DOCUMENT RESUME

ED 125 951 SO 009 232

TITLE The Utica Plan for "Project Search" (Kindergarten through Twelfth Grade), Volume I.

INSTITUTION General Learning Corp., Washington, D.C.; Utica City School District, N.Y.

PUB DATE [Aug 72]

NOTE 199p.; For related documents, see ED 120 075 and SO 009 231

EDRS PRICE MF-$0.83 HC-$10.03 Plus Postage.

DESCRIPTORS Course Descriptions; *Curriculum Development; Educational Programs; Elementary Secondary Education; *Humanistic Education; Humanities; *Interdisciplinary Approach; *Program Descriptions; Social Studies; *Unified Studies Programs

IDENTIFIERS *Project SEARCH

ABSTRACT

This document is a report on the first phase of an interdisciplinary K-12 curriculum development for Utica, New York schools. Project SEARCH is a unified approach to a humanistic curriculum which focuses on man and his relation to others and the world. The curriculum model contains 10 parts which relate man to his self-image, family, community, physical environment, work, play, art, conflicts, aspirations and fears, and gods. The report contains eight sections. Part one briefly describes the project. Part two outlines the curriculum model. Part three, the major section, lists the various components of the curriculum. Part four theoretically describes how the concepts in the curriculum flow from grade to grade. Part five describes several aids used in the curriculum development process. Part six describes the procedures for developing the study units in each component. Part seven describes the study units developed for the component dealing with man and the physical environment. Finally, part eight is a series of recommendations for implementing the curriculum. (DE)

The Utica Plan

for

PROJECT SEARCH
(Kindergarten through Twelfth Grade)

Volume I

Developed by
General Learning Corporation
Working with Eighty Teachers from the
Public and Parochial Schools of
Utica, New York

July 5 through August 11, 1972

Educational Services Division
General Learning Corporation
2139 Wisconsin Avenue, N. W.
Washington, D. C. 20007

TABLE OF CONTENTS

General Learning Corporation Team
Working on Project Search, Utica, New York

Miss Brenda Bryant

Miss Renee Cherow

Dr. Robert Kohls, Project Leader

Dr. Joseph Lipson

Mrs. Jesse Wright

1. BRIEF DESCRIPTION OF PROJECT SEARCH AND THE SUMMER 1972 WORKSHOP

Utica was chosen as one of six sites in the State of New York to implement a model program of in-service training and curriculum redesign known as Project Search. The Utica City School District and the St. Francis de Sales Parochial School of Utica are cooperating in this on-going venture. July 1, 1972 was set as the start-up date, and this document is a report on the first phase of that project.

Project Search has as its goal the creation of a humanistic curriculum -- one built around man and one aimed at serving man's needs. The curriculum is to be different from what has preceded it in that it will no longer be fragmented into the traditional subject-matter divisions. Instead, it will develop a unified approach which will carry the same human concerns from kindergarten through grade twelve.

It is to focus on four specific objectives:

- Reasoning

  Involving such skills as:

  - Analyzing
  - Synthesizing
  - Induction
  - Deduction
  - Inference
  - Intuition

- Valuing

  Involving such skills as:

  - Making choices
  - Identifying alternatives
  - Being aware of consequences
  - Making decisions
  - Re-evaluating

- Affective Development

  Developing:

  - Feelings
  - Interests
  - Attitudes
  - Appreciation

- Processing

  Involving:

  - Behavior
  - Interpretation
  - Extrapolation
  - Generalizing
  - Coordination

Further, it must allow sufficient flexibility for students with differing abilities and interests to develop in ways most compatible with their own individual needs.

Project Search was not intended to be adopted across-the-board in all of Utica's schools overnight. Rather, a four-year plan was proposed for the development and dissemination of this new, human-centered approach. The time projection is:

- School Year 1972-73

  Approximately 80 elementary and high school teachers are to

be selected to take part in a summer workshop to design the new curriculum units around one strand of the adopted model. A Project Coordinator is to be identified, and the 80 core teachers are to be oriented to their task. Throughout the school year the units for the remaining strands are to be developed. Performance-based objectives and a system of evaluation will be developed.

- School Year 1973-74

A K-8 pilot school (Seymour) will implement the program as designed during the entire first year. The program will be revised and upgraded constantly, and the development of additional materials will continue. Training for all elementary and junior high teachers will be provided and they will all receive the materials which have been produced. The pilot high school staff will prepare to implement the program next year.

- School Year 1974-75

The pilot high school will implement the program as designed during the two previous years. A second K-8 pilot school will implement the program. All teachers in the system will be trained to participate in Project Search.

- School Year 1975-76

All twenty-two schools in the Utica City School District will implement Project Search.

To assist Utica in initiating this new program, the Educational Services Division of General Learning Corporation was called in to provide leadership and direction. General Learning Corporation sent a team of five curriculum specialists to Utica to help develop the model and working process, and to serve as specialists in presenting a workshop where 80 teachers would design curriculum units at each grade level from kindergarten through twelfth grade, for one strand of the new model.

The major tasks carried out by the team of General Learning consultants were:

- To work with a group of ten teachers and administrators* (known as the Workshop Planning Committee) to develop the model (see Section 2.), its component strands (Section 3.),and all its major concepts;
- To complete an analysis of the current subject matter coverage on all grade levels and to insure that all its aspects could be subsumed within the new model;
- To plan and implement a workshop for 80 teachers and to orient them to the characteristics of a humanistic curriculum, the model, and its underlying concepts (Section 5.);

---

* Mrs. Diane Abbey, Mr. Henry Albrecht, Mr. Louis Cizza, Miss Bernadette Eichler (~~Supervisor of Curriculum for the Elementary Schools~~), Dr. Angela Elefante (Acting Coordinator of Project Search), Mrs. Dolores Freed (Language Development Coordinator), Mr. Senatro La Bella (~~Supervisor of Curriculum for the High Schools~~), Miss Patricia MacNamara, Sister Dorothy Root (Principal of St. Francis de Sales Elementary School and representative of the Parochial Schools of Utica), and Mr. Peter Sabino (Principal of Seymour Elementary and Junior High School which will be the pilot school for Project Search).

elefante
correct title on insert for Eichler LaBella

- To develop the process by which the curriculum units would be developed (Section 6.), and to train the Workshop participants to be able to develop the units around one selected strand of the model (Section 7, Volumes II and III.) from kindergarten through twelfth grade; and
- To indicate the curriculum coverage which should fall under each strand for each grade level (Section 3 and 4.).

The Project Leader of the General Learning team arrived in Utica on July 5th. He met immediately with the Project Search Standing Committee and gave them an overview of the process to be used to initiate Project Search and plan the Summer Curriculum Workshop. He was soon joined by three other consultants and the planning process began immediately.

The week of July 10th was spent in developing the model and its component strands and planning the Workshop with the Workshop Planning Committee. During the week of July 17th, materials and resources for the Workshop itself were produced.

The three-week Workshop began July 24th. The first week was spent in orienting the 80 participants to the attitudes, understandings, behaviors, and values appropriate to a humanistic curriculum and in familiarizing them with the model, its strands, and concepts.

The second and third weeks of the Workshop were largely taken up with presenting the procedure for developing the actual curriculum units around the

strand, Man in His Physical Environment. The last two days were reserved for refining the units already produced, planning for related needs (See Section 8.), and briefing participants on plans for the further development of Project Search throughout the coming year (Section 8.5).

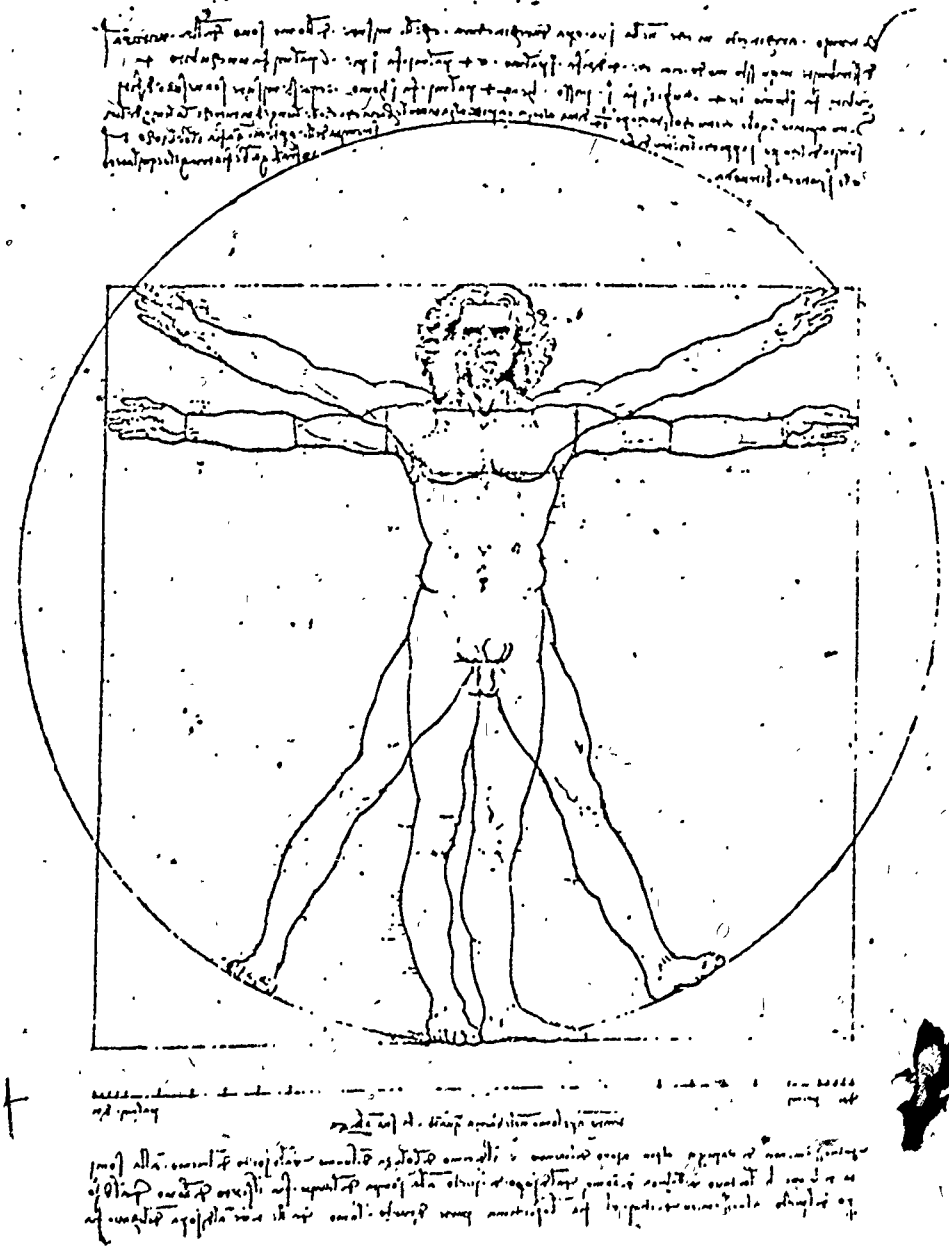
The week of August 14th was spent in gathering materials, writing, reworking, editing, typing, and printing the final report.

The model, the strand coverage, the process for developing the curriculum units, and the units themselves were specifically designed for Utica -- and all within an amazingly short span of time. They were not pieced together from borrowed ideas developed five years ago in distant school systems. In this process, the General Learning consultants worked as a team, first very closely with the Workshop Planning Committee and later with the 80 Workshop participants. Here, again, the evolutionary process utilized was new to the administrators most closely connected with Project Search, but it resulted in the creation of a product which General Learning Corporation is pleased to present in this document. Even more, it resulted in the preparation of nearly 80 teachers in the Utica City School System and in the St. Francis de Sales School, who now have the capability to prepare acceptable curriculum units for any strand in the Man and His World model, either individually or in a group.

The section which follows presents the Model in graphic form, showing the genesis of its development.

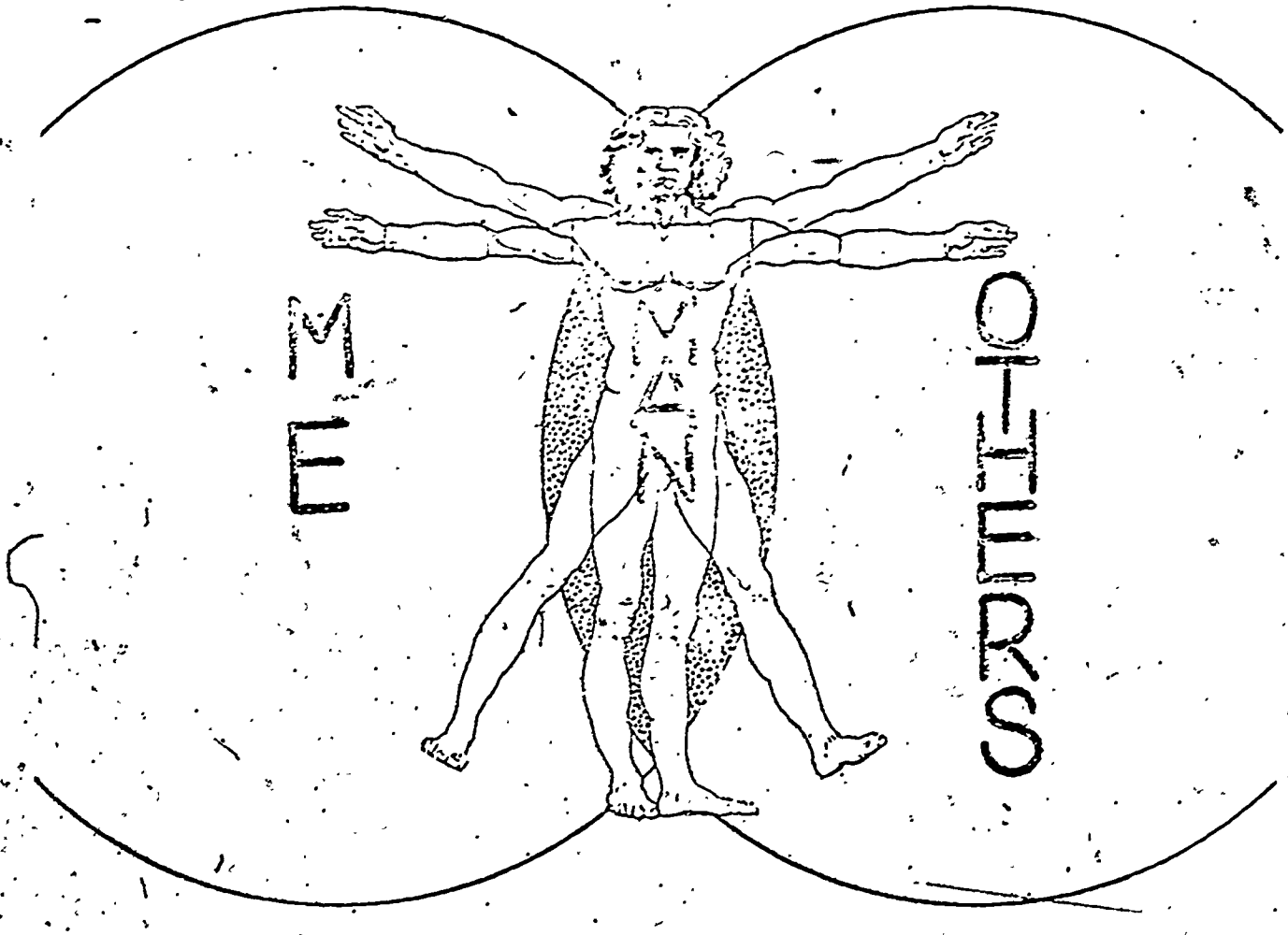
2. PRESENTATION OF THE MODEL: MAN AND HIS WORLD

The symbolism for our model -- Man and His World -- begins with a page out of Leonardo da Vinci's notebook. We have borrowed Leonardo's man as our central image because it depicts man reaching out beyond himself, searching, discovering his potential. In addition, Leonardo symbolizes for all of us a humanist par excellence in one of man's most humanistic ages.



Here Leonardo's man has been superimposed over two overlapping circles to show that for each of us, Man represents:

1. ME -- the unique individual, my Self;
2. OTHERS -- as I relate to and interact with other human beings, and in the image I develop of other individuals and of other groups;
3. MANKIND -- as I try to answer the questions "Who is Man?" and "What is his purpose?" and as I realize that I am part of Mankind.



- AWARENESS
- FEELINGS
- ATTITUDES
- IDEAS
- EXPRESSION
- ASPIRATION
- PRESERVATION

These are some of the characteristics which make man human and distinguish him from the other creatures. We would like, in a humanistic curriculum, to develop these attributes further at the same time that we teach knowledge and facts.

SOCIETY
WORLD
UNIVERSE
PRESERVATION
ASSIMILATION
EXPRESSION
IDEALS
ATTITUDES
TIME

In the composite diagram on the preceding page (which looks amazingly like a 13th century depiction of the ordered universe) we see Leonardo's man again, reaching beyond himself -- a man who is aware he represents me, mankind, and others, a man with awareness, feelings, attitudes, and all the other characteristics we call human.

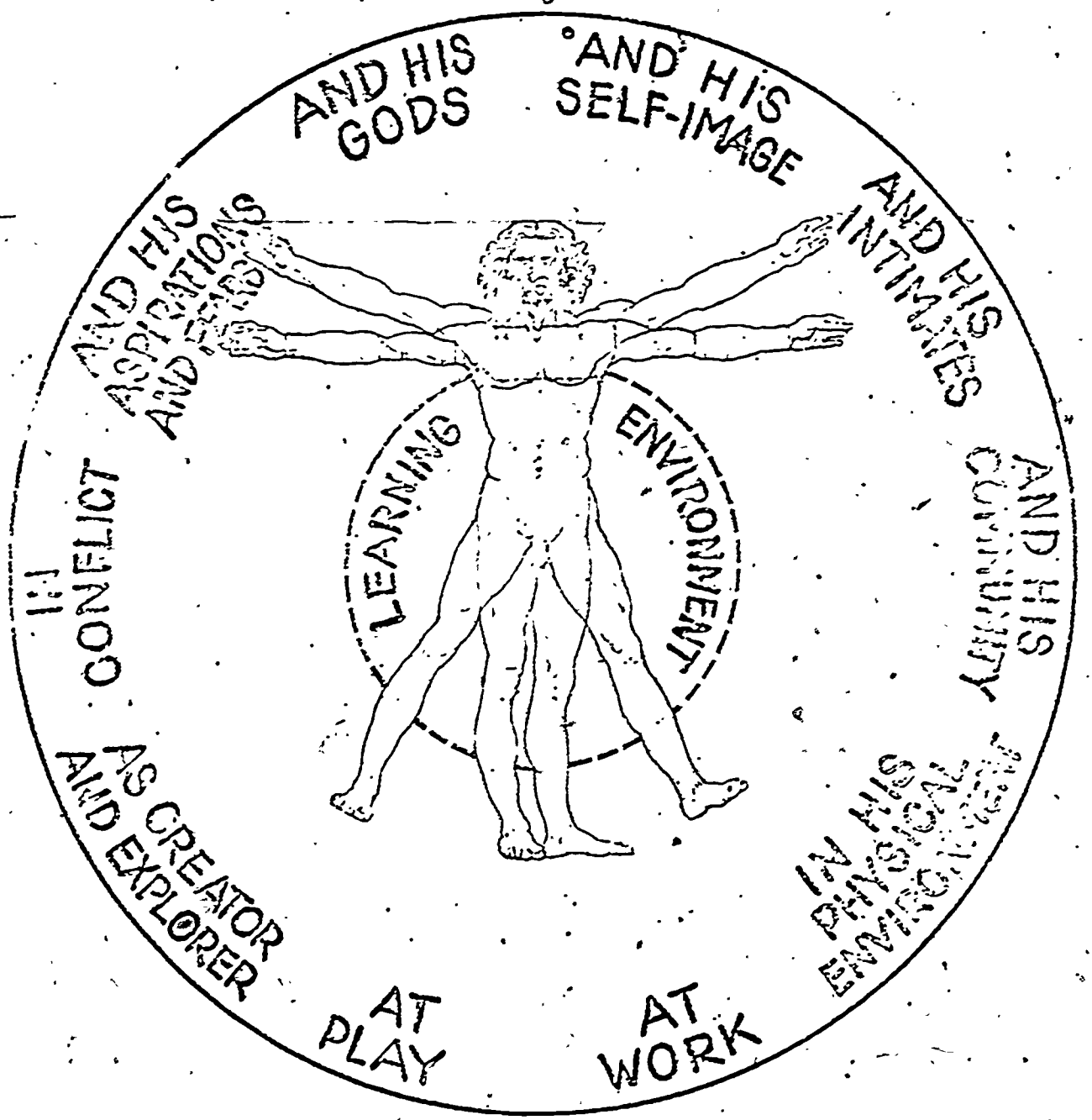
This diagram, for example, shows that awareness relates to oneself and others. The diagram further shows that man lives and functions in an ever-expanding society, and in the world, and (as he is only beginning to realize fully) in the universe. The addition of Time on our chart signifies man's historical orientation; Space represents his geographic orientation.

This complex, composite idea which we have developed of Man, up to this point, must now all be incorporated in the reader's mind into the single symbol of Leonardo's man as used in the illustration of our model -- Man and His World -- shown on the following page.

Here, Man is placed in his environment. This becomes our "Model," and the clock-points surrounding man become the "Strands" of our model. These strands, as indicated by the coverage suggested in the next section of this report, appear to be inclusive enough to encompass all of man's activities, thoughts, and yearnings.

We are suggesting starting with the strand Man and His Self-Image (the "Me" on our first chart), then moving to the strand Man and His Intimates (the first extension outside the self -- to family, loved ones, and intimate friends), then to Man and His Community (ever-expanding in scope until it takes in the whole world), and on around the circle to consider the remaining strands.

MAN...



MODEL: MAN AND HIS WORLD

The Learning Environment, enclosed with a broken line in the center of the diagram, represents those basic skills which, in their most rudimentary form, are necessary to begin with and which are equally applicable to all the strands. These certainly include sensory perception, reading skills, study skills, and mathematical skills.

3. COVERAGE BY STRAND FOR THE MAN AND HIS WORLD MODEL

The coverage of the ten strands of our model is as complete as the short time expended upon it would allow. It obviously is not fully exhaustive and never could be, for every entry sparks many more. At best it is merely suggestive. It is complete enough, however, to demonstrate that everything in man's world logically fits somewhere into this model.

This is the second major revision that the coverage has undergone, and it should be constantly upgraded throughout the lifetime of Project Search.

It is necessary to explain where three major sub-topics (which may not be immediately apparent) have been placed in this model. Transportation has been included in Man In His Physical Environment since it is the means by which man transverses his physical environment; communication is in the strand Man In His Community since it concerns the way man expresses himself to others; geographic areas of the world is also in Man In His Community because it represents man's larger "community."

