riedesel, Mueller, Dutton, Armstrong, Suydam, Anderson, Essential Modern Mathematics, Books 1-4. Boston, Massachusetts, Ginn and Company, 1970.

Harnstock, Elizabeth G., Teaching Montessori In the Home, The School Years. New York, Random House, 1971.

Hartung, Von Engen, Gibb, Stochl, Knowles and Walch, Seeing Through Arithmetic, Books 1-4. Glenview, Illinois, Scott, Foresman and Company, 1966.

Howes, Virgil M., Individualized Instruction in Science and Mathematics. London, Macmillan Company, 1970.

Johnson, Myklebust, Learning Disabilities, Educational Principles and Practices. New York and London, Grune and Stratton, 1967.

Kennedy, Leonard M., Models For Mathematics in the Elementary School. Belmont, California, Wadsworth Publishing Company, Inc., 1967.

May, Lola June, Teaching Mathematics In the Elementary School. New York, The Free Press, 1970.

National Council of Teachers of Mathematics. Experiences in Mathematical Ideas. Volume 1 and 2, 1970.

Platts, Mary E., ed. Plus, A Handbook For Teachers of Elementary Arithmetic. Stevensville, Michigan, Educational Service, Inc., 1964.

Shedd, Charles L., Structural Approach to Mathematics. Berea, Kentucky, Reading Research Institute, 1970.

State of Nebraska Department of Education. Activity-Oriented Math Materials. 1972.

Valett, Robert E., Ed. D., The Remediation of Learning Disabilities, A Handbook of Psychoeducational Resource Programs. Belmont, California, Fearon Publishers, 1967.

Periodicals

Academic Therapy. San Rafael, California, Academic Therapy Publications.

The Arithmetic Teacher.

The Croft Teacher's Service, "Models For Teaching." New London, Connecticut, Croft Educational Services, Inc., 1971-1972.

Instructional Objectives Exchange, Mathematics K-3 and 4-6. Los Angeles, California, Instructional Objectives Exchange, 1970.

Journal of Learning Disabilities. Volumes 2, 3, and 4.

The Mathematics Teacher

Selected Papers on Learning Disabilities - 4th, 5th, and 6th Annual Conference, John I. Arena, editor. San Rafael, California, Academic Therapy Publications, 1969.

Unpublished Materials

Prescriptive Materials Laboratory, Educational Center, Olathe, Kansas.