It should also be pointed out that our coverage list indiscriminantly combines topics (of a more factual nature) with issues (of a more personal, value-colored variety). This is part of its richness, and we suggest this is also a good direction for the humanistic curriculum to take.

The suggested grade level assignments are just that -- suggestions. With imagination (certainly a human quality) and understanding (equally human) nearly every topic can be considered at every level. No one can restrict a creative teacher and no one ought to restrict inquisitive students to follow a tightly inflexible, pre-ordained curriculum.

While many topics are earmarked for the upper grades, the basic underlying concepts necessary for an understanding of the full-blown topic must be developed in the early grades.

This curriculum, with its ten strands, will, when all the strands are fully developed, attempt to eliminate the traditional subject matter partitioning of education. but it will still be possible for those teachers with a conservative bent to force Man and His World into the old mold. In fact, all of us may try to do so simply because it is what we are most familiar with. Special attention must therefore be paid not to let this happen for such an approach would be antithetical to a truly humanistic direction.

Because it was the strand for which units were to be prepared in the summer workshops, the coverage of the Man In His Physical Environment strand has been refined and developed to a greater degree than the others. In the future the remaining strands should be refined to this same degree.

The outline which follows shows the basic organization of the Man In His Physical Environment strand and the breakout of its subdivisions.

New Ordering of Coverage in
MAN IN HIS PHYSICAL ENVIRONMENT Strand

- MAN'S EXPANDING HORIZONS
  - Home as an introduction to his physical environment
  - Community as an introduction to his physical environment
    - -- Natural communities
    - -- The shaped environment
  - Further expansion of man's physical environment
- SPATIAL-TEMPORAL ORIENTATION
  - Sense of space
  - Sense of time
- NATURAL PHENOMENA
  - The contour of the universe
    - -- Heavenly bodies
    - -- Land masses
    - -- Water masses
    - -- Weather/climate
  - Natural resources
  - Natural laws/physics

- Man's biological neighbors
  - -- Animals
  - -- Plants

- TAMING THE ENVIRONMENT
  - Primal industries
    - -- Agriculture
    - -- Hunting/trapping
    - -- Fishing
  - Tools
  - Sources of energy
  - Man-made products
  - Transportation
    - -- Men
    - -- Materials
  - Natural disasters

- SURVIVAL OF THE UNIVERSE: ECOLOGY

- PHILOSOPHICAL CONCEPTS OF THE UNIVERSE

Coverage by Strand for

MAN AND HIS WORLD MODEL

MAN...

- And His Self-Image
- And His Intimates
- And His Community
- In His Physical Environment
- At Work
- At Play
- As Creator and Explorer
- In Conflict
- And His Aspirations and Fears
- And His Gods

+ The Learning Environment

SECOND DRAFT
Developed by General Learning Corporation for
PROJECT SEARCH, UTICA CITY SCHOOL DISTRICT
Utica, New York

MAN AND HIS SELF-IMAGE

- WHO AM I?

I am what I think I am I am what others think I am I am what I think others think I am	K-12
Self-development	
Sensory perception/sense organs (K-2)	
Feelings	
Self-awareness	
Attitudes	
Ideas	
Self-expression	K-12
Aspiration (H.S.)	
Self-preservation	
Ideals/goals (K-1)	
Impulses and biological drives (K-1)	
Awareness of our body and its functions	
Knowing body parts	
Physical attributes	
Coordination	
Anatomy of human body (and functions of various parts)	5
Heart	
Lungs	
Liver	
etc.	
Body systems	
Skeletal	
Muscular	
Circulatory	
Respiratory	J.H.-H.S.
Nervous	
Reproductive	
Waste	
His present self-image (and his developing self-image)	K-12

- WHERE DID I COME FROM?

Writing an autobiography	3-12
Family tree	J.H.
Genetics	H.S.
Heredity/environment argument	H.S.
Our cultural heritage Judeo-Christian tradition (5-H.S.) Graeco-Roman tradition Renaissance ("Man as the measure of all things") Our own ethnic identity	H.S.
Ethnocentrism (that makes man judge others by his own "rules"--even though they don't apply to the other culture, and that makes him consider his own rules as absolutes)	H.S.
Races of mankind Mongoloid Negroid Caucasoid	J.H.-H.S.

- WHY AM I HERE?

Uniqueness of self Skills Talents Interests Experiences Potential	K-12
Unique relationships with others	K-12
Stress given uniqueness of the individual in modern Western society	H.S.

- WHERE AM I GOING?

Man's search for self The problem of self-awareness The problem of developing a respectable opinion of one's self	K-12

His revolt in efforts towards personal freedom	
Freedom to make a choice	K-12
Freedom to accept responsibility and consequences of choices	H.S.
Freedom from pressures of family, school, church (institutional pressures)	
Freedom from pressures of peer group	J.H.
Rights and privileges	
Goals	
Work goals	
Life goals	H.S.
With reasons for choices	
Development of his own personality	K-12
Development of his own life style	H.S.
Heroes/anti-heroes	
Whom do I idolize?	K-12
And pattern my life after?	H.S.
Immigrants	
Some contributions from first-generation Americans	J.H.-H.S.
His projected image	
The self he wants to present to others	H.S.
The self he would most like to develop into	
His confrontation with self	
His acceptance of self	
Security in the idea of roots (family tree, coat-of-arms)	
Race (as an inheritor of past cultural greatness) (K-12)	J.H.-H.S.
Part of a continuum/memory function	
Seeing his own personal worth	
Realizing what he does well (strengths)	
How nearly "normal" he is, i.e., how similar to the norm (H.S.)	
Degree of "success" in competitive world	K-12
Considering himself to be a contributing member of his group	

His evasion of self (withdrawal/denial) Refuge in race, nationality, or various social, political, and ideological labels		H.S.
Mastery of skill areas (see Learning Environment section) Reading Writing Spelling Speaking Mathematics Thinking etc.	as a means of giving a child a positive or negative self-image	1-12
Reading for content Reading for enjoyment	as examples of reading skills of benefit to the individual (and his self-image)	3-12
Math applications: Develop confidence through success in problem-solving and in the handling of mathematical processes Developing skills in handling mathematical operations is more important than memorizing facts		K-12
Ability to express one's self orally and in writing (as it affects self-image)		3-12
Painting, creative writing, poetry, etc. as a means of self-expression		J.H.-H.S.
Civil rights Leaders in the fight for human rights and human dignity		K-12
Accepting responsibility (as it builds one's self-image)		K-12
Identification with the national spirit of a country		J.H.-H.S.

PROBLEMS OF SELF-PRESERVATION

Mental illness Feelings of rejection		H.S.

Caring for his body	
Sanitation	
Cleanliness	
Sleep (sleep as a renewer)	
Posture	
Exercise	K-12
Elimination	
Personal hygiene	
Toothbrushing	
etc.	
Dieting	J.H.-H.S.
Health (organic) foods	
Caring for himself	
Assuming responsibility (K-12)	
Means of support	
Know-how	
Safety	H.S.
Independence	
Interdependence	
etc.	
Coping with stress	9-12
Coping with change	
Kinds of illnesses	
Deficiency	
Degenerative	
Contagious	
Addictive	H.S.
Drug abuse	
Smoking	
Drinking	
etc.	
Psychosomatic illnesses	H.S.
Drugs, alcoholism, and suicide as ultimate failure to accept self	J.H.-H.S.
Need for privacy	
Healthy renewal rather than withdrawal	
Ability to be alone with one's self	H.S.
Introspection	
Meditation	

MAN AND HIS INTIMATES

= Man's first projection outside of himself

Relationship with
- Parents (necessity to rebel, to assert individuality)
- Siblings (trial by combat)
- Peers (pecking order, friendships, alliances)
- Spouse (role of sharing, support, care of children)

- HOME

Health in the home	
Safety at home	1-3
Some famous homes:	
Mount Vernon	
Monticello	3
White House	
Home management	
Budget	H.S.
Buying a home	
Baby and child care	H.S.
Assigning of tasks--chores	K-3
Opinion-based biases (propaganda) (as learned in the home)	J.H.-H.S.
Family living	
How families live	2-3
Building family cohesiveness	H.S.
Family members/loved ones	
Extended families	
Nuclear families	
Child-rearing procedures and philosophy	H.S.
Relatives	
Kinship patterns	
Adoption	

Besides food, shelter, clothing (which family usually provides through work-earning money syndrome), family also provides:	
Health care	
Defense/protection	
Introduction to social order/culture	
Sense of continuity (security)	3-8
Customs and norms of the culture into which you were born	
Introduction to workshop pattern	
Love (most of all!)	
The need (or lack of) to be part of a family pros and cons	J.H.-H.S.
Man's need for others	K-12
Man's need for privacy	J.H.-H.S.
Assignment and use of nicknames	K-3
Hand-me-down clothes	K-12
Reward/punishment system	K-12
Food as an emotional substitute	H.S.
"Breaking bread" as fellowship	2-3
Providing well-balanced diet Instilling good eating habits Using eating utensils Chopsticks Good table manners	K-12 K-3
Entertaining in the home Parties and banquets	H.S.
Consumer education and budgeting	J.H.-H.S.
Changing status of such institutions as marriage and the family in our society	H.S.
Communal living. Communes Kibbutz	H.S.
Space requirements per person Cleanliness requirements/housekeeping	K-12
Heredity and health (e.g., sickle cell anemia, tendency to heart disease, diabetes, etc.)	K-12

- Inheritance practices — H.S.
- Inherited (hereditary) features and traits — J.H.-H.S.
- Customs, mores, and values (as taught in the home) — H.S.
- The home as an environment
  - Architecture of the home
  - Function and functional design of each room
  - Duties and roles of family members
    - Why roles?
    - Traditional "mother" role
    - Traditional "father" role
    - Traditional "grandparent" role
    - Transition of attitudes toward above roles
      - Women's Liberation movement
  - Cooking
    - Cooking utensils
    - Recipes
    - Oven/baking/broiling — J.H.-H.S.
    - Frying
    - Boiling
  - Laundry
    - Making soap
    - Ironing (evolution of modern steam iron)
  - Entertainment within the home
    - Games
    - Craft projects
    - Television
    - Inviting guests
    - etc.

FRIENDS

- Friendships (uniquely different in U.S. from all other countries)
  - As distinct from "acquaintances"
- Human relations
- Group identity
- Getting acquainted with neighbors, playmates
- Feeling of self-sufficiency in relation to abilities of his peers

Oral reading
Writing friendly letters

Romance/dating/courtship
Method of choosing spouse (and who chooses)
Marriage contracts
Arranged marriages
Divorce/remarriage

Burial customs/mourning
- Widows
- Euthanasia

Nepotism

Alienation

Population

Math applications:
- To increase his ability in keeping accounts
- To understand the value of money
- Check-writing and budgeting in order to help his family
- Importance of earning a living

MAN AND HIS COMMUNITY

ORGANIZATION

People	
Boy-boy	
Girl-girl	
Boys-girls	
Men-women	
Teacher-students	
Employer-employee	K-5
Householder-servant	
Officer-soldier	
Leader-subordinate	
Peer relations	
etc.	
Self	
Family members	K-5
Roles of people in the community	
Races	
Religions	3
Nationalities	
Infancy	
Childhood	
Adolescence	
Adulthood	3
Middle age	
Old age	
Care for aged as a family responsibility	
In the city; in the suburbs; in the country	3
Places	
Introduction to school.	
Getting to know:	
Teacher	
Each other	
School building	
Lunchroom	K-1
Library	
Nurse's office	
Main office	
Custodians' room	
Bathroom	

Schools	
Office buildings	
Restaurants	
Hotels/motels	
Hospitals	
Parks	
Theaters	
Stores	
Grocery	
Department	
Drug	
Dime	
Clothing	2-3
Shoe	
Furniture	
Discount	
Houses	
Apartments	
Farms	
Industrial buildings	
Commercial facilities	
Churches	
Museums	
Public buildings	
etc.	
Space--psychological effect	H.S.
Habitats, adaptation	J.H.
Getting to know our neighborhood	
Age range of residents	
Ethnic composition	
Residential areas	
Commercial areas	2-3
Public facilities	
Population density	
Religious makeup	
Economic level	
Political makeup	
Flux, stasis, or stagnation	J.H.
etc.	

Processes	
Communication	K-12
Transportation	2-6
Trade of goods and services	3-12
Distribution of people, places, processes	
Scattered farm communities	
Small towns	
Suburban towns	3-5
Cities	
Metropolitan centers	
Megalopolis	
In other times	5, 7
Around the world	6
Man's role in various cultures	7
Communal living	H. S.
Monasticism	
Geographic areas of the world: their people and their customs	
Europe	
British Isles	
Scandinavia	6
Western Europe	
Southern Europe	
Eastern Europe and Russia	
Africa	
North Africa	
West Africa (including Central Northern region)	6
Central Africa	
East Africa	
South Africa	
Middle East	6
Orient and Pacific	
South Asia	
Southeast Asia	6
East Asia	
Pacific Region (Oceania)	

- The Americas
  - Canada
  - United States (including Amerindians)
  - Mexico
  - Central America
  - Caribbean, Bahamas, and Bermuda
  - South America

  4-6, 8
- Antarctica — J. H.
- Arctic — J. H.

COOPERATION

- Individual needs
  - Food
  - Physical protection
    - Clothing and shelter — 2-3
  - Helping
  - Working together
- Satisfaction of needs
  - Families
  - Caveman
  - Early civilizations
  - Nomadic peoples

  7
  - In warm climates
  - In cold climates
  - Deserts
  - During natural disasters
  - In wartime
  - In isolation (Robinson Crusoe)
  - In outer space

  7
- Needs of modern communities
  - Goods
    - Food
    - Clothing
    - Shelter
    - Household supplies
    - Machines
    - Means of transportation

    3
    - Water
    - Power
    - Medicine
    - Resources
      - Natural, human, institutional

Services

- Garbage collection
- Delivery of food, supplies
- Building
- Transportation
- Mail delivery
- Police protection
- Military protection
- Storekeepers
- Teachers
- Repairmen
- Doctors/nurses/dentists/optometrists
- Salesmen 3
- Janitors
- City planning
- Real estate sales
- Government officials
- Fire protection
- Public utilities
- Recreation
- Welfare
- Religious organizations
- Health protection
- Warehouses

Access to goods and services

- Barter
- Trade
- Money/salaries/income/wages
- Buying and selling (1-3)
- Inflation/deflation
- Medium of exchange/monetary system (value attached culturally to rare items; e.g, salt, gold, silver, gems, wampum, cowrie shells, etc.) (7) 6-12,
- Supply and demand Generally
- Production and supply (mass production)
- Wholesale/retail
- Competition
- Bargaining process (haggling over prices/fixed price system)
- Profits/losses
- Credit (rating, cards, unions)
- Loans/interest

Stock market (bonds, futures, commodities)	
Banking	
Savings/investment	
Insurance ("No Fault" insurance)	
Taxes	6-12, Generally
Regressive/progressive	
Income	
Sales	
Gas/cigarettes/liquor	
Property	
Contracts	
Open markets	
Bazaars	H. S.
Auctions	
Gross National Product	
Value (and how values change)	
Chain store	
Mail order business	
Checkin account	
Writing a check	
Money order	
Stock market	H. S.
Bears and bulls	
Dow Jones averages	
Board of Trade	
Cost of Living Index	
Inflation/deflation	
Depression	
Bookkeeping/accounting	
Regulation of access to goods and services	
Free enterprise system	
Government controls	
Socialization	
Communism	
Means of acquiring property	
Inheritance	
Loans	H. S.
Backers	
Stocks	
Consumer protection	
Chamber of Commerce	
Junior Chamber of Commerce	
Better Business Bureau	
Downtown Utica Merchants Association	

Issues affecting access to goods and services
- Effects of war on manufacturing
  - On economy in general
- Different pay scales
  - Whites/minorities
  - Men/women
- Employment practices
- Access to education/training
- Unequal taxation (millionaires who don't pay taxes)
- Career opportunities in given locale
- Job obsolescence
- Social status and possession of material goods
- Government spending — H.S.
- Public financial supports
  - Unemployed
  - Farmers
  - Businesses
  - Handicapped/infirm
  - Aged (respect for, institutions for)
- Maintenance function in society (How "developed" a nation is can be told not by what products it manufactures, but, even more, by how it is able to keep its equipment repaired.)
  - Built-in obsolescence
- Depression

Medicine: an in-depth look at a community service
- Medical doctors (including various specializations)
- Dentists
- Nurses
- Nurses aides — 3
- Hospitals
- Nursing homes
- etc.

Socialized medicine — H.S.

Eye banks	
Organ banks	
Heart transplants	J. H. -H. S.
Computer diagnosis	
Cloning	
Psychiatry	
Mental illness	
Progress in attitudes, diagnosis, and treatment	J. H. -H. S.
Tranquilizers, etc.	
History of medical care	
Treatments and cures from the past	J. H. -H. S.
Surgery (past and present)	
Health insurance	
Ambulance	
X-ray	
Paramedics	J. H. -H. S.
Field hospitals	
First aid	
Medicare	
Medicaid	
Project HOPE	J. H. -H. S.
World Health Organization	
Immunization	
Preventive medicine	
Sterilization	J. H. -H. S.
Antiseptic techniques	
Medical uses of drugs	
To combat germs and infection	
To cure diseases	
To ease pain	
As sedatives	J. H. -H. S.
As stimulants	
As tranquilizers	

Causes of disease
- Bacteria
- Toxin
- Virus
- Allergy
- Infection — J. H.
- Poison
- Radiation
- etc.

Effects of disease
- Blindness
- Deafness
- Fever
- Hunchback
- Coma — J. H.
- Sickness
- Death
- Immunity

Types of diseases
- Infections/contagious diseases
- Epidemics
- Diseases caused by physical agents (e.g., blisters, fractures)
- Diseases caused by chemical agents (lead poisoning)
- Diseases caused by diet deficiency (rickets)
- Diseases caused by the wrong functioning of parts of the body (cancer, gallstones)
- Occupational diseases (silicosis) — J. H. -H. S.
- Mental and nervous diseases
- Children's diseases
- Diseases of old age (senility)
- Allergies
- Diseases affecting respiratory system
- Diseases affecting heart, blood, and circulatory system
- Diseases affecting digestive organs
- Diseases of eye
- Diseases of teeth and mouth

Treatment of disease	
Diagnosis	
Medicines and drugs	
Surgery	
Rest	J. H. -H. S.
Immunization	
Therapy	
Psychiatry	
etc.	
History of surgery	
Barber as doctor	H. S.
Bloodletting/leeches	
Nonconventional treatment	
Osteopathy	
Chiropractic	
Homeopathic medicine	H. S.
Acupuncture	
Psychiatry	
Safety	
To and from school	
On playground	
In classroom--with equipment	K-3
Policeman	
Not accepting favors or rides from strangers	
Kinds of groups	
Hobby/interest	
Action	
Political	
Right wing	
Left wing	
Business	J. H. -H. S.
Professional	
Fraternal	
Service	
Religious communities	
etc.	

Parties and social gatherings Introductions Etiquette/good manners Reward/punishment Social manners	2-4
Meetings (parliamentary procedure/ Roberts Rules of Order)	J.H.-H.S.
Conferences	H.S.
Strata Classes--lower/middle/upper Caste system of India Racism Sexism Women's Liberation	J.H.
Owners Managers Professional groups Laborers Migrant farmers Tenant farmers "Blue collar" workers "White collar" workers	J.H.
Groups outside the social structure	J.H.
Social relations Social equality or inequality	H.S.
Food/clothing/shelter as a status symbol	J.H.
Servitude Slavery The mentality of the colonizer and the colonized Racism/prejudice	J.H.-H.S.
Nationalities and national loyalties National foods Foods we have received from other countries	J.H.

"Face" and "saving face"	H.S.
Group loyalty	H.S.
Pressures to fit the norm	J.H. -H.S.
Rituals and ceremonies	H.S.
Emergence of spirit of nationalism	J.H. -H.S.
Patriotism	J.H. -H.S.
Jingoism	J.H. -H.S.
Building groups into societies	
American heritage	
American Indians	
Indians of the New York area (Iroquois)	
Life in early America	
American Indians	
Pilgrims	
Colonial life	
Pioneers	5, 8
Western frontier life	
The adventure of the frontier	
Citizenship	
Naturalization	
Alien	
Changes in immigration practices	
Economies of America	10
Melting pot versus a pluralistic society	H.S.
Growth of cities	J.H.
New York in a megalopolis society	8
History of our community	3
Study of regions of the Western Hemisphere	6
World cultures today	7
Anthropology	H.S.
Changing attitudes toward the non-Western cultures (used to think Africa was a "country without a past")	H.S.

Preservation of traditions (for each group within the community)	
Printing/books/libraries/histories/ museums	
Oral histories (African tribes)	7
Customs (= standards of acceptability and recognition)	
Rituals/ceremonies	
Myths and folk heroes	
Holidays	
National dress	3-6
National anthems	
National flags/state seals	
Patriotism	
Stereotypes of outsiders	H.S.
Societies in transition	
Acculturation	
Problems of modernization in an "underdeveloped" country	
Lack of stability in such a fast-changing society as ours (Future Shock)	H.S.
Future of such institutions as marriage and the family	
Women's Liberation movement	
Customs	
Customs of dress	
People dress for the impression their dress will make on others	3-6
Formal/informal dress	
Women's/men's dress	
Urban/rural/regional differences	
Sportswear	
Work clothes	
Uniforms	
Military	3-6
Professional/vocational	
Ritual (wedding, burial, confirmation, religious orders and ranks)	
Outer/under wear	
Protective clothing (e.g., knight's armor, welder's helmet, etc.)	
Babies'/children's/teenagers' clothes	

Styles of clothing
- Fashion/fads
- Native costumes of various countries — J.H.
- Clothing through the ages (throughout history)

Haute couture
Fashion design
Fashion illustration — H.S.
Modeling

Related areas:
- Masks
- Body painting
- Mutilation and scarification (including teeth ornamentation, filing, blackening, etc.) — J.H.
- Cosmetics
- Wigs
- Beards/hair styles
- Jewelry
- Perfume

- SOCIALIZATION

The individual/self image/Who am I? — K-12
- Physical appearance
- Culture
- Religion
- Interests
- Experiences
- Skills
- Talents
- Attitudes
- Knowledge
- Personality
- Likes/tastes
- Needs

Interpersonal relations
- Communication--one to one
  - Verbal
  - Nonverbal
- Friendship
- Honesty
- Trust — 3-9
- Openness
- Defensiveness/inhibitions
- Desire to help
- Sensitivity
- Interest in others/empathy
- Dependability
- Responsibility
- Loyalty
- Authority
- Protection — H.S.
- Autonomy
- Inability to express one's self adequately (some people are less verbal than others)
- Population
- Social needs

Groups
- Communication
  - Small group interactions
  - One-to-large group
  - Group-to-group
  - Effect of
    - Ritual
    - Local custom — H.S.
    - Past experience
    - Personality
    - Situation/physical setting
    - How long you have known the other person(s)
    - etc.

When societies do not accommodate everyone

- Some contemporary social problems and issues
  - Freedom and its restriction
  - Violence and crime
  - Communication and its breakdown
  - Poverty/affluence
  - Drugs and alcoholism
  - Revolution and civil disorder
  - Extremists--right and left
  - Generation gap
  - Crime and rehabilitation
    - Prison reform
    - Recidivism
  - Youth culture
  - Groupness and belonging--alienation
  - Authority
  - Geriatrics--care of the aged
  - Unemployment
  - Discrimination--on the basis of race, ethnic group, sex, class, age, etc.
  - Decay of inner cities (ghettos)
  - Health and medical care
    - Hunger H.S.
    - Malnutrition
    - Socialized medicine
    - Organ transplants
    - Euthanasia
    - Medical education
    - ~~Paramedics~~
    - American Medical Association
    - Handicapped
    - Mentally ill
  - Rural problems
  - Welfare
  - Housing and slums
  - Suburbia
  - Juvenile delinquency
  - Leisure time
  - Work as a fulfilling activity
  - Population problems
  - Ecology
  - Tradition and change (status of traditional institutions: marriage and family, church, school, etc.)
  - Suicide

Other social systems
- Hawaii
- England
- Soviet Union — 6-8
- China
- India
- Primitive societies

COMMUNICATION (INFORMATION AND ACCULTURATION)

Language

Language families:
- Indo-European
  - Greek
  - Romance
  - Celtic
  - Slavic
  - Indo-Iranian
  - Albanian
  - Armenian
- Sino-Tibetan — J. H.
- Mon-Khmer
- Japanese and Korean (relationship still not determined)
- Ural-Altaic
- Dravidian
- Malayo-Polynesian
- Black African (several)
- Semitic-Hamitic-Kushitic
- American Indian (several)

Evolution of English alphabet
Latin and Greek roots of English words — H. S.
Heavy borrowing from English by many languages

Development of Esperanto and Esperazo (international languages)
International symbols for travelers — H. S.
- Road signs
- Airports/restaurants/hotels

Foreign languages	
Total approximate number of languages in the world	
"Families" of languages	
Language as evidence of origin of any people	
"Dead" languages	H.S.
Deciphering languages (e.g., Rosetta stone, "Linear B")	
Decoding code messages	
Translation	
Problems of translation	
Braille	J.H.
Sign language of the deaf	
Dialect	
Slang	J.H.
Jargon (specialized professional or technical terms)	
Figures of speech	
Metaphor	
Simile	
Pun	J.H.
Irony	
Sarcasm	
etc.	
Formal/informal	
Gossip	
Rumor	
Inspirational	J.H.-H.S.
Mob	
Information/instruction	
Lecture	
Political indoctrination/propaganda	
Verbal means of communication ("media")	
Door-to-door/person-to-person	
Speaker's platform	
Letter/postal system	
Books	
Newspapers/magazines	J.H.
Telephone	
Telegraph	
Radio	
Television/closed-circuit TV	
etc.	
Levels of communication	H.S.

Using Language

Importance of using words well For better understanding among people To break down barriers To transact business In getting a job Personal growth Expressing your feelings as fully as possible	H.S.
Story writing Letter writing Expository writing	3-12
Public speaking	J.H.-H.S.
Story telling	K-3
Corrective speech Speech therapy Stuttering Lisping	K-12
Speaking as a vocation Radio/TV broadcaster Interviewing Counseling Public relations/advertising	H.S.
Reading as a vocation Literary critic Proofreading Librarian	
Reading music	3-12
Roman numerals Arabic numerals	K-4
Development of speech Anatomy of the vocal chords	J.H.
Direct/indirect communication Communication through an intermediary Representative government as a case in point	H.S.

Nonverbal Communication

Symbols	K-3
Smoke signals Tom-toms	K-3
Nonverbal communication (gestures and signs)/ body language	H.S.
Models Still pictures Motion pictures Drawings Schematics and diagrams, maps, and graphs Symbols (pictographs) Abstract symbols (words and equations)	1-12

Manipulative Use of Language

Public opinion and public opinion polls	H.S.
Editorializing Commentary News media as molder of public opinion Journalism: to inform?/or to mold?	H.S.
Debate	H.S.
Town meeting	H.S.
Advertising/salespitch/truth in advertising Personal influence Propaganda Bribery and graft as a means of receiving favor Persuasion techniques Brainwashing	H.S.
Detesting propaganda	H.S.

REGULATION

Law

- Rules and laws in school — K-2
- Rules and laws in the community — 3
  - Problem of dogs in large cities
- Kinds of law:
  - Civil law
  - Criminal law
  - Constitutional law
  - International law
  - Governmental law — H.S.
  - Parliamentary law
  - Military law
  - Maritime law
  - Common law
- Law codes
  - Hammurabi's code
  - Justinian code
  - Ten commandments — H.S.
  - Napoleonic code
  - etc.
- Felonies and misdemeanors
  - Abandonment
  - Accessory
  - Arson
  - Assault and battery
  - Barratry
  - Bigamy
  - Blackmail
  - Breach of the peace
  - Bribery
  - Burglary
  - Collusion
  - Conspiracy
  - Contempt
  - Counterfeiting
  - Embezzlement
  - Euthanisia
  - Forgery
  - Fraud
  - Homicide
  - Kidnapping/ransom
  - Larceny
  - Libel
  - Lynching
  - Manslaughter
  - Mayhem
  - Murder/assassination
  - Perjury
  - Poison — J. H. -H. S.
  - Polygamy
  - Regicide
  - Riot
  - Robbery
  - Slander
  - Suicide
  - Treason
  - Trespass
  - Vagrancy

Laws International laws International affairs Diplomacy Protocol War/peace/cold war/power alliances Resolution of arguments and misunderstandings United Nations	H.S.
Urban renewal codes Building codes and inspections Licensing of contractors Unions (strikes)	H.S.
Zoning restrictions	H.S.
Contracts Social Legal Business Marital	H.S.
Marshall law	H.S.

Civil Order

Police Laws Lawyers Judges	3-5
Court system Trial procedure	8, 10
Treatment of offenders Prisons Prison reform movement Is the aim to remove from society, to punish, or to rehabilitate?	8, 10
Problem of police corruption	H.S.

State court system	
Appellate Court	
Court of Claims	
Court of Domestic Relations	8-10
Juvenile Court	
Probate Court	
Witness	8-10
Defendant	
Federal court system	
Supreme Court	
Court of Appeals	8-10
District Court	
Court of Claims	
Jury duty (and citizen's responsibility)	
Trial by jury	8, 10
"Act of God"	
Justice of the Peace	8, 10
Notary Public	
County officials	
Assessor	
Auditor	
Coroner	8, 10
Autopsy	
Inquest	
District Attorney	
City government officials	
Mayor	
Auditor	
Assessor	
Alderman	
City planner	3, 8, 10
Housing Authority	
Police	
Public health	
Vital statistics	
etc.	
Problem of nepotism	10

Administration of Government

Reasons for government	8
Political structure (government)	
City — Ward	
County (or province) — Parish	
State — Prefecture	8, 10
Region — Zone	
County — Territory	
etc. — etc.	
United Nations--idea of world government	J. H.
Kinds of government	
Anarchy	
Monarchy	
Aristocracy	
Theocracy	
Democracy	H. S.
Socialism	
Communism	
Dictatorship	
Facism	
Military coup	
One man-one vote	
Representative democracy	5, 8, 10
Political parties	
Elections	
Political conventions	
Local/national politics	
Major parties	
Republicans	8, 10
Democrats	
Splinter groups	
Third party	
Dark horse	
Executive branch	
Judicial branch	
Legislative branch	8, 10
Senators	
Congressmen (representatives)	

Congress Parliament Cabinet	8, 10
Government systems in other parts of the world	H.S.
Governor State officials	3, 8
Mayor City Manager City Council	3, 8
Public welfare Public Health Department Restaurant standards City/county Health Boards Hospital boards Water supply control	10
Loyalty Trust Credibility Responsiveness Acceptance of responsibility	H.S.
Local, state, and national interrelationships	H.S.
Federal versus state's rights	8, 10

The Individual and the Political System

Our rights as citizens The Four Freedoms Academic freedom Bill of Rights Civil rights Declaration of Independence Magna Charta	J.H.
Symbols of freedom Statue of Liberty Liberty Bell Flag	3-5
Civil defense	

Citizenship
Our responsibilities to our:
Country
Family
Church — J. H.
School
Clubs and organizations
etc.

Civic responsibility — J. H.
Rules governing respect for the flag

Changing the Government

Constitutional amendments — H. S.
Making laws

Revolutions
French
United States — J. H.
Industrial
etc.

Characteristics of revolutions — H. S.

Governments throughout History

City-states of ancient world
Medieval feudal system — H. S.
etc.

HUMANIZATION

Friendship
Sharing — K-12
Cooperating
Making others feel good

Sense of community spirit — 3-12

Concern for those we do not personally know
Sympathy
Empathy — 3-12
Concern for the handicapped/unfortunate/poor/orphaned/strangers, etc.

Hunger/starvation	
Of the individual	
Society's responsibility	
Attitudes towards those on relief	H. S.
Agencies dealing with	
Worldwide starvation	
Social work	
Foreign aid	H. S.
Attitudes toward homicide/genocide	H. S.
Education and utilization of the handicapped	H. S.

Skills

- Math application:
  - Geometric structure of the community — J. H. -H. S.
  - Map reading and measurement of community — 3-8
  - Wholesaling and retailing — 1-5
  - Following the stock market reports for a particular stock — H. S.
- Letter writing
- Report writing
- Verbal communication skills:
  - Verbal reports
  - Choral reading
  - Debate
  - Demonstrations
  - Panel discussions
  - Interviews
  - Introductions — 3-12
  - Telephone etiquette
- Group work skills
  - Determining tasks
  - Assigning duties
  - Note taking
  - etc.
- Holding group discussions
  - Arriving at consensus
- Ability to learn and follow rules

MAN IN HIS PHYSICAL ENVIRONMENT

GENERAL CONSIDERATIONS

Maps
- Profile
- Topographical
- Relief
- Contour

Map skills
Demographic (population concentrations
Mineral surveys (seismographic charts)
Medical statistics (infant mortality, average life span, etc.)
Neighborhood map
Globe as earth model
Problem of environment versus heredity

MAN'S EXPANDING HORIZONS

Kindergarten:
- Self and manipulation of the immediate environment
  - Names for things in environment
  - Building blocks
  - Dress-up/role playing
    - People in my environment

The Home as an Introduction to his Physical Environment

Aesthetic aspects
Pragmatic, utilitarian features 1-2
Unpleasant aspects

Architecture without professional architects:
- Caves (Palaeolithic caveman)
- Tents
- Subterranean (e.g., North Africa: Matmata, Gharian, Ghadames)
- Eskimo igloo
- Mongolian yurt
- Amerindian solutions (e.g., Tepee, Wigwam Longhouse, Hogan, Pueblo-"apartment"--Taos)
- Log cabin
- Houseboats (Hong Kong's Aberdeen or Sausalito)
- Lake dwellings
- etc.

1-2

Architects and their work
Contractors

1-2

Building materials
- Wood
- Stone
- Brick
- Glass
- Steel
- Concrete and concrete block
- Plaster
- Plastic and foam
- Grass
- Mud
- Animal skins
- Sticks
- etc.

1-2

The Community as an Introduction to his Physical Environment

Natural Communities
- Pleasing elements
- Unpleasant aspects
- Features that support survival
- Destructive features

2-3

Architectural styles of historic periods:

- Neolithic
- Mesopotamian
- Egyptian
- Greek
- Roman
- Early Christian
- Byzantine
- Early Middle Ages
- Romanesque
- Gothic
- Renaissance
- Baroque
- Rococo
- 19th century styles
- 20th century styles/contemporary architecture
- Chinese
- Japanese
- Indian
- Southeast Asian
- Islamic
- Pre-Columbian
- African
- Oceanic
- Early American

The shaped environment

- Public parks
- Disneyland
- Reston/Columbia-type planned communities
- Monasteries
- Prisons
- Homes for the aged/nursing homes
- Condominiums
- Trailer parks
- Shopping centers
- College campuses
- etc.

Further Expansion of Man's Physical Environment

To ever-larger units:
- Neighborhood-community
- City
- State
- Region
- Country (nationalism) — 5
- Hemisphere
- World
- Universe
- Concept of equality and brotherhood of all men

SPATIAL-TEMPORAL ORIENTATION

Sense of Space

- Sense of geography (3)
- Personal space orientation
- Sense of direction: north/east/south/west
  - Why have most people in history oriented themselves to four directions?
- Right-left — K
- In-out
- Through
- Up-down
- Away
- Far-near

Measuring our world and its objects:
- Length
- Area
- Cubic measurement
- Weight
- Commercial products (e.g., wood = cord; paper = ream, quire; etc.)
- Temperature
- Air — 3-6
- Electricity
- Time
  - Seconds
  - Minutes
  - Hours
  - Days
  - Weeks
  - Months
  - Years
  - Decades
  - Centuries
  - Millennia
  - Calendar

Quantitative relationships	
Large-small	
Big-little	
Half-whole	K
Part	
Comparisons	
How far is infinity?	H.S.

Sense of Time

Time sense	K-2
Measuring time (clocks/watches)	K-2
Time zones	4
Psychological time	4-6
Sense of history	4
Past/present/future orientation (today/tomorrow/ yesterday/now/then/later)	K
Calendar (Gregorian/Julian/BC/AD)	5
Sequential activities or events	4
Sense of chronology and contemporaneous events	4

NATURAL PHENOMENA

The Contour of the Universe

Heavenly bodies	
Solar system	
Sun	
Moon	
Planets	
Earth	
Jupiter	
Mars	2-3
Mercury	
Neptune	
Pluto	
Saturn	
Uranus	
Venus	

Asteroids	
Meteors	
Comets	
Stars	5-8
Constellations	
Milky Way	
Northern Lights	
Galaxies	
Land masses	
Age of the earth	
Weight of the earth	
Internal composition of the earth	
Distance of earth from	4-6
Sun	
Moon	
Other planets	
Movements of the earth	
Eclipse	
Pole	
Rotation on axis	2-4
Around sun	
Within galaxy	
North Pole	
South Pole	
The earth's zones:	
Arctic circle	
Antarctic circle	
Equator	
Tropic of Cancer	
Tropic of Capricorn	5
Longitude	
Latitude	
Meridian	
International date line	
Continents	
North America	
South America	
Europe	
Asia	5
Africa	
Antarctica	
Australia	

Hemisphere (Eastern/Western)
Continent
Island
Peninsula
Isthmus
etc.

6

Jungle
Desert
Rain forest
Plains
Grasslands
Savannah
Highlands
Plateau
Mountains
Tundra
Swamp
Tidelands
Coastal region
etc.

6

Kinds of soil
- Clay
- Humus
- Loam
- Loess
- Sand
- Silt

6

Earthquake
Fault
- San Andreas Fault

3

Seismograph
Landslide/avalanche

Affecting changes in the earth's surface
- Wind
- Water
- Weather
- Volcano
- Earthquake

3

Water Masses	
Ocean	
Sea	
Lake	
River	
Bays/gulfs/inlets/lagoons	
Sound	
Straits/channels	
Cape	3
Inland waterway	
Canal	
Waterfall	
Tides/tidelands	
Currents	
Glaciers	
Icebergs	
Geyser	
Oceanography	3-6
Weather-climate	
The four seasons	
Climate zones	
Climate cycles	
Melting of the polar ice cap	
Temperature	3
Centigrade/Fahrenheit	
Weather/meteorology	
Weather forecasting	
Cloud formations	
Rain	
Snow	
Sleet	
Hail	
Fog	3
Humidity	
Dew	
Frost	
Rainbow	3
Weathervane	
Barometer	
Rain gauge	3
Thermometer	

Hurricane Typhoon Tornado Monsoon Whirlwind	3
Natural Resources	
Coal Lumber Oil/petroleum Quarried stone Natural gas Rubber	3; 5
Chemicals Chemical elements (105) Periodic table of the elements	H.S.
Minerals and rocks	3-5
Gemstones	3-5
Metals	4-6
Soil Water Air	K-2
Conservation of natural resources	K-2
Technology Industrial Revolution	K-6 8
Mining and harvesting the resources (e.g., lumbering and drilling for oil)	3, 5
Technological level of inhabitants determines which natural resources and elements are put to what use	5
Problem: The U.S., with 6 percent of the world's population, uses nearly 60 percent of the world's resources	8

Natural Laws/Physics
(Basic preparation begins in kindergarten)

- Matter
- Energy
- Motion and force
- Mechanics
- Heat
- Light
- Sound
- Electricity
- Electronics
- Magnetism
  - Magnetic field
- Radiation
- Atomic physics

H.S.

- Properties of matter
  - Density
  - Ductility
  - Elasticity
  - Gravity
  - Hardness
  - Inertia
  - Malleability
  - Mass
  - Porosity
  - Spring
  - Tenacity
  - Viscosity
  - Weight

H.S.

Man's Biological Neighbors

General

- Interdependence (symbiosis) of plants and animals

3-7

- Conditions of life
  - Air
  - Water
  - Heat
  - Light
  - Sun
  - Nutrition — 3-7
  - Adaptation
  - Aselimatization
  - Growth/maturation
  - Reproduction
  - Death
- Inorganic/organic — 3-7
- Evolution
  - Evidences of changes in living things
  - Theories of evolution — J. H.
    - Darwin
- Fossils

Animals

- Animal kingdom (biological classification system):
  - Jellyfish
  - Earthworm
  - Starfish
  - Snail
  - Molluscs (clam, mussel, scallop)
  - Octopus
  - Crustaceans (shrimp, lobster) — H. S.
  - Arachnoids (spider)
  - Insects
  - Fish
  - Amphibians (salamander, frog)
  - Reptiles (alligator, crocodile, turtle, snake)
  - Birds
  - Mammals

Useful animals
- Beasts of burden
- Animals that fight pests (birds/some insects/other animals)
- Animals helpful to plants (pollination/ seed carrying)
- Animals useful for their products (clothing/leather/fur/silk)
- As food
- Industrial products (wax/bristles/ feathers/glue/ivory/oil/perfumes)
- Other uses (St. Bernard/police dog/guinea pig/seeing eye dog/homing pigeon)

2-4

Animals that live on both land and water
- Alligator
- Crocodile
- Beaver
- Frog/toad
- Seal
- Snail
- Hippopotamus
- Turtle
- Walrus
- Salamander

4-6

How animals move about
- Legs
- Fins and flappers
- Crawl (legless: snakes, worms)
- Glide (flying squirrel)
- Fly (birds, bats)

4-6

How animals protect themselves
- Speed
- Thick hide/armor
- Horns
- Protective coloration
- Claws
- Climbing
- Teeth
- Chemicals (skunk/tarantula)
- Playing dead or injured (beetle/turtledove)

4-6

Taxidermy	4-6
Animals as symbols Donkey = Democrats Elephant = Republicans Eagle = USA Dove = peace etc.	5-6
Plants	
Plant kingdom (biological classification system)	
Thallophytes	
Algae	
Fungi	
Bryophytes	
Liverworts	
Mosses	
Pteridophytes (ferns)	H.S.
Spermatophytes	
Gymnosperms (evergreens)	
Angiosperms (flowing plants)	
Monocotyledons (grasses, lillies, etc.)	
Dicotyledons (deciduous trees, vegetables, fruits, cacti, etc.)	
Weeds	
From tree to lumber	5-6
Luther Burbank George Washington Carver Gregor Mendel	4

TAMING THE ENVIRONMENT

General

Domestication of animals Controlling fire Herding flocks Development of agriculture Building shelters Tanning leather/hides for clothing and tents Using fur for clothing and blankets Weaving (loom) Pottery (potter's wheel)	4-6
Irrigation Hurricane warning systems Seeding of clouds Rain dance Offering sacrifices	4-6
Weather forecasting Weather control	4-6
Control of environment temperature allows man to keep his body temperature within normal range without undo loss of body energy; therefore, more productive work can be achieved, and at greater comfort (U.S. is only country that tries to keep people at 72°F winter and summer.)	4-6
Different styles of architecture to cope with different Climates Transportation systems Availability of land etc.	J.H.
Radar Radio Telescopes Microscopes Magnifying glass Laser/maser etc.	J.H.

Primal Industries

- Agriculture/farming
  - Gardening
    - Vegetables
    - Fruits
    - Nuts
    - Raw foods
    - Cooked foods
  - Home gardening — K-3
  - Grains
    - Corn (maize)
    - Wheat (flour, bread)
    - Oats
    - Rice
    - etc.
  - Planting (seeds/care/harvesting) — K-3
  - Livestock
    - Domestication of animals
      - Meat/poultry
      - Dairy products — 2-3
  - Annual cycle — 4-6
  - Effect of climate/geography/soil, etc. on choices of crops raised in an area — 5-6
  - Irrigation
  - Contour farming/strip planting
  - Crop rotation
  - New "miracle" grains
  - Chemical fertilizers (before 1920, all Americans used "night soil" as fertilizer)
  - Deliberate hybridization — 5-6
  - Selective breeding
  - Herding/grazing (shepherds/cowboys)
  - Mechanized farming (e.g., transition from sickle-sythe/McCormick's reaper/ threshing machine/combine)
  - Land reform (6-7)
  - Collective farming
  - Migrant laborers
  - Share cropper — 10-11
  - Tenant farmer

Other kinds of agriculture	
Beekeeping	
Dairy farming	
Vegetable gardening/truck farming	
Fruit gardening	4-6
Hydroponics	
Nursery	
Ranch	
Vineyards	
Farm Bureau/Grange	
How science helps agriculture (Agricultural Experiment Stations, etc.)	8, 11
How the government helps agriculture (Department of Agriculture/County Extension Agent/subsidies, etc.)	
Hunting and trapping	
Boomerang	
Bow and arrow	
Blowgun	7
Guns--history and design of firearms	
Traps/snares	
Hides/furs (fur traders)	
Hunting laws/hunting licenses/game limits	7
Restrictions on ownership of guns	
Fishing	
As an industry	
As a sport (including deep sea fishing)	6
As a means of livelihood	
Food from the sea/farming the sea	
Seaweed	
Lines and hooks	6
Nets	
Bait	

Tools

Tools as a means of manipulating the environment
Man the toolmaker — 7
Advantage of opposing thumb

Tools — K-12

Machines
Simple
Complex — K-12

Sources of Energy

Conversion of natural resources into energy
Fossil fuels
Water/hydroelectric power
Dams
Atomic energy
Sunlight — H.S.
Tides
Wind
Generators (gasoline, electric)
Steam engine
etc.

Man-Made (Processed) Products
(Changed significantly in structure)

Glass
Paper — 4-6
Plastics (synthetic materials)

Transportation (of People and Materials)

Invention of the wheel — 7

Motivations for travel — 7

Extensiveness of world travel as far back as the Neolithic period — 7

By foot
- As a means of travel
- Hiking
- Inca runners

Sedan chair/rickshaw

By animal, e.g.,
- Horse (horseback/saddle/buggy, chariot/wagon/ pony express/stagecoach/covered wagon)
- Oxen
- Dogsled
- Camel (caravan)
- Elephant
- Llama
- etc.

Swimming

Boats/ships (barges/tugs/rafts/freighters/passenger ships/canoes/rowboats/sailboats/motorboats/ outrigger/hydrofoil/submarine) 7

Bicycles/motorcycles

Automobiles
- Private cars
  - Defensive driving
- Taxi
- Bus
- Truck (truck routes/weight restrictions)
- Tractor

Trains/streetcars/subways/monorail (AMTRAK)

Airplanes/helicopters/gliders

Balloons/dirigibles

Rockets/space travel

Computing miles per gallon
- Cost of maintenance, fuel, tolls, etc. of a trip
- Millions of passenger miles by method of travel
- Miles of highway
- Miles of railway track
- Number of airports 5-7
- Flights per day/year
- Percentage of people who fly
  - Who fly once a year
  - Who fly twice a year
  - etc.

Number of people who own cars Average life of vehicles Average number of miles driven per year Cost Cost per mile etc.	5-7
Future travel possibilities Vacuum tube trains SST Computer-controlled traffic etc.	J. H.
Truck driver Bus driver Filling station attendant Garage mechanic Pilot Stewardess Ground crew etc.	3-6
Different kinds of engines Combustion engine Wankel Electric Gas turbine Steam Turbo-prop etc.	H. S.
Tickets One-way Round trip Reduced fare Reservations "Standby"	H. S.
Air streams Flight plans	3-5

Highways	
Rivers	
Bridges	
Drawbridges	
Suspension bridges	3-5
Rope bridges	
etc.	
Canals	
Tunnels	
Seaports/harbors	
Airports	
Train stations	3-5
Bus depots	
Airmail	
Air freight	3-5
Railway express	
Burden carrying	
Weight moving (bulldozers/cranes)	
Warehousing and storage	3-5
Longshoremen	
Ladders	
Stairs	
Elevators	3-5
Escalators	
Lighthouse	
Buoy	3-5
Wheelchair	
Crutches	3-5
Wheelbarrow	3-5
Luggage	3-5
Parachute	3-5
Skyjacking	3-5

Environmental barriers to travel Ocean Mountains Desert Berlin Wall etc.	5-6
Prehistoric trade routes (e.g., amber route)	7
Age of Exploration routes	5
Travel Travel agencies Group tours versus individual travel Passports/visas Customs/customs inspection International health requirements	H.S.
Present-day trade routes	6
Time zones and man's physical clock	5-6
Use of atlas and road map Latitude Longitude	3-6
Famous travelers Marco Polo Wright brothers Admiral Perry etc.	4
FAA as a regulating force Problem of public transportation systems	5-6
Mail/postal system	5-6
Transportation versus communication	J.H.
Community's dependence upon transportation Industry's dependence upon transportation	5
Influence of the automobile on changes in our landscape Role of the railroad in the development of America	3
Forbidding cars in certain areas of cities	3-6
Growth and decline of different systems over time (e.g., railways)	8, 12

Interactions between transportation method and other aspects of society:	
(1) Cars-highways-personal mobility-suburbs -escape of young from family control	9-11
(2) Trains-train stations-cities-factories	
Moving (world becomes more mobile every year)	5-6
Immigration Emigration	4-6
Space travel Artificial satellites Way-stations in space Problems of space flight Spacecraft First trip to the moon Reaching the planets and stars	3-6

Natural Disasters

Protection from the elements	K-3
Storms/tornadoes/hurricanes, etc. Volcanoes Earthquakes Floods Fire Glaciers Icebergs etc.	3-5
Insurance (J. H.) Building codes Fire laws Dams National weather warning system Fire towers Forest Rangers Earthquake zones Tornado zones Hurricane/typhoon zones Live (active) (extinct) volcanoes	3-5

- Non-natural (man-made) disasters
  - War
  - Air pollution
  - Water pollution
  - Strip mining — 5-6
  - Deforestation
  - Erosion caused by improper land use
  - etc.
- Emergency procedures
  - Martial law
  - Disaster relief (Red Cross) — 8
  - Problems society must deal with after a disaster

SURVIVAL OF THE UNIVERSE: ECOLOGY

- The web of life (interdependence/balance)
- Destruction of our natural environment
- Preservation of our natural environment (Is it too late?)
- Depletion of resources
  - Exhaustion of known reserves of nonrenewable natural resources (e.g., silver: 13 years; gold: 9 years; copper: 21 years; tin: 15 years--source, The Limits to Growth, pp. 56-59)
- Extinction of animals, birds (greatly speeded up in our time)
- Problem of pesticides
- Land use and revitalization
- New "miracle" grains — K-12-- Emphasis 3, 5, 8
- Clean water supply
- Clean air supply
- Noise pollution
- Fuel shortage
- Shortage of electric power in large cities
- Industrial pollution
- Overpopulation
- Recycling of materials (nonbiodegradable materials/ recycling paper, bottles, cans)
- Recycling of energy
- Mining/strip mining
- Deforestation
- Wildlife conservation
- etc.

Gypsy moth destruction
Dutch elm disease

Forest Rangers

Examples of man affecting his environment
Examples of the environment affecting man
(Grapes of Wrath)

K-12--
Emphasis
3, 5, 8

PHILOSOPHICAL CONCEPTS OF THE UNIVERSE

Studies of creation
Studies leading to the concept of unity, the oneness of all creation
Man seen as separate from other creatures or as an integral part?
Nature as a source of survival
Nature as a destructive force
Nature as an incentive to man's explorative and creative activity
Dangers that threaten the physical environment and man's survival

J. H. - H. S.

MAN AT WORK

THE BUSINESS WORLD

Jobs

At home	K-1
In school	2
In community	3
Work your parents do	K-3
Work as a means of providing sustinance of life, creature comforts, and personal satisfaction Tied in with economic system/monetary system Thus work, by giving Man the medium of exchange, provides him with the basic necessities of life: Food Shelter Clothing Leisure time activities	5-6
Work (Physics definition)	H.S.
Applying for a job By letter In person	H.S.
Interviewing for a job Part-time employment	
Business structure Organizational chart Job description	H.S.
Mathematics Adding/subtracting/multiplying/dividing/ fractions/percentages Multiplication tables Abacus Adding machine	K-6
Computer Programming systems	H.S.

Use of arithmetic in making a living
- Bookkeeping
- Accounting
- Making change
- Banks/banking
- Charge accounts, installment buying
- Insurance rates
- Interest rates
- Buying on sale or at discount
- Budgeting — H.S.
- Telling time (1-3)
- Weights and measures
- Figuring distances on maps (5-6)
- Poll and public opinion taking
- Statistics for projection
- Testing
- Vital statistics
- etc.

Math application:
- Various occupations employing a mathematical background:
  - Architect/draftsman/carpenter/cook/waitress
- Computers and how they work for man — H.S.
- Business work
  - Inventory
  - Stocks and bonds
  - Insurance
  - Machine use

Technology (5-6)
Automation
Inventions (major inventions) (3-6)
Factories
Industrial Revolution (8, 10, 11)
Production line
Standardized parts — 8-12
Division of labor
Piece work
Factory workers
Managers
Wages and salaries
Labor relations

Labor law	
Labor unions	
Strikes	
Wage demands	
Improvement of working conditions	8-12
Warehouses	
Expense accounts	
Quality control	
Primary industry	
Secondary industry	
Service industry	8-12
Extractive industry	
Monopoly	
Competition	
Bill of Sale	
Bill of Lading	11-12
Receipt	
Trading stamps	
Unemployment rate	
Writing a business letter	3-6
Typing	H. S.
Biographies of leaders in industry	H. S.
Professional jargon (specialized scientific, technical vocabularies)	H. S.
Retirement plan	
Fringe benefits	H. S.
Social security	
Manual skills/manual dexterity	
Apprenticing	
Math to be used for jobs	
Interviewing	
Planning skills	H. S.
Problem-solving (K-12)	
Introductions (3-4)	
Group work skills (K-12)	

Major industries:	
Agriculture	
Architecture	
Building construction	
Communication	
Distribution of goods and services	
Engineering	
Entertainment	
Fisheries	
Food and food preservation	
Forest products	
Fur industry	5, 8
Iron and steel	
Manufacturing and processing	
Metallurgy/metal processing	
Mining	
Petroleum	
Publishing	
Quarrying	
Service industries	
Storage	
Transportation	
Simple machines	
Wheel	4-6
Levers	
Man as a toolmaker	7
Changes in economic life	
Agricultural-handicraft society shifts to urban-factory-manufacturing society	7
The "robber barons" in America's development	8, 11

Vocations/Professions

Policeman	Merchant	
Fireman	Lawyer	
Mailman	Artist	
Doctor	Musician	H. S.
Nurse	Author	In-depth
Teacher	etc.	
Librarian		

Vocations in:
- The arts
- Business
- Communications
- Education
- Engineering
- Government
- Health/medicine
- Industry
- Labor
- Law
- Mathematics
- Religion
- Sciences
- Services
- Transportation

H.S.

Vocational Training — H.S.

Vocational Counseling — H.S.

Occupational Outlook Handbook (Bureau of Labor Statistics, U.S. Department of Labor, 1970-1971)

Vocations and professions available
- Professional and related occupations
- Managerial occupations
- Clerical and related occupations
- Sales occupations
- Service occupations
- Skilled and other manual occupations
- Major industries and their occupations
  - Agriculture
  - Mining
  - Construction
  - Manufacturing
  - Transportation, communication, and public utilities
  - Wholesale and retail trade
  - Finance, insurance, and real estate
  - Service and miscellaneous
  - Government
  - Marine eco-systems management

H.S.

Other Vocations

Vocations that relate to other strands of Man and his world model

- Community services
  - Fireman
  - Police
  - Mailman
  - Store keeper
  - Repairman
  - Dry cleaner
  - Health services
  - Social workers
  - Teachers
  - Milkman
  - Mayor

2, 3

- Physical environment
  - Scientist--as recorder of natural phenomena
  - Farmer
  - Ecologist
  - Veterinarian

- Creator/explorer
  - Scientist--as discoverer (H.S. --specific sciences)
  - Artists (in all the arts)
  - Inventor
  - Astronaut
  - Explorers (Are there still any around?)

5

- Conflict
  - Warrior
    - Soldier
    - Sailor
    - etc.
  - Lawyer
  - Judge
  - Diplomats

3-4

- God(s)
  - Priest/minister/rabbi
  - Nun/monk
  - Missionary

Choosing a vocation
- Your qualifications
- Your abilities
- Your interests.
- Career opportunities
  - Jobs with a future — H.S.
  - Chances for advancement
  - Probable salary expectations
- Where to find information about jobs
- Exploratory job experiences
- Professional organizations

Training for a vocation
- Professional schools
- Adult education.
- On-the-job training — H.S.
- Apprenticeship

WORK PROVIDES FOOD

Physical need for food
- Nutrition and physical development
- Nutrition and mental activity

Psychological need for food — J.H.
- Desire for certain foods
- Different tastes of foods (sweet, sour, spicy, bland, etc.) (K-3)

Nutrition
- Food value
- Vitamins
- Minerals
- Calories — J.H.
- Proteins, fats, carbohydrates
- etc.

- Good eating habits — 1-3
- Body structure as influenced by nutrition — J.H.
- Diseases caused by poor nutrition — J.H.
- Careers in nutrition — H.S.

Water as food
- Drinks/beverages
  - Milk
  - Juices
  - Alcoholic beverages
  - etc.

J. H.

Farming (see Man in His Physical Environment)
- Farming as a means of survival
- Small heterogeneous farms
- Specialized farms
- "Agribusiness"
- Farm machinery business
- Produce processors

12

Food industry
- Granaries/storehouses
- Milling/refining
- Packaging
- Preserving processes (drying/bottling/canning/refrigeration/freezing)
  - The process of decay (and its purpose)
- Preservatives and additives in food
- Meat packing industry
- Marketing foodstuffs (farm-to-market process)
- Wholesalers
- Retail grocers
- Supermarkets

J. H.

Careers in food industry — H. S.

WORK PROVIDES SHELTER

Need for protection from
- Elements/climate
- Animals
- Other humans

2-3

Carpenters Bricklayers/masons Plumbers Electricians Construction workers Architects Draftsmen Interior designers House painters/paper hangers Furniture designers etc.	3; H.S.--as professions, in-depth
Local craftsmen Local furniture stores etc.	3
Service/utilities connected with providing a house: Insulation Strength/structural support Waterproofing Drinking water/hot water (plumbing) Toilets/drains (plumbing) Electricity/lighting Windows/storm windows Doors Heating Circulation of air/air conditioning Appliances (and their repair) Gas Stoves Refrigerator Washing machine/dryer Garbage removal Furniture Carpeting/floor tiles etc.	2-3
Janitor Doorman Concierge Chambermaid	3
Building tools	K-3

Architectural forms
- Arch
- Column
- Post and lintel
- Vault
- Dome
- Gable
- Steeple
- etc.

H.S.

WORK PROVIDES CLOTHING

Purposes of clothing
- Protect from cold/sun/heat (desert) — K-3
  - People who survive cold without clothing — K-3
- Modesty — J.H.
- Color and style — J.H.
- Symbol of status — J.H.
- Public conformity — H.S.

Shearing sheep/carding wool/spinning/weaving (loom) — 4-5

Dyeing cloth
- Tie dye
- Batik
- Ikat/Chinc
- History of dyes
- Sources of various dyes

4-6

Making own clothes

Tailor-made clothing (made-to-measure)
- Tailor
- Seamstress

J.H.-H.S.

Commercial (factory-made/"boughten") clothing (made-to-size/off-the-rack) (H.S.)

Hides
Fur
Felt
Cotton
Wool — 3-5, 8
Linen
Silk
Synthetics
etc.

Relative durability and life of different fabrics
Texture

3-5, 8

MAN AT PLAY

GENERAL CONSIDERATIONS

Why do we want to play, relax, be entertained?	
Why do we need to play?	
Play for enjoyment	
Release from pressure/obligations	K-3
Competition/satisfaction of ego	
Psychological need	
Change from routine of work	
Function (even necessity) of dreams	H.S.
Recreation as RE-creation	H.S.
Four-day work week (with increased amount of leisure)	12
Olympic games (ancient and modern)	
Do-it-yourself projects	K-12
Developing personal interests	
Competition in play as a cultural indicator (c.g., American Indian versus modern U.S.)	H.S.
Profitable use of leisure for the elderly	H.S.
Math applications:	
Use of mathematics in sports	
Running	
Climbing	
Keeping scores	K-12
Card games	
Hobbies	
Mathematics and art	

PASSIVE ACTIVITIES

Inactivity/rest	
Ability to feel comfortable alone	
Meditation/prayer	H.S.
Rest days and holidays	K-3
Vacations	K-3
Conversation	
Reading	
Pets	

Hobbies
- Stamp collecting
- Model making (ships, airplanes, etc.)
- Button collecting
- Insect collecting
- Coin collecting
- Cooking
- etc.

K-12

Spectator sports

- HUMOR

Things that are funny — K

Humor and social relations--jokes (ethnic, religious) that are derisive — J.H.

Being able to laugh at self
- Political cartoons
- Art Buchwald
- "Catch 22"
- etc.

H.S.

Cultural basis of humor

- ENJOYING NATURE

Hiking
Jogging
Swimming
Skiing
Bicycling
Gardening/horticulture
etc.

K-12

Nature study
- Herbarium
- Observing animals

K-12

- TRAVELING (see Man in His Physical Environment strand)

Picnics
Short excursions
Vacation travel
Travel in other sections of America
Travel to Europe
Travel to exotic foreign lands

K-12

RECREATION

- Play
  - Make believe
- Toys
- Games
- Sports/athletics — K-12
  - As participant
  - As spectator
- Outdoor sports
  - Competitive sports
    - Track and field
    - Team ball games
    - Individual competition
  - Individual sports
  - Ice and snow sports — K-12
  - Water sports
- Indoor sports
  - Team games
  - Individual sports
  - Personal combat

THE ARTS--active involvement as observer/connoisseur

(see Man as Creator and Explorer strand)

- Primary, secondary colors — K-1
- Color wheel (and interrelationships) — 1-3
- Comedy-tragedy — H.S.
- Musical instruments
  - Percussion
  - Woodwinds
  - Strings
  - etc.
- Painter — K-3
- Sculptor
- Conductor
- Actor/actress
- Singer
- etc.

General appreciation	K-6
Effect on culture	7
Professions in the arts	H.S.

LEISURE INSTITUTIONS IN THE COMMUNITY

Museums	K-12
Zoos/zoo animals Circuses/circus performers Amusement parks	K-6

MAN AS CREATOR AND EXPLORER

EXPLORING THE ARTS

- Early man's innate need to decorate purely utilitarian objects — 7-H.S.
- Probable magical-religious purposes of Palaeolithic art — 7-H.S.
- Emotional-expressive potential of the art forms — H.S.
- Art as:
  - Communication
  - Experience
  - Play
  - Therapy
  - Documentary history (= primary resource material) — H.S.
  - Development of the total man
  - Vocation/profession
  - etc.
- Art forms (Fine Arts)
  - Visual arts
    - Drawing
    - Printmaking/graphic arts
    - Painting
    - Sculpture
    - Architecture
    - Crafts
    - Photography/film making
  - Performing arts — K-12
    - Theater/drama
    - Opera
    - Dance
    - Instrumental music
    - Vocal music
    - Poetry
    - Literature
- Applied arts
  - City planning
  - Interior design
  - Furniture design
  - Industrial design
  - Advertising design
  - Fashion design
  - Theater design

  — H.S.

Structure of the arts

Art

Elements of design

- Line
- Form (shape)
- Color
- Texture
- Value (light/dark)
- Space

Principles of design

- Unity (harmony)
- Similarity
- Repetition
- Emphasis
- Movement (direction)
- Balance
- Contrast (variety)
- Rhythm
- Proportion
- Tension
- Transition

K-12

Music

Organization

- Melody
- Rhythm and meter
- Harmony
- Tone
- Tempo

K-12

Systems of order and organization

- Form
  - Ternary
  - Binary
- Musical notations
  - Clefs
  - Time values

H.S.

Music elements

- Beat
- Meter
- Half notes
- Quarter notes
- Eighth notes
- Melodic rhythm
- Rhythm patterns
- Rests

J.H.

Melody
- Tonal patterns
- High and low tonal patterns

Form
- Like and unlike phrases — J. H.
- Solo--chorus style
- Sequence
- Repeat sign
- Understanding sounds

Expressive qualities of music
- Expressing oneself through music
- Listening for mood
- Dynamics
- Tempo

Ear training — K-12
- Playing by ear
- Playing instruments
- Sounds--near and far (K-2)
- Rhythm and melody games for recapitulation of learning

Musical forms
- Sonata
- Song
- Fugue
- Ballad
- Carol
- Hymn
- Spiritual
- Lullaby
- Madrigal
- Round — J. H. -H. S.
- Concerto
- Etude
- March
- Overture
- Serenade
- Symphony
- Oratorio
- Folk music
- National anthem
- etc.

- Musical instruments
  - Stringed instruments
  - Woodwind instruments
  - Brass instruments — J. H. -H. S.
  - Percussion instruments
  - Whistle-type instruments
  - Reed-type instruments
  - Electronic instruments
- Famous musicians
  - Bach
  - Beethoven
  - Brahms
  - Chopin
  - Debussy
  - Handel
  - Mendelssohn — 10, because they are all European
  - Mozart
  - Prokoviev
  - Ravel
  - Schubert
  - Strauss
  - Tchaikovsky
  - Vivaldi
  - Wagner
  - etc.

- Poetry
  - Elements
    - Meter
    - Rhythm
    - Rhyme
    - Word order
    - Stanzas
    - Sound (alliteration, etc.) — J. H. -H. S.
    - Imagery
  - Types
    - Lyric
    - Narrative
    - Epic
    - Dramatic

Forms
- Elegy
- Sonnet
- Haiku
- Limerick
- Ballads
- Odes
- etc.

J. H. -H. S.

Prose
- Elements
  - Plot
  - Setting
  - Style
  - Mood
  - Tone
  - Theme
- Forms
  - Short story
  - Novel
  - Essay
  - One-act play
  - Three-act play
  - Journalistic reporting

J. H. - H. S.

Dance
- Techniques
  - Steps
  - Body position
  - Arm and leg movements
  - Mime
  - Jumps
- Styles
  - Ballet
  - Classic
  - Folk
  - Modern
  - Ballroom
  - Ethnic origin
  - etc.

J. H. -H. S.

Choreography

H. S.

Painting

- Types of paint (painting media)
  - Oil
  - Watercolor
  - Pastels
  - Casein/gouache — H.S.
  - Egg tempera
  - Synthetic media
  - Fresco
  - etc.
- Sources of pigments — 7, H.S.
- Subject matter
  - Landscape
  - Portraits
  - Figures
  - Still life
  - Genre (everyday life) — 7, H.S.
  - Historical/allegorical/religious themes
  - etc.

Crafts
(As related to social, cultural, technological development--7, H.S.)

- Ceramics
- Wood
- Leather
- Glass
- Basketweaving
- Weaving
- Jewelry making — K-12
- Batik/tie dye
- Plastics
- Macrame
- Metal-enamel
- etc.

Pantomime
Roleplaying — K-12

Mythology/folklore/legend
Fairy tales (K-6)
Nursery rhymes (K-2)
Literary criticism
Fiction/nonfiction — J.H.-H.S.
Essay
Novel
Science fiction

Historic study of (including non-Western periods and areas)
Art
Music
Drama
Literature — 5-12
Poetry
etc.

19th and 20th century art movements that are chronologically from realism toward (and finally completely to) abstraction:
Academism
Neo-Classicism
Romanticism
Impressionism
Post-Impressionism — H.S.
Fauvism
Expressionism
Cubism
Futurism
Non-Objectivism
Neo-Plasticism

Development of Discrimination skills
Shape/texture/color coordination
Development of Manipulative skills
Movement/grace/control/neurological and motor coordination
Gross motor (K-1)
Appreciation/Participation development
For the appreciation of others — K-3
Pleasure
Pride
Betterment of the environment
Means of livelihood
Health
etc.

Famous	
Artists	
Actors	
Authors	7
Musicians	
Poets	
Architects	
Familiarity with their works	
Receiver-audience roles/relationships	H.S.
Expressiveness as related to self-image--a conscious study of	H.S.
Role of art in education, social, and psychological development	H.S.
The aesthetic experience	
Art, music, drama, dance as communication	K-12
Creative writing (by dictation--K-2)	3-12
Joke writing	3-6
Planning	5-12
Use of personification, metaphor, simile	J.H.
Recognition of various writing styles	H.S.
Journalistic skills	J.H.-H.S.
Map skills	3-4
Problem-solving	K-12
Organizing knowledge and information	5-12

EXPLORING NEW HORIZONS

Major explorers	
Columbus	
De Gama	
Drake	
Magellan	4, 5, 7
Marco Polo	
Discovery of America	
Arctic explorations	
Viking voyages	

Travel books/National Geographic magazines (as fantasy-producers)	
Climbing Mt. Everest	
Exploring the oceans	
Travel to the moon and exploration of outer space Astronaut	K-6
Developing the West (gold rush) Lewis and Clark expedition etc.	8

EXPLORING THE LIMITS OF RESOURCES AND IDEAS

Man as inventor, explorer, discoverer, restless re-arranger	K-12
Astronomy	H.S.
Spirit of scientific inquiry	K-12
Research application in experimentation	H.S.
The scientific process of investigation Difficulties of applying it to complex human affairs	H.S.
Importance of microscope and telescope in investigating the unknown	J.H.
Famous scientists and their discoveries Famous inventors	4, 7
Famous medical discoveries Anaesthesia Penicillin Acupuncture etc.	7, 10
Development of writing Invention of printing Establishment of libraries Invention of photography Invention of audio recording/taping Invention of microfilm Invention of the motion picture camera etc.	7

Major inventions

Wheel	Laser
Control of fire	Vacuum cleaner
Timepieces (clocks)	Washing machine
Electric light	Xerox
Refrigeration	Zipper
Air conditioning	Scissors
Printing	Conveyer belt
Radio	Elevator
Motion picture	Escalator
Telegraph	Pipeline
Telephone	Subway
Television	Suspension bridge
Automobile	Jet propulsion
Airplane	Radar
Railroad	Sonar
Rockets	Atomic bomb
Computer	Gunpowder
Iron lung	Cannon
X-ray	Dynamite
Cotton gin	Machine gun
Sewing machine	Gas mask
Steam engine	Guided missile
Milking machine	Helicopter
Cement/concrete	Submarine
Plywood	Boomerang
Adding machine.	Microscope
Cash register	Telescope
Dictaphone	Loom
Tape recorder	Cire perdue
Phonograph	cast
Camera/photography	Welding
Typewriter	Turbine
Paper	Dry cell battery
Pneumatic tube	etc.

4-7

Design and machanics of the above inventions (See The Way Things Work, Vols. I and II, Simon and Schuster: 1967; and Richard Koff, How Does it Work?, Signet: 1961.) H.S.

Mathematics as a tool to predict H.S.

Math and science as creative efforts

Concept of zero in mathematics	K-2
Archaeology Prehistoric times Anthropology Finding cures for diseases	J. H. -H. S.
Nobel Prize Pulitzer Prize Patent Copyright Trademark	H. S.
Conquered diseases (smallpox, polio, malaria, etc.) Quest for cure for cancer etc.	4-7
Herbs Medicines Drugs/pharmaceuticals	J. H.
Heart (and other organs) transplants	H. S.
New technological advances in architecture which changed the face of architecture Structural steel eliminates need for load-bearing walls "Shotcrete" (free-form sprayed concrete) Cantilevering Geodesic dome (Buckminster Fuller) Elevators make multi-level buildings possible, reducing land-space needs Modular housing Pre-fab buildings Mobile homes/trailer courts etc.	H. S.
Invented materials (which are as indispensable as natural resources) Glass Paper Plastics etc.	2-4
History Development Uses	5-7
Local industries	3-5

Egyptian hieroglyphics Chinese pictographs/ideographs	7
U. N.'s instantaneous translation system Attempts to use computer to translate languages Effect of data processing on planning and inventory control Importance of measurement and observational equipment in diagnosing diseases Use of the computer to diagnose and prescribe in medicine The computer as a tool for planning for the future, Buckminster Fuller's World Game	H. S.
Louis Pasteur Eli Whitney Copernicus Galileo Jonas Salk Sir Joseph Lister Sabin van Leeuwenhoek Koch etc.	4, 7
Math application Use of proportions and scale drawing (J. H.) Time zones Map reading	3-6

MAN IN CONFLICT

INTERNAL

What do you consider worth fighting/dying for? Is anything worth dying for? Responding to peer pressure Adhering to rules and laws Making choices Knowing what is best for me Differing between emotion and reason Dealing with the unfamiliar, trying new things Using problem-solving skills.	K-12,. Important at every grade, every lesson. Teacher role important.

INTERPERSONAL

Jealousy Arguments/misunderstandings/disagreements	K-3
Personality conflicts	H.S.
Self-defense/defensiveness	J.H.-H.S.
Defense of family Defense of property	1-6
Ownership/sharing	K-2
Competition	
Concept	K-2
Economic	J.H.-H.S.
Duel	4, 5
Feud--Hatfields and McCoys (Kentucky)	3-5
Vendetta	6-7
Peace pipe	3-5
Biases/prejudices	2-12
Honor	J.H.-H.S.
Locks, keys (protecting personal property)	5-7

INTERGROUP

Athletic competition	K-12
Physical games (e.g., football) as a substitute for uncontrolled aggression and combat	H.S.
Political philosophies Parties Campaigns Liberal, conservative	J.H.-H.S.
Religion	H.S.
Causes of conflict Protection Preservation Aggression Offensive/defensive Nationalism Economics Power	H.S.
Supply and demand (as source of conflict), haves and have-nots	J.H.
Federal versus state's rights	11, H.S.
Early conflicts between new settlers and American Indians	4, 8, 11
Biographies of human rights leaders (e.g., Martin Luther King, Jr.)	4, 8, 11
Opinion-based biases/propaganda, mass persuasion	H.S.
Defense against Unethical business Unjustified accusation Anarchy	H.S.
Social group pressure Infringement of personal rights/privacy Persons from whom you personally invite no retaliation Skyjackers/kidnappers/demonstrations/ riots Unwanted mail Offensive and superfluous advertising	J.H.-H.S.

Unsolicitated sales approaches
Crippling strikes — H.S.
etc.

Conflict in cities as a result of
Crime
Overcrowding
Intolerable conditions — J.H.-H.S.
Discrimination
etc.

Racial hatred and injustice as source of conflict

Protection of ideas, inventions, written work
Patents
Copyrights — H.S.
Trademarks

Math application
Business conflict (bankruptcy) — H.S.

- INTRANATIONAL

Civil order
Personal safety (K-6)
Crime
Police
Jails/prisons
Capital punishment
Court of Civil Law
Juvenile courts
Family courts
Detention laws
Martial law
Rights of victim — H.S.
Bail--availability, bondsmen
Legal technicalities
Prison reform
Question of Attica
Use of National Guard
Rights of offender
Rights of minors
Detention facilities (none for juveniles in Utica)
Question of gun control

Problem: complete elimination of crime would take immense power, and immense power usually means tyranny	H.S.
Graft Organized crime Bribery Political corruption Keefe Commission	H.S.
Vandalism/pillage/plundering/looting/pirating/marauding Gang warfare	J.H.
Self-defense Karate Judo etc.	J.H.-H.S.
Conflict over personal beliefs, moral convictions, life style, etc.	J.H.-H.S.
Civil War Regionalism Competition for Federal funds Tourism World Series New business Political conventions etc.	H.S.
FBI, CIA--Who controls?	H.S.

INTERNATIONAL

Threats of war and actual war as traditional "solution" to problems between people and nations	H.S.

Major wars throughout human history
- Wars of Rome
- Exploits of Alexander the Great
- Crimean War
- French Revolution
- Mexican War
- Spanish American War
- Revolutionary War
- Civil War
- World War I
- World War II
- Korean Conflict
- Vietnam
- Six-Day War (Arab-Israeli)

J. H. -H. S.

Weapons of warfare
- Stones/rocks
- Sticks/clubs
- Slingshot
- Bow and arrow
- Crossbow
- Knives/dagger/spear/sword
- Catapult
- Cannon
- Guns
- Tanks
- Bombs
- Atomic bomb
- Chemical warfare
- Defoliation
- Napalm
- etc.

J. H. -H. S.

Cold war weapons
- 5th column
- Economics
- Diatribe
- Propaganda
- Intelligence
- Counter-intelligence

J. H. -H. S.

Military tactics/military strategy
Logistics
History of military training and preparedness

H. S.

Ethical-moral issue re:	
Use of atomic bomb	
Napalm	
Cloud seeding/bombing the dikes	
Use of war itself	
Geneva conventions (= "civilized" ways of killing people)	
Biological warfare	H.S.
Saturation bombing	
My Lai massacre	
Amnesty	
Military-civil surveillance of the individual	
Brainwashing	
Indiscriminate bombing	
War and aggression as personal and national values--glorification of war (e.g., Vikings, Japanese warrior class, Hitler, etc.)	H.S.
Machismo	
Gloridication of the military	H.S.
Armed forces/military services	
Army	
Navy	
Air Force	
Marine Corps	8
Coast Guard	
National Guard	
Volunteer army	
Psychology of defeat	
Psychology of victory	
Idea that the "winner" is never "guilty"	H.S.
Does might make right?	
Cold war	
Power alliances	H.S. (11)
Prisoners of war treatment	
Hostages	H.S.
Slaves captured in warfare	

Problem of Hitler and the extermination of the Jews	
Japanese incarceration in U.S. detention camps during World War II	H.S.
U.S. massacres of the American Indians	
Neutrality	
Diplomacy as a means of preventing war; war as a consequence of poor diplomacy	
Positive diplomacy in such organizations as the Peace Corps	H.S.
Espionage (7)	
Sabotage	H.S.
Traitors/treason	
Peaceful roles of military	
Education	
Diplomacy	
Engineering	H.S.
Research	
Medical advances	
Disaster assistance--Red Cross	
Famous generals, conquerors, etc.	
Alexander the Great	
Napoleon	4,
Lee	J.H.-H.S.
Grant	
etc.	
Bomb shelters (public and private)	H.S.
ICBMs	
Arms race	H.S.
Documentation of war (and conflict in general)	
Recordings	
Books	
Paintings/sketches	
Photographs	
Television--"living room battlefield"	
War correspondents	
Historians	
Memorabilia	4-12
Museums	
Censure	
Right of public to information	
Pentagon Papers	
Surveillance	
etc.	

Manifest destiny/imperial design Idea that "God is on our side"	H. S.
Crimes against oneself versus crimes against others	H. S.
Glamourizing war to those not directly involved War profiteering	H. S.
Dressing for combat Armor Indian war paint Shields Uniforms Insignia Crests etc.	4-7
Possible function of United Nations in policing world	H. S.
Conflict resolution/conflict management	K-12
Peaceful alternatives to war Negotiation/arbitration Diplomacy Compromise Capitulation Nonviolent resistance Conscientious objection Draft evasion Peace movement Civil disobedience etc.	J. H. -H. S.
Mathematics in war Strategy Statistics Role of mathematics in building the future Space program	H. S.

MAN AND HIS ASPIRATIONS AND FEARS

EXPLAINING THE UNEXPLAINABLE

Who am I?
Where did I come from?
Why am I here?
Where am I going?

H.S.

Man's urge to know
- His divine discontent
- His search for meaning
  - His question of the beginning and the end
  - His question of the purpose of life

Man's development of religion in quest for answer (see Man and His Gods strand) — H.S.

Man's increasing sense of defeat and futility, versus
- Man the incurable optimist
- "Swing Low, Sweet Chariot"
- "We Shall Overcome"

MEN'S FEARS

Pain/suffering
Grief
Death
Failure
Corruptability
etc.

H.S.

Natural calamities
Epidemics
Accidents/bodily injuries

H.S.

Pain as a phenomenon/suffering — J.H.-H.S.

Theories of cause of disease
- Superstitions
- Displeasure of the gods
- Sin/guilt
- Karma
- Germ theory

H.S.

Attitudes toward death
Ideas of the afterlife

K-12

Is there life after "earth death"?	H.S.

THE OCCULT SCIENCES

Occultism	
ESP/mental telepathy	
Clairvoyance	H.S.
Precognition	
Fascination with the satanic/black magic	
ESP/mental telepathy	
Evidence for	
Public attitudes against	H.S.
Atrophied senses	
Superstitions, omens, and lucky signs	
Astrology (Zodiac/horoscopes)	
Divination	
Fortune telling	
Phrenology	
Physiognomy	
Graphology	
Palmistry	H.S.
Numerology	
Colorology	
Tarot	
Teacup reading	
Interpretation of dreams	
Divining rod	
etc.	
Sorcery	
Witch doctors	
Navajo sand paintings	H.S.
Faith healing	
Christian Science approach to healing	
Amulet/charm	
Fetish	
Idol	
Omen	
Oracle	H.S.
Totem	
Trance	
Voodoo	
Witchcraft	

Transcendental meditation	H.S.
Yoga	H.S.
Contemporary mysticism as a reaction to futility and an effort to pierce the spiritual mysteries	H.S.
The power of the unconscious The collective unconscious (Jung)	H.S.
Religious fanaticism The drug culture	H.S.
Luck/chance	H.S.
Hypnotism	

- PHILOSOPHY AS AN ATTEMPT TO PROVIDE EXPLANATIONS

Philosophical fields Ethics Logic Aesthetics Metaphysics	H.S.
Famous philosophers Aristotle Confucius John Dewey Hegel Kant Nietzsche Plato Jean-Paul Sartre Socrates etc.	H.S.

- FANTASY WORLD

Projects to promote imagination Science fiction Eschatology etc.	3-6

Imaginary animals
- Dragon
- Chimera
- Unicorn
- Griffin
- Sphinx
- Mermaid
- Minotaur
- Centaur
- Satyr
- Werewolf
- Sea serpent
- The Abominable Snowman
- Bigfoot
- etc.

3-6

Ghosts
- Ghost stories

3-6

Gobelins

Giants
Fairies
Witches
Genii
Elf
Leprechaun
Brownie
Nymph
etc.

3-6

- EXPLORING THE UNKNOWN (see Man as Creator and Explorer strand)

Man's quest for Utopia
- Utopian experiments

Ponce de Leon and the Fountain of Youth
King Arthur and the Holy Grail
Search for Shangri-La
Man's will to prevail to conquer the unknown
- The spirit of scientific inquiry
- The exploration of space
- Moon landings
- Elimination of disease
- Mathematics as a tool to predict (see Man as Creator and Explorer)

The Colonial period in America The Westward movement Colonialism and aspirations toward self-realization everywhere--desire for freedom and independence	4, 8, 11

PREDICTING AND PLANNING FOR THE FUTURE

Predicting future possibilities in Transportation Communication Science Medicine Education Architecture etc.	J.H.-H.S.
Planning cities of the 21st century	J.H.-H.S.
Lack of stability in such a rapidly changing world as ours (Future Shock)	J.H.-H.S.
1984 Science fiction as an indicator of future inventions	H.S.
Prophecy Major prophets Moses Isaiah Ezekiel Jeremiah Leonardo da Vinci Jules Verne H.G. Wells	H.S.
Math application: Probability--relation to change and luck (gambling)	H.S.

MAN AND HIS GODS

THE RELIGIOUS QUEST

Who am I?
Where did I come from? (Who made me?)
Why am I here?
Where am I going? (afterlife)

Need to worship a Being greater than self
Need to commit one's self to a cause
Need to seek answers to questions of origin and of hereafter — H.S.

Right of every man to worship as he pleases
- Agnostic
- Atheist — 4-6

Ideas re: purpose of life:

WORLD RELIGIONS

Various religions men have developed (and their major beliefs) (N.B.: avoid comparisons since this approach often assumes ethnocentric and heirarchical values)
- Hinduism
- Buddhism
- Confucianism
- Judaism
- Islam — H.S.
- Christianity
  - Catholics
  - Protestants (including various denominations and sects)

Ancient religions:
- Greek/Roman gods
- Mythology
- Egyptian gods — H.S.
- Norse gods
- etc.

Magic
Ritual
Cosmology
Mythology — H.S.
Astrology
Animism
Luck and chance

Famous religious figures:
- Allah
- Baal
- Brahman
- Jehovah
- Jesus Christ
- Siva
- Vishnu — 7, H.S.
- Buddha (Gautama)
- Mohammed
- Zoroaster
- Dalai Lama
- St. Paul
- etc.

SACRED SCRIPTURES, PLACES, AND OBJECTS

Bible
- Old Testament
- New Testament

Ten Commandments
Koran
Bhagavad-Gita — 7, H.S.
Rig-Veda
Ramayana
Talmud
Torah
etc.

Translations of the Bible
- Septuagint
- Vulgate
- Douai Version — H.S.
- King James Version
- Revised Standard Version

Bible as literature
Bible as prophecy
Bible as historic record — H.S.
Bible as God's word

Sacred mountains (e.g., Mt. Fuji/Mt. Sinai)
Sacred rivers (Ganges/Jordan)
Sacred trees (Bo Tree)
Sacred cows in India
Icons
Images
Idols — 7, 10
Ark of Covenant
Relics
Rosary beads
Prayer wheels
Sacred stones

Religious places
- Holy Land (holy to three religions--Judaism, Christianity, Islam)
- Mecca
- Ganges River — 7
- Salt Lake City
- Vatican
- etc.

MATERIAL ASPECTS OF WORSHIP

Religious symbols
- Star of David
- Cross
- Moslem star and crescent
- Fish
- Dove
- etc.

Religious architecture
- Shrine
- Chapel
- Church — 3-4, 7
- Cathedral
- Synagogue
- Tabernacle
- Temple
- Mosque
- Pagoda
- Wailing Wall
- Altar
- etc.

Forms of worship:
- Meditation
- Fasting
- Prayer
- Preaching
- Church attendance
- Ritual
- Sacrificial offering — H.S.
- Relating to other men
- Missions/missionaries
- Benevolences/charities
- Tithing
- Faith healing
- Revelation
- Mystical experiences
- etc.

Private worship/corporate worship
Formal worship/informal worship — H.S.

Religious rituals
- Rites of passage
- Birth rituals (e.g., baptism, circumcision, christening, etc.)
- Death rituals (wakes, burial, cremation, mummification, etc.) — H.S.
- Life stages rituals (puberty, communion, Bar Mitzvahs)

RELIGIOUS OFFICES

- Priests/ministers (ordination)
- Monks
- Nuns
- Holy men — 3-4
- Prophets
- Missionaries

- Saints of the Catholic Church
- Pope
- Cardinals — 4
- Bishops
- Monastic orders of the Catholic Church

RELIGIOUS CONCEPTS

Concepts of life after death
Reincarnation
Heaven
Hell/Devil
Angels/Archangels
Confirmation
Catechism
Baptism
Communion
Fundamentalism
Golden Rule
Halo/nimbus
Holy family
Holy Ghost
Messiah/Saviour
Millennium
Paradise
Resurrection
Sacrament
Trinity
Altar
Holy Water
Icon
Incense
Rosary
Fasting
Euthanasia
Crusades
Pacifism
Creed
Pantheism
Polytheism
Predestination
Free will
Separation of church and state
Supreme being or power
Heresy
Divine right of kings
Shaman
Talisman
Medicine man

H.S. (and for Utica, part of religious education through the grades)

Mana (impersonal power)
Faith
Miracles/cures
Sacred objects and places/pilgrimages — H.S.
Revelation
Taboos

Eating restrictions
- Vegetarianism
- Kosher food--dietary laws
- Sacred cows in India
- Taboos (Why do we eat cows but not horses?) — 7, H.S.
- Cannibalism (as a means of obtaining the other person's spirit)

Religious communities (and their life styles)
- Shakers
- Mennonites
- Amish
- Mormons — H.S.
- Quakers
- etc.

MISCELLANEOUS CONSIDERATIONS

Religious intolerance
- Anti-Semitism
- Martyrdom
- Persecution
- Crusades — H.S.
- Inquisition
- Ku Klux Klan

America as a place of religious refuge
- Pilgrims
- Jews
- Society of Friends — 4, 8, 11
- etc.

Persecution of the Jews
Persecution of the Christians — H.S.
Catacombs

History of the early Christian Church	7
Role of the Church in Medieval Europe Reformation	10
The arts in service of religion	
Sacred music	
Religious painting	
Passion Play	H.S.
Statues of Buddha, Christ, Saints, etc.	
Votive figures	
etc.	

THE LEARNING EXPERIENCE

(Basic Skill Needs for the Acquisition of Knowledge)

(N.B.: The Utica Elementary Schools have developed an excellent Elementary Reading Skills Guide (September 1971) and an equally fine guide for the Mathematical Skills (August 1972). These should both be incorporated into this section.)

(N.B.: Similar skill level assessments as appearing below for the Kindergarten level should be made for each grade level. Upper levels, in addition to the categories listed here, would also add "Writing." Reading and Math skills have been omitted from this listing since they are covered in the above-referenced guides.)

SKILLS ON THE KINDERGARTEN LEVEL

Listening skills (auditory perception)
- To teacher
- To each other
- To story
- For directions
- To sounds (ears, trucks, etc.) (gross/fine)
- To music
- Attention span

Speaking skills (ability to use their own language)
- Name-address
- Getting acquainted with peers
- Dramatizing
- Making personal needs known (bathroom, drink, paper, books, crayons, etc.)
- Singing
- Finger-play
- Rhymes

Observing (visual perception/spatial relationships)
- Traffic lights
- Color differentiation
- Shapes
- Likes and differences
- Developing sensory awareness

Motor skills
- Large muscle movements
- Small muscle movements
- Throwing, catching
- Jumping, running, skipping, balancing
- Writing
- Crayons
- Painting (easel and fingerpainting)
- Cutting
- Pasting

Classification
- Fruits, vegetables
- Animals
  - Zoo, circus, pets
- Shapes
- Letters
- Seeds, shells, rocks

Reading
Writing
Composition
Spelling
Penmanship

Vocabulary
Grammar
Phonetics
Semantics
etc...

Synonyms
Antonyms
Homonyms

Listening skills (How well do we listen?)
- Listening for:
  - Details
  - Facts
  - Opinions
  - Inferences
  - Comparisons

Thinking skills

Oral and written expression

Use of:

- Dictionary
- Thesaurus
- Encyclopedia
- Atlas/maps
- Cross references
- Footnotes
- Glossary
- Index
- Table of Contents

Study skills
Information gathering
Information organizing
Library
Writing a report
Outlining
etc.

Mathematics skills

- Addition
- Subtraction
- Multiplication (including multiplication tables)
- Division
- Fractions
- Percentages
- etc.

Typing
Shorthand

4. GENERAL CURRICULUM COVERAGE BY GRADE LEVELS

Please refer to Section 3 of this report for general assignment of the topics and issues to specific grade levels. These are presented as indicators rather than as binding commitments.

In this section, our concern is with a more theoretical level. The chart which follows illustrates how concepts are intended to flow from grade to grade and from strand to strand. It also assumes that there will be continuity in both directions and that each level will build on the preceding one. No topic is meant to be presented in isolation. At any given grade level, there has been an attempt to relate all the strands to each other.

Especially in the lower grades it is essential that students not be forced to follow the chart exactly. Some may be obviously ahead or behind the particular point where the chart shows they should be. In other words, the chart should be interpreted flexibly.

The coverage suggested here is only one of several ways which might be advocated, but it is a way, we feel, which is completely compatible with the model itself, starting with the self and expanding outwards. By the time a student has reached high school under this plan, he should have enough data to know how he has become what and who he is, he should be well aware of what the options and their consequences are, and be able to make meaningful decisions.

THREE	FOUR	FIVE	SIX
Relating to people I don't know and don't see. Their effect on me.	Regional interrelationships.. Their effect on me..	Relating to people who lived before me. Their effect on me.	World-wide interrelationships. Their effect on me.
Sense of how other people in my town make my life possible or difficult.	Sense of how people in other regions make my life possible or difficult.	Sense of how people who lived before me make my life what it is.	Sense of how people in other countries make my life what it is.
Families in other parts of the city.	Families in other regions.	Families in other times.	Families and friendship patterns in other cultures.
City is made up of many communities. How they are alike and different. How they cooperate or fail to cooperate. Decline of the inner city. Communities unlike mine -- rural, suburban.	Regional cooperation. Interregional dependence. Regionalism. Types of communities in each.	Needs common to all communities. How and why communities have survived or collapsed over time. Elements which bind a community - economics, politics, tradition, language, culture, etc.	The international community. Ways countries cooperate with one another. Similarity of needs. Dissimilarity in resources and in ways of meeting needs.
Development of the urban environment and comparison with communities which are physically different.	Natural regions of the U. S. and their physical characteristics. How man has exploited them. How physical differences affect the life in each.	Physical environments - natural and man-made. Effect of natural environment on history.	Natural physical environments and their effect on world relationships. Man-made environments as shelter, as symbols of culture and ideas.

CURRICULUM	KINDERGARTEN	ONE	TWO
FOCUS MAN	Myself and manipulation of my environment. (Grade 1 continues from K and adds the 2-D world)	Uses two-dimensional representations to manipulate the three-dimensional world.	People and places in my life. Understanding how they relate to me.
AND HIS SELF-IMAGE	Body awareness. Language development. Sense of uniqueness.	Sense of control over symbolic systems: listening, speaking, reading, writing, observing, drawing.	Sense of belonging to family, peer group, neighborhood.
AND HIS INTIMATES	Compares and contrasts his body with others in the class.	Uses symbolic representations to communicate ideas. Draws, reads, writes, follows directions.	Relating to family and friends.
AND HIS COMMUNITY	Cooperates in group activities, shares, helps others, works alone, respects others who are working alone.	Uses and interprets symbolic representations to order his environment, e.g., clock, weather chart, stop sign, stop light, pictographs, color codes, calendar, letters, numbers, +, -, =.	People and places in the neighborhood. Jobs, common signs and symbols. Ways people cooperate or fail to cooperate.
IN HIS PHYSICAL ENVIRONMENT	Orients self in space. Balance and direction. Climbs, runs, walks, throws, stands, sits. Puts things in their place.	Orients self in two-dimensional space. Top, bottom, front, back of book. Right to left eye movement. Shapes, textures, smells, colors, sizes in two-dimensions and relates them to real world.	Describes home, school, neighborhood environment - natural and man-made. Functions of and needs for things in that environment.

JUNIOR HIGH	SENIOR HIGH
My counterparts in time and space. Their self-image, and interrelationships with other people, other regions, other times, and other places in the world.	People: the problems they share, their alternative solutions. Comparative systems. Alternatives for my life.
Sense of how being me here and now is different from being someone else "there" or "then".	Sense of being part of the human race having both responsibilities to others and choices for self. Knowing and accepting self.
Evolution of family, friendship patterns, and intimate relationships through time and space.	Interpersonal relations: importance of, levels of, development of. Coping with problems
Evolution of human communities through time and space. Systems of organization and adaptation to change.	The individual and his role in various political, economic, and social systems. Common problems and alternative solutions. Personal liberty and community survival.
Evolution of the physical world and surrounding universe. Evolution in man-made environments in response to changing needs and technology.	Living things in communities - biology Effect of physical environment on the individual. Personal space, large group space, community space, open space. Effect of color, shape, size, distance. Problems of space and growing population.

CURRICULUM	KINDERGARTEN	ONE	TWO
AT WORK	Uses tools, builds, hammers, pulls, pushes; role plays (dress-up) people who work in the community (e.g., plays store, fireman, gas station attendant, etc.)	Performs a task by interpreting two-dimensional (graphic or written) instructions. Traces the performance of a task in sequential order from start to finish (verbally, pictorially, diagramatically, photographically), e.g., baking a cake, paving a road, building a treehouse, cleaning a fishbowl, etc.	Describes people, places, and machines in his local environment in terms of their work function (e.g., fireman, firehouse, fire-truck).
AT PLAY	Gross and fine motor coordination. Sharing, playing with others.	Games requiring two-dimensional symbols (e.g., board games such as checkers or monopoly, hopscotch). Amuses self in free time without being disruptive.	Explores various ways to spend leisure time quietly and actively. Reads for pleasure.
AS CREATOR AND EXPLORER	Explores own environment. Creates from a variety of materials (colors, shapes, blocks, scissors). Tries new activities and new materials.	Creates in two dimensions (draws, paints, makes collages, etc.).	Understands that the town he lives in and the things in his physical environment are a result of man's exploration and creativity (e.g., discovery of the town, making materials, and building the physical environment)
IN CONFLICT	Describes what he does to express pleasure, anger. Selects a means of expressing anger other than physical retaliation against another person.	Identifies causes of conflict in simple stories or in real life situations. Draws or describes orally or with body language how he feels toward another person or toward self.	Common causes of conflict at home, at school, with peers. Ways to resolve those conflicts.

THREE	FOUR	FIVE	SIX
Describes interdependence of people and places in the community (e.g., police headquarters → precinct → local patrolman → courthouse → judge → jail. Or, factory and laborers → outlet → local store → truckers → salesman).	Explains how geographic regions are interdependent; how people in different regions may do different work or similar work.	The evolution of technology accompanied by population growth; effect of the above on jobs, work, production, agriculture, life style.	Present world-wide levels of technology. Degree of world interdependence and reasons for economic extremes among nations.
Leisure time activities available in the community.	Regional differences and similarities in selection of leisure-time activities (skiing, boating, stick ball).	Evolution of games throughout history. Man's inventiveness in providing entertainment (e.g., growth of circus, evolution of baseball, etc.).	Comparison of popular forms of entertainment throughout the world, Olympic games. Competition - is it common to all men?
Builders, creators, inventors in past and present in my town. Inventions that affect my life in the community (steel, light bulb). Local artists, architects, designers, inventors.	Regional differences stimulate invention, discovery, creativity. Major explorers, inventors, artists, and their contributions to improving the quality of life.	Progress of man through history as represented in his discoveries, inventions creative expression. What drives man to venture beyond the familiar and the secure?	Modern man as creator, inventor, explorer. World-wide cooperation and/or competition to explore new worlds (the poles, space) or resolve comm problems (cancer, pollution).
Effects of competition or conflict on my community (separated families, crime, price wars, strikes).	Regional conflict over access to resources, over attitudes and ideas. Civil War, Federal vs. States Rights.	Major historical conflicts, their causes and effects on history. Conflict as a result of unlimited wants; limited resources.	The modern world conflict and interdependence. World wars. Causes of conflicts and ways nations attempt to resolve conflict.

JUNIOR HIGH	SENIOR HIGH
Cultural importance of work and wealth in time and space. Agricultural versus industrial communities. Uniqueness of work in the U. S. (work ethic).	Income, sources of income, and social status in comparative economic systems. Exploring vocational alternatives for self in response to life and work goals.
Games and leisure time activities as they represent various cultures and societies (e.g., American Indian, Victorian woman, etc.).	Problems presented by increasing leisure time due to technology, the shorter work week, increased mobility. "Games people play."
Forms of expression, inventions, discoveries as they evolve through time, as they represent cultures, as they are or are not adopted by various cultures.	The human need to create, discover, explore in various cultural, social, political systems. Conditions that are conducive to creativity, discovery (freedom?). Conditions which discourage creativity and discovery.
Culture, religion, ethnocentrism, political philosophies, as causes of personal and international conflict. Man's potential for coexistence in a pluralistic world.	Common causes and effects of conflict in comparative social and political systems. A world without conflict: possibility and desireability.

THREE	FOUR	FIVE	SIX
Fears and aspirations that are common to most people in my community. What they have done to overcome fears or to fulfill aspirations.	Fears and aspirations as they are affected by where you live and who you know: Media - effect on my fears and aspirations - exposing me to people, places, things, outside my immediate experiences	People in other times - their fears and aspirations. Fear and man's response to change throughout history.	Fears and aspirations as a barrier to world-wide communication. National survival (fear of destruction) and its effect on international cooperation.
Religions that are practiced in my community (city). Places of worship. Why do many people practice a religion?	Regional settlements and their ethnic character, current effect on the religion practiced in that region (Salt Lake, California Missions, China Town).	Development of religious practices in the U. S. Religious freedom and the puritan ethic. Immigrations and the introduction of religious diversity.	Major world religions, religious figures. Religious composition of nations and the effect on intra-national (Pakistan, England/Ireland) and international (India/Pakistan, Israel/Egypt) cooperation.

127 A

CURRICULUM	KINDERGARTEN	ONE	TWO
AND HIS ASPIRATIONS AND FEARS	Describes likes and dislikes in general terms. Describes the feeling of being afraid. Suggests, discusses how he might cope with fear.	Describes admirable qualities in family and friends. Identifies likeable characters in stories. Identifies fears in story, television, movie characters; cause of the fear and means of overcoming it.	People, places, and things I know - pleasing elements, fearful elements. Exploring what causes feelings in me. Differences between fantasy and reality as they contribute to fear (e.g., haunted house, authority figure, dogs, darkness, situations providing success or failure, etc.).
AND HIS GOD	Using materials in the classroom, builds a church (synogogue, temple) and describes or role plays what occurs in the building.	Identifies religious symbols (cross, Star of David), pictures (church, priest, person in prayer), and names various religions practiced in his neighborhood (Catholic, Methodist, Jewish, Baptist).	Identifies people and places in the neighborhood that have a religious significance (church, synagogue, minister, priest, nun, rabbi, elder, cantor); Christian and Jewish holidays.

JUNIOR HIGH.	SENIOR HIGH
Fears and aspirations as a result of society's molding of the individual (e.g., aspire to make money or fear of strangers).	Identifying and dealing with personal fears and aspirations as they affect life goals.
Religion (its doctrines, writing) as it affects cultural practices in time and space (marriage, eating habits, roles of political leaders, dress, morals, artistic expression, etc.). Does man need religion?	Religions and philosophies in comparative political and social systems as an attempt to answer difficult questions (Why am I here? Where did I come from? What is death?). Exploring personal spiritual needs.

Between the steps of laying out the theoretical directions indicated in the preceding chart and actually building the curriculum units, we are suggesting the need for an intermediate step such as the one illustrated below. Such a procedure would span the distance from theory to specifics by relating the topics and issues on our coverage list. This step has been completed for the strand Man In His Community so that it might serve as a guide to performing the same task for the other strands.

- Organization -
  - People
  - Places
  - Processes
  - Distribution of people, places, processes
    - -- Kindergarten
      People - Who am I? Self as family member. Self as part of a generation; peer group.
      Places in my community - home, school, stores in immediate environment.
      Modes of travel.
    - -- 1st Grade
      People - Who are the people around me? Friends, peers, teachers, community.
      Getting to know my neighborhood. Distances, directions.
      Finding my way in my neighborhood.
    - -- 2nd Grade
      People - Who are the people in my community? Roles, races, religions, nationalities, leaders, age groups - the oldest person in my community.
      Communities that are different from mine. Rural/urban.
      Using public transportation.
    - -- 3rd Grade
      People in my city - Where they live. What they do. How they live.
      People in other cities - Roles, races, religions, nationalities, languages, life styles.

Other places - other cities.
How people in other places travel.

-- 4th Grade
People - Geographic distribution - U.S. Farms, small towns, suburbs, cities, metropolitan centers, metropolis.
People - distribution in other lands.
Other places - other lands.
Distance, time, rate of speed, and modes of travel.

-- 5th Grade
People from other times. Western Hemisphere.
Comparing places in the modern Western Hemisphere; their evolution through history.
Transportation and growth of the Western Hemisphere, especially discovery and expansion of the U. S.

-- 6th Grade
People around the world.
Places in the modern world - their evolution through history
Emphasis on architecture of human dwellings.
Technology and transportation throughout history.

-- Junior High
Great men in history.
Evolution of the human race.
Man as unique from other animals.
Evolution of building and architecture.
Animal dwellings - habitats.
Adaptation - animals and man.

-- High School
Life and death - man's role in various cultures. Man's need for: freedom, social relationships, love, success, power, etc.
City planning - for a better environment.
Rebuilding the inner city - alternatives.
Psychological effects of space and arrangement of space: tent, cathedral, in Peking, in Paris, in New York, etc.

Cooperation

- Needs

- Goods and Services

- Access to Goods and Services

  -- Kindergarten
  Helping at home and at school.
  Things I want and need. Trading, buying, selling, barter.

  -- 1st Grade
  Working together - sharing responsibility.
  Working to earn money. Money - media of exchange.
  How families spend money.

  -- 2nd Grade
  Human needs. How families cooperate to meet each others' needs.
  Families spend money differently according to values.
  Supply and demand.
  Banking, savings.

  -- 3rd Grade
  Community needs.
  Providing goods and services in the community: jobs, careers.
  Competition - profit, losses, cost, price.

  -- 4th Grade
  Regions of the U. S. - How people cooperate throughout the country to meet the needs of Americans everywhere.
  Production of goods in U. S. regions.
  Satisfaction of needs: in warm climate, cold climate, deserts, outer space, during natural disasters.

  -- 5th Grade
  Trade in the Western Hemisphere. Role of trading in U. S. history.
  Trade - import and export.
  Satisfaction of needs: caveman, early civilization, nomads, in wartime, in isolation - Robinson Crusoe.

  -- 6th Grade
  History of world trade. A look at modern trading practices (relationships).
  Man's unequal access to goods and services within the country and throughout the world: natural resources, production, international wages, prices; diet, health, housing - international comparison.

-- Junior High

International cooperation to meet national needs: treaties, alliances, trade, empire building, balance of power, Third World.

Gross National Product. Growth through history - reasons. Distribution of Gross National Product - minorities/whites, men, women.

Government spending - budget priorities.

Public supports to: unemployed, farmers, business, handicapped, aged - international comparisons.

-- High School

Economic causes of war through history. Comparative economic systems. Competition in different cultures.

Access to goods and services. Changing lifestyles dependent on income, education - employment practices. Inflation, depression.

An in-depth look at medical services - U. S. and abroad.

Socialization

- Self

- Groups

- Societies

-- Kindergarten

Who am I? Appearance, religion, interests, experiences, background, likes, needs.

-- 1st Grade

How do I relate to others? Friendship, honesty, trust.

-- 2nd Grade

Relating to others in formal and informal groups: classes, clubs, gangs.

In social settings: introductions, etiquette, manners.

-- 3rd Grade

Community groups: professional, service, fun, church, political, merchants.

Why we form formal associations.

Why we form informal groups.

Group norms. Peer pressure.

-- 4th Grade
Groups which comprise the U. S.: racial, ethnic, national, religious. Political parties.
National symbols, rituals, customs.

-- 5th Grade
Social development of the U. S.: class, strata, status symbols, immigration and social acceptance, slavery.

-- 6th Grade
Social relationships throughout the world: caste system in India, racism, sexism.
Customs of dress throughout the world.

-- Junior High
Social evolution of the U.S.: American heritage, American Indians, Indians of New York, life in Early America, melting pot versus pluralistic society, growth of cities, and changing human relations.
Social problems: discrimination, juvenile delinquency, generation gap, crime, drugs, civil disorder, hunger.

-- High School
Societies in transition: acculturation, modernization in Third World, lack of stability in fast-changing society, future of institutions such as marriage.
Conforming to social pressures: acceptance/rejection, sensitivity, defensiveness/inhibitions, empathy, ability to express oneself.
Social problems: unemployment, classism, urban decay (housing), drugs, mental illness, suicide.
Comparative look at other social systems.

Communication

-- Kindergarten
Listening, speaking, "reading pictographs, symbols," drawing, giving names to letters and numerals, hearing stories.

-- 1st Grade
Decoding, reading, speaking, group-discussions, math symbols.

-- 2nd Grade
Decoding, reading independently, foreign language (begin).

-- 3rd Grade
Letter writing, story writing, expository writing, communication media, Roman numerals.

-- 4th Grade
Oral reporting; photography; reading newspapers, diagrams, maps, charts; reading music.

-- 5th Grade
Language families.
International travel symbols.
Town meeting, debate.

-- 6th Grade
Latin and Greek roots.
Manipulative - advertising.
Braille, sign language.

-- Junior High
Filmmaking.
Journalism.
Figures of speech (metaphor, simile, pun, irony, sarcasm).
Dead languages.
Deciphering languages (Linear "B").
Manipulative - editorials (commentary).
Brainwashing.

-- High School
Media as molders of public opinion: polls, propaganda, detecting propaganda, persuasion techniques, personal influence.
Evolution of English alphabet.
Development of Esperanto and Esperazo.
Vocations in speaking, reading, writing.
Translation, problems of.
Dialect, slang, jargon.
Levels of communication.
Language differences as an international barrier, national barrier (Asia, Canada, New York City).

Regulation

- Law
- Civil Order
- Administration
- Individual and the System

- Change

  -- Kindergarten
  Rules at home, making family decisions, enforcing family rules.

  -- 1st Grade
  Rules and laws in school, law or rule enforcement at school, school government.

  -- 2nd Grade
  Rules and laws in the community.
  Police, lawyers, judges, trials.
  Local government and its effect on my community: garbage, traffic, safety.

  -- 3rd Grade
  Reason for law: city codes, traffic, zoning, pollution.
  City officials, county officials.
  Reasons for government: city, state.
  Civic responsibility.
  Symbols: rules governing respect for the flag, Statue of Liberty, Liberty Bell.

  -- 4th Grade
  Contracts.
  Resolution of arguments and misunderstandings.
  Branches of government: Executive, Judicial, Legislative.
  Parties, elections, conventions.
  Citizenship: responsibility to country, family, church, school, clubs, etc.

  -- 5th Grade
  Law in U. S. history: colonies, early west.
  State court system.
  Federal court system.
  Constitution and amending the constitution.
  U. S. Government: monarchy to democracy, one man one vote.
  Rights as citizens: Four Freedoms, Bill of Rights, Declaration of Independence, Magna Charta.

  -- 6th Grade
  Early legal codes.
  Lawmaking process.
  Comparing democracies.
  United Nations.
  Governments in history, city/states of ancient world, feudal system, monasticism.

-- Junior High

Felonies and misdemeanors.
Treatment of offenders. Prisons - to remove from society, to punish, to rehabilitate?
Government and the public good: welfare, health (health boards), restaurant standards, water supply control.
Federal versus states rights.
Changing laws: peaceful means, violence - is it ever justifiable?

-- High School

International law: local, state, national interrelationships.
Comparative legal systems.
Comparative government: anarchy, monarchy, aristocracy, theocracy, democracy, socialism, communism, dictatorship, facism.
Government: loyalty, trust, credibility, responsiveness, acceptance of responsibility.
Changing government. Revolutions (characteristics, causes, effects, in world history).
Problems of unresponsive government.

Humanization

-- Kindergarten

Making friends - sharing.

-- 1st Grade

Working with others, helping, cooperating.

-- 2nd Grade

Building relationships - What makes me feel good? What makes you feel good?
What is a friend?

-- 3rd Grade

Community spirit.

-- 4th Grade

Community relationships.

-- 5th Grade

U. S. history: assimilating people that are different (language, race, religion, nationality, customs).

-- 6th Grade

Concern for others: social work, foreign aid.

-- Junior High

Community attitudes: handicapped, unfortunate, poor, orphaned, strangers, homicide/genocide; distribution of resources.

-- High School

Dehumanization: causes, indicators in the community, overcoming it.

Humanism.

Four freedoms in America today. How can they be achieved?

5. AIDS TO CURRICULUM DEVELOPMENT FOR THE MAN AND HIS WORLD MODEL

During the first week of the Workshop, several aids were given to the participants to help them in forming their ideas of a humanistic curriculum and in actually developing curriculum units. Although about a dozen aids* in all were present, the five major ones are included in this section. All of them except the Pittsburgh Model were developed by the General Learning team in the course of the Workshop.

5.1 Working Definitions

A humanistic approach to learning presents the traditional body of knowledge in an interdisciplinary curriculum in order to encourage a constant personal appraisal and re-appraisal based on affective responses, reasoning, attitudes, behavior, and the evaluation of experience in terms of oneself and one's interactions with others and the environment.

The Project Search Consortium built into the design of the program an emphasis on the following considerations which it considers essential in humanizing the curriculum:

- Reasoning -- Reasoning uses intellectual abilities to collect and organize bodies of knowledge in order to analyze and synthesize data by induction or discovery, by deduction or conclusion, by inference or connotation, and by the personal process of intuition.
- Valuing -- By this process a person makes use of knowledge to make choices and identify alternative behaviors and their consequences in order to arrive at satisfying decisions in pursuit of

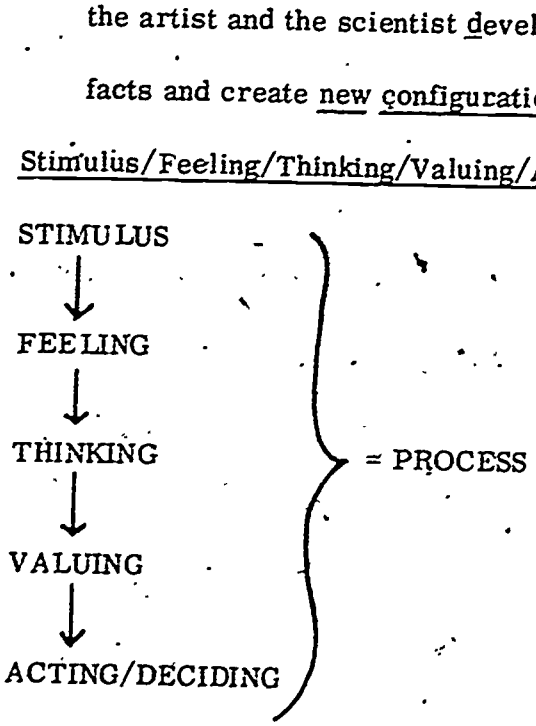
---

* Other approaches were an Historical-Sociological model; Experiential model; Relevance model; Intense Interest model, Interdisciplinary approach; Contemporary Social Issues approach; Impact of Science and Technology model; How things Work approach; Learning Activity Package format.

the things he prizes most. Since development is a continuous thing, these choices are constantly re-evaluated in light of new knowledge and experience.

- Affective Development -- In this process, a person's inner feelings are the key to the development of interests, attitudes, and appreciations which motivate and determine his behavior. In learning, experiences of success and failure are basic sources of affect.
- Processing -- By this means all knowledge, feelings, and values become translated into behavior. The skills which this requires are the ability to interpret incoming data, extrapolate the meaningful information and generalize from the situation at hand to other comparable situations. This skill also includes the coordination of kinetic responses in creative forms. By processing, the artist and the scientist develop the ability to go beyond the facts and create new configurations and new perceptions of reality.

5.2 Stimulus/Feeling/Thinking/Valuing/Acting Procedure



As we feel and think, we apply values. The feeling/thinking/valuing process leads us to decisions and suggests appropriate actions we could take.

An example of the S/F/T/V/A model as applied to an intermediate level assignment on the topic of ecology:

Stimulus
↓
Feeling
↓
Thinking
↓
Valuing
↓
Acting/ Deciding

1. Find and bring to class as many newspaper and magazine articles as you can that suggest man is manipulating the environment.
2. Select an article that makes you angry.
3. Divide into teams (Share the article with the other team members by reading it aloud or by giving a short account of its content.)

   Team 1: Defend and support what is happening in the story. (Make a list of your points.)

   Team 2: Attack what is happening in the story. (Make a list of your points.)
4. Draw the teams together and discuss what values you apply and state which side of the issue you are on and why.
5. Propose a solution to the conflict. (It is possible that if values are too opposing, no decision can be reached -- but that, too, would be a valuable learning experience.)

A second example of the S/F/T/V/A model as applied to a primary level assignment on the topic of ecology:

Stimulus
↓
Feeling
↓

1. Visit the garbage dump. Find out where garbage comes from.
2. Draw a picture of the dump. Think of one word that tells how you feel about the garbage dump. Write that word on the picture. Display the pictures and discuss them.

Thinking/ Valuing

3. Talk about why we have so much garbage. Could we ever have no garbage at all? Can we control how much garbage there is? Introduce the word and concept: RECYCLE. Discuss. Why aren't more products recycled? (cost, time, work, lack of awareness or concern, appearance, etc.)

Acting/ Deciding

4. Go to the store (alone or as a class). Ask the salesman to show you something that you can recycle, something that will not make garbage (or visit a recycling plant and do the same).

"/"

5. Make advertising posters for one of the recyclable types of products. Display in school so others can know about it (or let the children choose a different project).

In response to the above S/F/T/V/A procedure, the Workshop participants designed activities around a topic using this approach. Two of the group responses are included in this report on the following pages.

SAMPLE LESSON DEVELOPMENT

LEVEL: 1st Grade
STRAND: Physical Environment
TOPIC: Wood

STIMULUS: Teacher provides varied samples of wood of various textures, weights, sizes. She encourages the children to explore, sensorally, these pieces and they talk about how the different pieces feel, smell— they talk about how heavy or light, large or small the pieces are. They notice the sounds of the pieces if they are dropped, hit, hit together... They then think about how they could make things out of the pieces and use them.

FEELING: Children now use these bits of wood to accompany themselves in singing, dancing, creating new rhythms. The teacher asks them how the rhythms make them feel— "How would you dance to that rhythm? Would you feel happy? Sad? Like you want to fight? Like you like everybody? Like you have to jump up and run around?" "Do you like the music better when you helped to make it with the wood?"

From this activity, the teacher can move the children into a construction project... "Do you remember what things we said we would like to make with the wood?" The teacher has ready a number of simple tools and more wood and guides the children through the decision-making process and helps them get started on their building projects.

When the children have completed their projects, they hold an impromtu exhibit to admire and talk about what they have done and the teacher poses the questions. "Do you have any special feeling about the thing you've made? Does it make you feel good because you made it?" etc. "Did you like to work with wood?" "Do you know where the wood comes from? Is there so much wood in the world that we could never run out of it?"

ACTING/ DECIDING: From the answers the children develop there are in-roads into the importance of forests; because they are pretty, fun to be in, they provide homes for animals, they provide oxygen also.

Trips could be planned to visit a forest range, a lumber camp, a lumber yard. The transportation of the lumber in all its forms could be studied. Visits could be made to a home-building site. Children could be asked to ask their parents to help them make a list of all the things in their own homes that are wood and invited to bring to school their favorite thing made of wood (that they can carry). The class can also make a list of all the wooden objects in their own classroom.

"With all these things being made of wood, would you say that wood is important to us? Is it important because animals live in the trees? Do trees ever give us some— to eat? Then do you think somebody has to take care of the trees? Who?"

Children can be shown samples of paper in which the wood pulp is visible and proceed to a learning unit on the paper industry. They can be shown and use pieces of it while learning about conservation, recycling, reforestation, job of forest rangers, how long it takes a tree to grow.

APPRECIATION/ CREATIVITY:	Folk tales Tall tales Stories (Pinnocchio) Puppets Wooden toys Films Recordings (Children might want to tape the sounds of a saw mill, lumberyard, construction site, trucks, etc, to play as accompaniment to pictures of these activities which they have made.) Records Wooden instrument Band	Wooden instruments Wooden masks Object d'Art Religious images and articles Construction projects (with tongue depressors, popsicle sticks, assorted blocks, wood shavings, tooth picks, emery boards.)
SOCIAL STUDIES:	Climate vs. Trees Geography vs. Trees Wood into Homes (people & animals) Trees as Food Source Occupations Trees and Enjoyment Uses of Bark	Indian uses of Trees Wood and Play Wood and Beauty
SCIENCE:	Kinds of Trees Planting Care of Trees Insects vs. Trees Man vs. Trees Leaf Collecting & Mounting	Forest Fires Preservation Trees and Oxygen Trees as Protectors Animal Homes Fruit & Nut Trees
MATH:	Counting & Grouping Measuring Age (Growth Rings of Tree) Comparisons of More & Less; Tall & Short How many boards one tree makes	Cost (pencils, paper) Shapes
LANGUAGE ARTS:	Word recognition Listening Vocal expression Writing Stories	Poems Speaking in sentences Class newspaper recording class activities & visits to lumber mill, etc. Describing

LEVEL: 9th Grade
CONCEPT: Man in His Physical Environment
SUBJECT: Land Use and Revitalization

STIMULUS: Present a number of pictures of a wilderness area, a National Park, and a recreational community; include as many pictures of land use as possible.

FEELING: Present a newspaper article concerning the application of New Horizons, a land development organization, to create a recreational community within the boundaries of the Adirondack Preserve.

BACK-GROUND: At the present time, a group of citizens appointed by the Governor, has been given the mandate to determine the future of the state-owned public forest areas. There is much controversy concerning the use of land within the Adirondack Park as provisions have been previously made designating certain "wilderness areas." These areas were to remain free of commercial development and up to the present time were covered by laws of the state.

THINKING: Student makes his choice as to whether he feels the land should be open to commercial development or retained under the "Forever Wild" provisions of the state law concerning the Adirondack Preserve.

Independent Activity: Divide into groups:

a. Group supporting land development
b. Group defending "Forever Wild" provision

REASONING: Check resources concerning this topic. Use factual presentation of "New Horizons" including their plan to protect ecological balance. Use resource material from the New York State Department of Conservation.

VALUING: What right have purchasers to land they buy?
What responsibilities have the developers to the land they buy?
What are the rights and responsibilities of the people now residing in the area of the projected recreation community? Can they demand that the development group protect the environment? Do they also have a right to expect an increase in business and thus a rise in prosperity of the area due to the new development? If so, what influence will this have upon their feelings concerning the new community?
Do all residents of the state have the right to decide the use of state land?
If the developers can show they are protecting the environment and perhaps enriching the ecological balance (lumbering areas), should they then be permitted to develop?
How many special interest groups are interested in the Adirondack Preserve, (e.g. snowmobilers) and if all have an equal right to land use, what will be the effect on the ecological balance?
The land at the present belongs to the people of the state of New York. What are the rights of future generations to this land?

Discussion or Debate

ACTING: Evaluate positions. Are there alternate solutions to the problem?

DECIDING: Are feelings the same after the discussion as previous to it. Have some positions changed? If so, why?

INTERDISCIPLINARY APPROACH: Language activities as well as social studies, science and art activities can be incorporated into this. In the cognitive domain material has been researched, organized, analyzed and synthesized. In the area of language, material has been presented. In the area of social studies: practicing democratic and social living—decision making process concerning the use of land.

Science; Population increase result in more demand upon resources of the earth

Art: Models can be made, dioramas.

Materials; Films:

Bulldozed America
Conserving a Heritage
Forest Conservation
Man Uses and Changes the Land
The Changing Forest
Sense of Wonder

Publications from:

American Association for Health, Physical Education and Recreation

Project Man's Environment &

Council on Outdoor Education and Camping

Pub. from N.Y.S. Outdoor Education Association

5.3 Questioning Grid

Although not a "grid" in the normal meaning of the term, we have called the following by that name because it can be transposed gridlike onto any issue, thus getting at valuing, reasoning, affective development, and processing or adjustment.

- VALUING

What value considerations are inherent in this topic?

Which are of an ethical or moral nature?

What is the range of possible reactions to this issue? (List or rank the alternative attitudes according to the range -- reactionary, conservative, liberal, revolutionary, as one possiblilty.)

What do you feel would be the dominant reaction of your city? your community to this issue?

What is your own value choice in respect to the above issue. Substantiate with reasons.

What are the sources of the values you have stated? Where did you get them? (Friends, community, church, personal judgment)

- REASONING

What resources contain information about this topic?

How will these resources be used? How will information be disseminated?

Inductive: What facts can be assembled to define the topic?

How can we become more aware of the problem?

Can you trace the causes and effects of this problem or issue?

Compare and contrast incidences of this issue.

Deductive: What general principles apply to this issue?

Can you make a physical model of this problem or issue?

Can you make a symbolic model of this problem or issue?

Is this topic or issue a result of certain natural laws?

Inferential: What sub-problems can be inferred from the facts of this topic?

What interrelationships (what interdisciplinary approaches) lend themselves to this topic?

What are the components of this topic? Can they be put together to yield new information?

Evaluation: What type of evaluation will measure the achievement of the goals of this educational unit or measure the acquisition of "learning" about the topic?

What kind of reports could be used to evaluate? What kind of exam is most appropriate?

Is a field experience or laboratory experience necessary in relation to study of the topic and evaluation of understanding?

Is the information used as the base of the evaluation fact or opinion? At what times is fact relevant? At what times is opinion germane?

- AFFECTIVE DEVELOPMENT

How does presentation of this topic affect the student's feelings of loyalty to country, family, church? How does it affect his relationships with his peers?

Does this topic raise compassion, aggression, fear, hope, timidity, confidence, etc. in the student? How will this emotional energy be channeled in the classroom?

What appreciations derive from this topic? How are they evidenced? (Appreciations might include recognition of the value of nature, of the individual, of community service, an historical appreciation of causes and effects, background or potential of the issue, etc.)

Does this topic lead the student to recognize the nature of the craft or skills necessary to deal with the issue?

- PROCESSING OR ADJUSTMENT

How does this topic help you come to terms with your life style or is it at odds with your beliefs?

How can the student be helped in the process of coming to terms with this problem or issue? What community resources are available?

What alternatives are available?

Are adjustment aspects different with different groups? (peers, family, school personnel, religious?)

Is this the kind of topic for which adjustment is the desired response?

Does the student understand consequences and implications of this problem and of the choices available to him?

Action: Does the study of this topic encourage the student (or teacher) to join a particular action group?

Does this topic affect his hobbies? Or encourage him to develop one?

Does this study affect physical and manual skills?

Does it help create a willingness to take on the chores of doing a good job and doing it right?

What does "following your conscience" mean in terms of activities related to this topic?

In what ways has the study of this topic changed my attitudes, beliefs, hobbies, habits, knowledge of facts, and resources?

5.4 Pittsburgh Model

The Pittsburgh Model is especially useful in developing an inter-disciplinary approach to learning. The two examples which follow show how various issues lend themselves to sub-division into the five clusters.

PITTSBURGH Model

Case A

Concept: Man and Technology
Subject: Regulation of atomic energy.
Purpose: To assist the student in developing and clarifying his ethical values and to develop understanding and awareness of the interaction of man and technology.

I. Humanistic-Ethical

Discussion
Decision to use the A-bomb

History
Struggle for civilian control-the Atomic Energy Commission
Impasse in the United Nations
Era of unrestricted testing
Question of human survival

II. Scientific-Quantitative

Atomic Structure
Nuclear Reactions
Nature of Radioactivity
Destructive Capacity of Nuclear Energy

THE LEARNING SITUATION

III. Creative-Aesthetic

Literature of the atomic age -
John Hersey, Hiroshima
Norman Cousins, Modern Man Is Obsolete
Nevil Shute, On the Beach

Films
Dr. Strangelove
Fail-Safe
Hiroshima, Mon Amour
On the Beach

IV. Vocational-Utilitarian

Radio isotope therapist
Nuclear physicist
Atomic Energy Commission
Utility company engineer

V. Physical-Kinesthetic

Construction of Model Nuclear Reactor

Detection and Measurement of Radioactivity

Case B

Concept: Man and the Creative Arts
Subject: The music of black and white.
Purpose: To develop and clarify the student's aesthetic values through understanding and awareness of the creative arts; to explore the common heritage of European folk music and African tribal music; to trace the spread of African music's influence via the New Orleans melting pot to the rest of the world; and to show how a vital folk music finds eventual expression in and metamorphosis into art music.

I. Humanistic-Ethical

What makes music American?
Film - "Nothing But a Man"
Effects of place, time and atmosphere on music
Ethical themes represented in musical selections

III. Scientific-Quantitative

Economic impact of jazz music
Influence of economic-social structure on musical form
Impact of electronics on rock music

THE LEARNING SITUATION

II. Creative-Aesthetic

Music of Beethoven-
Symphony No. 6
Movement III
Gershwin - Rhapsody in Blue
Copland - Hoe Down, from Rodeo
Ives - Putnam's Camp
Ellington - The Golden Broom and the Green Apple
Still - Afro-American Symphony
Kay - Brief Elegy
Walter - Glory, from Requiem for Brother Martin
Soul Music - James Brown
Aretha Franklin
Rock and other current music

IV. Vocational-Utilitarian

Symphonic Organizations
Jazz Groups
Discussion of what skills necessary to perform jazz music
Musical careers
Uses made of this Music

V. Physical - Kinesthetic

Modern dance
Jazz dance
Student involvement in:
ethnic and cultural dances of Blacks and Whites
Singing

5.5 A Checklist of LEARNING TECHNIQUES, ACTIVITIES, EXERCISES, AND EXPERIENCES

This list is meant to be suggestive rather than exhaustive. The techniques suggested range all the way from passive to full involvement. They are meant to jar your mind to think of a variety of creative, relevant activities for each specific need.

Not all activities are applicable on all age levels or for all purposes. Some are more appropriate in imparting factual information, others for changing attitudes and making value considerations, still others for developing skills.

Explanations are given only for those items which are not self explanatory.

In some cases, the entries on this list represent actual pieces of audio-visual equipment. This has been done whenever those media are strong enough to leave the imprint of their style on the activity in such a way as to almost mold it into a learning experience distinct in nature from all others.

- Independent Study
- Reading and Research Assignments (from Syllabus or Study Guide)
- Literature Search
- Programmed Instruction Workbooks
- Audio-Visual Programmed Instruction Systems -- Multi-Media Packaged Self-Instructional Systems (Synchronized Audio-Visual Component)

  One of the relatively recent developments on the multi-media scene is a combination unit which provides synchronized movie, slide, sound, and self-instructional (programmed instruction) scoring

capabilities. A less glamorous but effective substitute can be obtained by manually synchronizing a slide magazine with a cassette tape recorder.

- Dial-Access Information Retrieval System

This is an expensive but very efficient means of gaining almost immediate computerized access to library and multi-media resource materials on any topic.

- Teaching Machines (Computer-Assisted Learning)
- Learning Activity Packages

These are separately packaged units prepared for individualized learning. They generally contain pre-arranged activities in this sequence:

1. Passive exercises (read, listen, watch)
2. Active exercises (experiment, produce, group activities)
3. Synthesis (summarize, report, answer)
4. Self-test (which the student may take prior to any of the activities, as a pre-test, if he feels he already knows the material)

- Information-Collecting Assignments (Combining Interviews, Research, etc.)
- Small Group Discussions

A group should be led by a "facilitator" rather than a group leader, i.e., someone who facilitates group participation instead of imposing his views on the group or making them dependent upon his leadership.

- "D" Groups

"D" (for "developmental") groups are purposely leaderless groups where leadership is allowed to emerge naturally from within the group.

It is essential that such groups be given an agenda and assigned specific tasks for each meeting.

- Question and Answer Sections (Interrogating an Expert -- Ad hoc -- Systematic)

In addition to the normal questioning of students with which every teacher is familiar, students can benefit from a chance to turn the tables and question experts (local citizens or teachers). This questioning can be:

1. Ad hoc - anyone asking questions as he happens to think of them
2. Systematic - by the students planning and organizing their questions and strategies beforehand.

- Live Lectures: Lecturettes (Mini-Lectures)

Lecturing is the most overused teaching technique, and if tests are any indication of what is learned, it is also one of the least effective, depending heavily on the liveliness and charisma of the lecturer. By calling them "lecturettes" or "mini-lectures," the point is made that "talking to" sessions should never exceed 10 or 15 minutes (even when addressing adults) without interspersing other activities in between.

- Illustrated Presentations (Using Slides, Overhead Transparencies, Opaque Projections, Flip Charts, Models, etc.)

In such presentations, the oral material should be structured so it is primary and could even stand alone if necessary. In other words, the slides should not be meant to carry the delivery, each slide simply reminding the speaker of a comment related to that slide but not necessarily to the whole presentation.

- Flip Charts
- Flannel Boards; Magnetic Boards
- Note Taking
- Outlining
- Reviews/Critical Appraisals

  After criteria for excellence have been established and studied, a student is equipped to make a critical evaluation of a book, a poem, a painting, a building, a musical or dramatic presentation, or even a plan for some project, approach, or solution to a particular problem or social issue.
- Development of Questionnaires
- Development of Test Items for Peers
- Practicing
- Text Books; Manuals
- Course "Ponies" (e.g., "College Outline Series")
- Flashcards
- Workbooks
- Mimeographed Handouts
- Pamphlets; Brochures
- Vertical File

  A vertical file is a collection of file folders containing short articles, pamphlets, brochures, etc., on alphabetically arranged topics, to which the student has free access.
- Drills; Tests; Quizzes.

- Open-Book Exams

  Hardly an "examination" in the traditional use of the word, an open-book exam is really an excellent study technique and an opportunity for the student to dig out materials in response to structured questions.

- Multiple Group Presentations

  The student body is divided into 3 (or multiples of 3) smaller groups, and each group develops the same topic in one of the following ways:

  1. Visual (or graphic) presentation
  2. Panel discussion or debate
  3. Spontaneous role play or planned skit

- Videotaping (VTR/Videotape Recorder) and Instant Replay Critiques

  The VTR provides relatively inexpensive (since tapes can be reused) movie-making capabilities within the classroom. A child's or a group's presentation can be recorded and played back immediately for study and critique.

- Videotape-Using Pre-Filmed Units

  Short instructional units can be made on the VTR and stored for future replay.

- Television Programs (ETV, Commercial, or Closed-Circuit Programming)
- Audiotape Cassettes; Phonograph Records
- Microfiche
- Films

- Single-Concept Films ("Loops")

  These are short (about 10 minute) instructional films produced in an endless and continuous loop (hence the name) and contained in a cassette. A child can play any loop over and over again in order to master the single skill or concept it contains.

- Slides/Filmstrips
- Film Making as a Training Technique

  Films made by the students provide another medium to present facts, opinions, and interpretations. The VTR is excellent for this, since it is economical and requires no additional photographic processing expense.

- Polaroid Camera as a Training Technique

  Still shots, immediately available, can also be used by a student to present his impressions of his community. They tell their own story, or they may be used as the springboard for a written story he might prepare to accompany them.

- Opaque Projector
- Overhead Projector
- Field Trips; Tours
- Field Assignments
- Community Analysis

  Using either already developed information-gathering instruments or ones which the students have devised, the students then collect and analyze information on their community (population density, natural resources, ethnic groups, occupation and labor force structure,

manufacturing, public utilities, recreational facilities, power structure, etc.).

- Lab Work; Experiments
- Workshops
- Seminars
- Critiques
- Group Tasks
- Peer Teaching
- "Sibling" Teaching

Whereas peer teaching refers to peers teaching each other, sibling teaching indicates that older students are teaching younger ones.

- Relay Teaching

If many students are to be taught a specific skill, a small cadre can be taught, tested, and certified. They then, in turn, each teach five or ten more who teach others, ad infinitum.

- Practice Teaching
- Apprenticeships/On-the-Job Training
- Micro-Teaching

Micro-teaching is so named because of the very small task or sub-task which is concentrated on in order to facilitate its learning. The student performs this task while the teacher observes, then the teacher critiques and immediately the student is given another chance to present the same material. Other students may function as observers or they may serve as students if the performing student is teaching them the particular skill.

- Tutorials
- Dyadic Interchange

Two students take turns teaching each other in a dyadic interchange. They might teach each other different topics or different aspects of the same topic, after researching and preparing their separate presentations.

- Team Teaching

Real team teaching is more than "turn teaching" in that each component of the team adds more to the total impact than the mere sum of the parts.

- "Co-Teaching Conversation"

In a co-teaching conversation, two experts on a particular subject (local residents or fellow teachers) first meet to agree on a skeleton outline as a structure for their presentation, but not on what they are going to say. Then, in front of the students, they converse freely, letting their differences of opinion be known and responding to the other person's comments. The outline provides a mechanism to keep the conversation on target but it is not detailed enough to stifle spontaneity.

- Case Studies

Case studies require careful preparation to be effective for, while hypothetical, they must be convincingly plausible. If they are open-ended, they provide students a chance to decide how they would handle the situation and the consequences of the various solutions suggested.

- Critical Incidents

Similar to case studies (the names are often used interchangeably)

"critical incidents" refer here to using live crisis situations which develop within the group in an attempt to reach resolution.

- In-Basket Technique

Each student simultaneously is given the chance to role play himself as a businessman responding to the letters and memos in his in-basket -- many of which cause him to make ethical-moral decisions. This is followed by a discussion of the implications. (For a set of such letters, see J. Wm. Pfeiffer and John E. Jones: A Handbook of Structured Experiences for Human Relations Training, Vol. II, p. 44 ff., University Associates Press, Iowa City, Iowa.)

- Problem-Solving Scenario Technique

This is similar to a case study, but a very involved case study. It is meant to be used over an extended period of time (one or two weeks), and students are expected to analyze the problems carefully, plan a strategy, and attempt systematically to research a solution which the group can agree upon. Possible solutions can be role played as necessary. As the activity progresses, new data are fed into the group periodically.

- Force-Field Analysis (Thrust/Counter-Thrust Technique)

This is a fancy name for a very simple process which is useful in problem solving. Two lists are made, one listing all the "factors for" and the other, all the "factors against" any issue in question. (An important point to remember is that problem situations can often be resolved more effectively by striving to reduce the forces against rather than by increasing the forces for.)

- "Veterans" Panels

"Veteran" is here used to imply anyone who has himself gone through any situation about which the students are currently studying.

- Panel Discussions
- Debates
- Seeking Consensus Within a Group

The task assigned to a small group is to discuss a certain controversial issue and reach consensus on it. Consensus implies agreement without vote-taking, and it is a good way to stimulate discussion. Later, the decisions reached must be defended by the group.

- Agree-Disagree Statements

A list of true-false type statements is given to a group; the group is asked to respond, first of all individually to the statements, indicating whether they agree or disagree with the sentences as stated. Then, as a group, they are to tally responses and change the statements in any way so that the majority of the group can agree. (They may not simply agree to disagree with the statement.)

- Delphi Technique

The Delphi technique is similar to the agree-disagree technique mentioned above, but instead of simply agreeing or disagreeing they are asked to indicate when they think the statement will be true in their city (now/2years/5 years/10 years/25 years/50 years/never).

- Role Playing (Simulation)

Role play may arise spontaneously, on-the-spot, at the suggestion of a teacher who says, "Let's role play that situation and see how it

might turn out." It may also be planned ahead of time with carefully prepared scripts (known only to each participant) which delineate the individual roles and build the characters the students are expected to become. The rest of the group watch the performance and participate in the critique which follows.

- Large (Whole) Group Role Play

Role play generally involves only two or three people, acting out their situation before the rest of the class, but the whole class can be involved in role play scenarios which divide the total group into two or three interacting groups. Much more fluid in nature, such enactments may move from two to one to multiple sub-groupings and back and forth again. (Contact Robert Kohls, General Learning Corporation, for sample scenarios for a whole group role play.)

- Community Simulation

A community simulation is like a large group role play in that it involves all the class, but each is on his own as he interacts, in turn, to several staff members playing their roles as various key community figures.

- Skit Development and Presentation
- Puppets
- Live Demonstrations
- Direct-Manipulation Laboratories

Costly to produce, these laboratory setups allow individuals to manipulate the tools of their own learning situation and to see the results immediately.

- Electric Boards

  These are pre-planned boards which light up with the correct responses after the participant has had a chance to indicate his own answers.

- Models

  Students may build their own models which may be used later in teaching other students. A globe is a model we are all familiar with -- a model of the world.

- Planning Graphic Representation of Ideas or Concepts; Charts

  Planning symbolic representations of a thesis or a process helps us visualize that process better.

- Displays; Bulletin Boards

- Group Newspaper Project

- Product Manufacture and Distribution Project

  To engage students in all the steps necessary to plan, produce, and distribute a product for sale is a very involving educational experience.

- Learning Games

  There are available on the market now a large number of commercial games which have strong educational application (e.g., Ghetto, Black and White, Generation Gap, Man and Woman, Crisis, Body Talk, etc.). Other games, closely resembling simulations, require no commercial props. (See Clark Abt: Serious Games, Viking Press.)

- Structured Group Activities

  This refers to exercises of short duration which are aimed at very specific objectives (e.g., problem solving, smoother functioning within the group, etc. (See Howard Lewis and Harold Streitfeld: Growth

Games, Harcourt, Brace, Jovanovich and several publications available from University Associates Press, Iowa City, Iowa.)

Brainstorming

Brainstorming is a process used to generate a volley of creative ideas in a very short time. The only rule is that during the time you are getting the ideas out, there should be no negative reinforcement of any kind. Ideas should be encouraged to be as fantastic and impractical as possible, since they will spark other creative ideas. Later, the ideas can be reworked and made practical.

"Fishbowl" Meetings

This technique is called "fishbowling" because one group sits in the middle of the room and has a meeting or a discussion while the others ring their chairs around the group and observe the process. After a certain time, the meeting may be opened up for observations or questions from the observers.

Group-on-Group Meetings

This is similar to the fishbowl technique except that the group is divided exactly in half and one group holds its meeting in the inner ring while the other half lines up one-on-one, each observing the behavior and contributions of a single participant with whom he has been paired -- in order to give that person helpful feedback about his style later. The groups then reverse positions and roles.

Charette

This is a process by which a model or plan is explained to the public, then the public is asked to critique the plan (usually one which serves

the public as, e.g., plans for a new school building) in order to participate in the discussions. The teacher in a classroom can adapt this procedure with the students serving as public citizens reacting to the material being presented by the teacher.

- Modified T Groups

Most classroom teachers are not equipped to run bona fide T-groups, but they are equipped to help the group focus, occasionally, on the process and on individual reactions and feelings to what is happening within the group instead of only being aware of the content being discussed.

- "Live-Ins" (with Ghetto Families, etc.)

There is no better way for middle class white students to learn what it is like to live in the ghetto than for them to actually live for a week or more with a ghetto family.

- Life-Planning Exercises

These are structured instruments designed to help a person evaluate his past achievements and build his future goals. (See materials developed by Bernard Haldane Associates, Washington, D. C.)

- Feedback Sessions

These are sessions when individual students are given both positive and negative feedback concerning their actions -- but always in a supportive, concerned atmosphere -- from fellow students and from the teacher. Emphasis must be centered on specific events and on the reactions of the group members to those events.

"Third Culture" Experience

A third culture experience is one that is totally different from the student's own past experience, yet one which is also different from the experience for which you eventually want to prepare the student. For example, if I want to prepare someone to live and work in South America, I might train him in Puerto Rico or even in Spanish Harlem. In this sense, letting a small child sell lemonade is preparing him to become a businessman.

Language Experience Technique

This technique is specifically geared to helping a student who is having trouble learning to read. The theory behind it is that if the child can talk he can tell a story out of his experience; that story can be written down (by someone else -- in exactly the ungrammatical way he tells it). He can then learn to read his own story and, later, the similar stories of his peers. Eventually, he will be able to graduate to other written material.

Student-Decided Approaches to the Study of a Particular Topic

Sometimes the students, in small groups, might be asked to plan their own learning experience from beginning to end -- including topics, objectives, activities, approaches, outcomes, and evaluation.

Projects Based on Local Ephemera

Newspapers, telephone books, TV guides, mail order catalogs, and such readily available material can be used to develop practical learning experiences. For example, a Sears Roebuck catalog can be used as a reference source for a child to complete the replacement

value of the furniture and furnishings in his own room.

Use of the Community as a Major Learning Resource

This implies more than simply taking an occasional tour of a newspaper plant or a local dairy. It implies delving much more deeply into these and other resources to learn all one can from them (See Yellow Pages of Learning Resources, Richard Wurman, editor, MIT Press, prepared in connection with the 1972 International Design Conference, Aspen, Colorado.)

6. PROCEDURE FOR DEVELOPING UNITS FOR EACH STRAND OF THE MODEL

The format which follows was prepared originally to present two examples -- one on the first grade level and one on the eleventh -- as guides for the teachers in the Workshop, to prepare them to develop their own units on their particular grade level. The eleventh grade example is included in this report.

Due to the "push" to produce a large number of units within a short time, an unexpected benefit came out of the Workshop. In order to increase production, it became necessary for teachers to develop some units individually, and then to submit them to their group for further elaboration. As a result, the Workshop participants gained the facility to develop units independently, thereby greatly increasing their future potential to develop larger numbers of units.

Although at first glance the format seems highly structured, it was found to allow an amazing amount of freedom to be creative, especially in the "Concepts" and "Activities" sections. Further, the format is such that it provides a wealth of ideas which the classroom teacher can use to develop his or her own lesson plans. It is not intended as a rigid dictum but, rather, as a source of abundant, raw material from which to draw and choose.

A point made in the Workshop was that the columns "Affective Questions," "Value Questions," and "Interdisciplinary Approaches," are of particular importance in developing a humanistic curriculum. These represent the heart of the way in which this curriculum is both unique and humanistic.

Resources and Materials	Cognitive Skills Individual/Group	Sensory Psycho-motor Skills	Affective Questions	Value Questions	Methods of Evaluation
Books: The Octopus; The Jungle. By Upton Sinclair Brave New World. By Aldous Huxley 1984. By G. Orwell Walden II. By B. F. Skinner Looking Backward. By E. Bellamy Toward the Year 2000. By Herman Kahn et al. The Myth of the Machine. By Lewis Mumford and other books by L. Mumford and Jane Jacobs. The Human Use of Human Beings. By Weiner Films: Modern Times. By C. Chaplin Timeplace Have I Told You Lately That I Love You? Chamber of Commerce & Kiwanis Ralph Nader's Reports	To analyze relationship between elements of society and the whole. To project into the future in a predictive scientific manner. To learn the history of the "Industrial Revolution."	To learn the workings of given machines. To learn how to use given machines (office or otherwise) and/or build a machine.	Picture a world without machines. How would it differ? Write a poem, song story or paint a picture about this world. Should women work? Which machines do you consider indispensable? Why? What is efficiency? Does society really need an electric can-opener? Is American gadgetry useful or wasteful?	Is what's good for General Motors good for the country? What do machines mean for our ecology? What is the responsibility of citizens and of industry? Is industry necessary for progress? In what ways does industry control the climate of a town?	Research paper on aspect of mechanization. Team task-forces examining industrialization in Utica to report to class. Write a computer program or study a computer language. Learn how the inside of any machine of your choice works (radio, TV, car, watch). In an oral presentation explain it operation and function.

Teacher feedback: 7/1 - Students eager to have a chance to talk about depersonalization. Yet several of them thinking of working with the computer as a career. Hard for them to reconcile the two.

7/2 Task forces studying Utica industry have begun to read Ralph Nader's report on Nursing Homes. They are interested in his method and approach, some wondering how "scientific" he really is. We had a math presentation today by Mr. Jones about the use and abuse of statistics. I learned something too!

Topic	Concepts & Issues	Age or Grade Level	Aims	Activities & Projects	Interdisciplinary Approaches	Time Allotment
Man and Machines	Dehumanization Technology as a force in our culture. Machines as extension of man. McLuhan's idea of end of machine age with electricity leading us to "global village." The rise of cities as a logical extension of machine age. Peter Goldmark's idea of the new rural revival through electronic circuitry. "Built-in" obsolescence	11	To discuss machine as a dominant force in modern life. To see if technology has produced counter forces in society. To discuss relationship of industrial development to progress. To consider whether machine-produced uniformity and standardization has affected the culture and mores of American society.	Class makes a count of how many "numbers" are their own-- (credit card, driver's license, social security, address, zip code, phone #). Some numbers are shared, some individual. Why is this necessary for societal organization? Class visits IBM office. Class teams check out industrialization in Utica. How long have these industries been here? Are they "20th Century" industries? What would encourage new industry in Utica? Class explores difference between industrial production and a craft. Each makes a pot or builds something. What is the difference between uniformity and uniqueness?	Visit and participate in industrial arts shop (boys and girls) Social studies -- discuss the economics of machines in our culture -- labor unions, space contracts, for example. Art -- study of works of Leger and Italian Futurists. Music-- introduce Webern, Berg, Boulez, John Cage. Physics -- discussion of mechanics. Math-- use percentage graphs, statistics, probability to investigate industry.	

Working Definitions

"Model" -- Refers to our Man and His World Model.

"Strand" -- Refers to the ten parts of our Model. In the Summer 1972 Workshop we developed the strand Man in His Physical Environment.

"Subdivisions of the Strand" -- Man and His Physical Environment presently has six major subdivisions: Man's Expanding Horizons; Spatial-Temporal Orientation; Natural Phenomena; Taming the Environment; Survival of the Universe: Ecology; Philosophical Concepts of the Universe. Those, in turn, are further divided.

"Topic" -- A broad, general field of consideration which provides the material from which to build a curriculum unit (e.g., "Man and the Machine," "Tools," etc.).

"Concept or Issue" -- An abstract notion which breaks down or combines elements, and is related to a larger idea or topic.

"Subject" -- This refers to the traditional subject matter designations of the curriculum (e.g., math, English, science, social studies, music, etc.). (The term has no immediate application to our Model but is presented here because it is often a source of confusion.)

"Activities" -- Represent exercises of a day's duration.

"Projects" -- Implies longer term exercises.

"Resources" are of three types: community facilities; printed resources (books); and multi-media.

"Materials" -- Implies the physical supplies and equipment required to carry out the activities.

"Cognitive Skills" -- Refers to the factual (or "know-how") knowledge covered in the unit. (These are often different in intent for individual projects and for group projects.)

"Affective Questions" -- Are questions which get at feelings, attitudes, interests, appreciation, and behavior change.

"Valuing Questions" -- Can be directed toward determining a student's personal values and also toward helping him sort out possible alternatives in the choices of others.

"Sensory-Psychomotor Skills" -- Refers to the development of the five senses and to coordination of body movements.

"Methods of Evaluation" -- Should vary according to the aims and whether factual knowledge, attitudes, or skills are being taught and tested.

"Teacher Feedback" -- This section is left blank for the classroom teacher using the unit to record references to his or her experiences as a reminder for future use.

7. UNITS BY GRADE LEVELS FOR THE STRAND: MAN IN HIS PHYSICAL ENVIRONMENT

The Utica Summer Workshop for Project Search has as its chief goal, in addition to the creation of the model itself, the development of all the curriculum units for one of the strands of the model -- on all levels from kindergarten through twelfth grade. (These units may be found in Volumes II and III.) Man and His Physical Environment was chosen as the strand to be developed because it is one of the largest strands and one of the most diverse. The development of this strand now provides a paradigm (by way of both procedure and experience) for the development of the remaining nine strands of the model.

Since the units were developed by the 80 Workshop participants, each working in his own grade level group, they vary somewhat from grade to grade. They do, however, have sufficient similarity to validate the procedure itself (See Section 6.), and in all cases offer more than enough ideas to present the classroom teacher with a reservoir of exciting activities.

From kindergarten through the eighth grade it is possible to discard the traditional subject matter categorization of knowledge and to teach in a self-contained classroom.

The situation on the high school level is much less amenable to Project Search, to our model, and to a humanistic approach -- by virtue of the necessity to retain the 88 separate course offerings and the Board of Regents examinations. These are givens, however, and we must work within these restrictions.

On the high school level, (grades 9-12), the Man and His Physical Environment strand of our Man and His World Model has been developed for English and social studies (in an interdisciplinary approach*). In addition, units for this strand have been developed for high school biology, physics, and algebra. The motivating idea behind these choices was the belief that if we could succeed in humanizing science and mathematics, this would provide evidence that the same could be done for all high school offerings.

* The high school English and social studies units have been developed together, and the intention is to teach them in that manner. On the units themselves, indications are made as to whether a particular activity might be more related to English or to social studies, but these indicators are not meant to be strictly binding.

8. RECOMMENDATIONS

8.1 General

Certainly all of the 80 teachers who participated in the Summer 1972 Workshop realize it well, but there is a vital message which must be disseminated to all teachers and all community members. That is this: adopting a humanistic curriculum does not mean lowering standards. Nor does it mean the elimination of the 3Rs, nor that chaos will be allowed to reign in the classroom. It does mean letting students assume some of the responsibility for their own learning; it means giving them practice in making choices and decisions within clearly defined limits. Structures are provided but even those structures must be flexible enough to allow human adaptation. Such an approach encourages inner-directed discipline to develop.

We strongly suggest not forcing this (or any other) new curriculum on all teachers immediately. It should be possible for a school system the size of Utica's to allow a few schools to follow traditionally successful programs and a few teachers within any single school to continue to teach in their own way. We are convinced of the superiority of the model and of the capability of the participating teachers to convince others of the value of SEARCH in a reasonable amount of time.

Along these lines, the teachers in the Utica system who were not able to attend this summer's workshop (and even those who were) will need additional in-service workshops in which the program can be explained and they can be brought into the scheme voluntarily. One of the added advantages of this past workshop was that it provided an opportunity to elementary and high school teachers, public and parochial school teachers, and classroom and special teachers from several schools

to intermingle and work together on a creative plane. Even these 80 who have already had the experience could benefit from additional in-service workshops throughout the year. Workshops of several types are needed: those which simply orient the uninformed, those which train new teachers to participate in the development of the additional curriculum units, and those which prepare the 80 teachers who took part in this past workshop to play leadership roles in the workshops to come. There is also an urgent need to initiate a full-scale public relations campaign to inform the general public of the model and win their support before it is developed to any greater degree. There is now curriculum material concrete enough to illustrate the program for both community residents and the 700 Utica teachers who could not participate in this summer's workshop.

One of the early steps in the process of further developing this curriculum must be the production of performance-stated goals for each unit, coupled with the establishment of a sound evaluation system to substantiate Project Search. Without such data, those involved with even the best program will have nothing more than a vague feeling that somebody somewhere must be doing something right. Project Search's potential is too promising to neglect the need for controlled observation and evaluations, and these must be built into the plan without further delay.

Finally, the General Learning team strongly recommends that a Project Coordinator be announced as soon as possible. Coordination is vitally needed to pull together the many aspects of this very heterogeneous project.

Recommendations of a more specific nature follow.

8.2 Structural Changes

During the course of the Summer 1972 Curriculum Workshop, several teachers became aware of the possibility of enhancing the curriculum which was

being developed by suggesting certain structural changes. They formed an ad hoc committee and prepared a rather lengthy report which served as the basis for the suggestions in this section and which should be consulted for its exact contents. To quote from the report itself: "It is not the intent of this committee to make extensive changes, but to develop a setting and realistically implement a curriculum that is intended to reach and motivate all students, teachers, other staff personnel and administration."

Basically, the suggestions tend to group themselves into two categories: 1) those which would require long-term organizational changes; and 2) those which permit student options that any individual teacher could choose to adopt within his or her own classroom. Together they form something of a list of recent innovations in education:

- Open Space/Open Concept Classrooms
- Home Base Schools
- House Plan
- Mini-Schools
- Self-Contained Classrooms (on the upper grade levels as well as the lower)
- Non-Graded Classrooms
- Modular Scheduling/Flexible Scheduling
- Mini-Courses
- Team Teaching
- Learning Centers
- Study Carrels

- Independent Study
- Learning Activity Packages
- Contract Learning
- Performance-Based Objectives
- Pass-Fail Grading System
- Small Group Learning Situations
- Discovery Approach/Experience-Based Learning
- Use of Volunteer Parents as Unpaid Paraprofessionals
- Youth Tutoring Youth Programs

For teachers and administrators who are interested in contacting school systems now using the above approaches to request further information, the following sources are recommended:

1) Alternative High Schools: Some Pioneer Programs, Educational Research Service, American Association of School Administrators, National Education Association, Washington, D.C.
2) Kaleidoscope 4: A Descriptive Collection of Promising Educational Practices, Massachusetts Department of Education, Commonwealth of Massachusetts.
3) Places and Things for Experimental Schools, Educational Facilities Laboratories, New York, New York.

8.3 Use of Special Teachers

Another ad hoc committee which formed early in the Workshop was one which brought together all of the special teachers. For the first time art teachers were able to see that many of their "problems" were identical to those of the industrial arts, music, home economics, and physical education teachers.

It was especially helpful to have the special teachers in our Workshop because they are the ones whose breadth of experience makes them equally at home on the second or seventh grade level. Many of their fields demand that they specialize in creativity, so their suggestions were particularly appropriate in developing creative, imaginative units. Almost without exception, the special teachers displayed a willingness to develop activities and projects which would relate to and enrich what the student was studying at that moment in his classroom. It is strongly recommended that classroom teachers make more use of the rich resources of the special teachers in their buildings.

8.4 Children with Special Learning Needs

A curriculum can be called "humanistic" only to the extent that children with special needs are recognized and planned for appropriately.

In the final days of the workshop, Dr. Stanley Zager, School Psychologist, and a small committee worked up a model for providing such service in the Utica School System. It proposes the establishment of flexible working units, some on a continuing basis and others on an as-needed basis, to work in the five areas of evaluation, intervention, program planning, training and orientation, and inter-agency cooperation. The units themselves concentrate on mental status, retarded and emotionally disturbed children, students with learning disabilities, parent consultation, and the like.

Please refer to the final report of the Special Learning Needs Committee for details of this plan. It is completely compatible with the Man and His World model.

8.5 Plans for Developing Project Search During the Coming Year

Still another committee, under the direction of Principal Jane Langlois, met to make recommendations for the further development of the project during the coming year. Several very specific recommendations were made, all of which the General Learning consultants endorse completely:

1) Written invitations should be sent immediately to the Board of Education members to become participants in Project Search.

2) Project Search and the process and accomplishments of the Summer Workshop should be presented in detail to all the teachers in the Utica School System in the general meeting of professional staff on Tuesday, September 5, 1972. Following a brief presentation to the large group, teachers should meet in small groups by grade level, using Workshop participants to take their groups through the Workshop processes, explain why and how units were constructed, and pass out a sample unit for appraisal.

3) A minimum of one Wednesday afternoon per month should be spent orienting the personnel in each building with the Summer Workshop participant(s) from that building to be charged with this duty. This would include orienting the principal, first of all, to the need and worth of this use of in-service time. The exact agenda of the Wednesday afternoon workshops would be decided upon so it could be followed simultaneously at all schools. It would include defining humanistic education, affect, and value, and a consideration of appropriate teaching styles.

As the teachers become more aware of the direction of the project and more involved in it, they could begin to develop some units which the group of 80 Workshop participants could refine. They could also critique units to provide feedback to the 80 participants.

4) To develop the curriculum units for the remaining nine strands, the following procedure is recommended: The eighty workshop participants should meet at Seymour School at 2:30 p.m. on one Thursday afternoon per month to assign themselves tasks and discuss what needs to be accomplished, when, how, and by whom.

One Saturday per month (a week and a half after the Thursday meeting mentioned above) the participants should meet and work for 5 or 6 hours to continue to develop units and to polish those units developed by individuals.

It is the feeling of the General Learning consultants that one of the biggest problems facing the committee will be to discover some mechanism which will make it possible to produce the necessary number of units for the remaining nine strands in only twice the amount of time in which one strand's units were developed in the Summer Workshop. In the participants' favor is the fact that not all the units are as long in scope as the one we developed in the Workshop. Also the first one always takes longer since the process must be learned and internalized at the same time. Furthermore, it has been mentioned above that all the Workshop participants gained

the facility to develop units independently. Still there is much work remaining and ten Saturday's throughout the year provide very little time to accomplish a great deal of work.

5) A Public Relations Sub-Committee should be established to act as a liaison with the community. Among other activities this committee would probably:

- Organize a speakers' bureau
- Disseminate the videotape describing the program and its development
- Issue progress reports to newspapers after the monthly meetings
- Prepare human interest stories about participants
- Make monthly progress reports to the PTA
- Prepare news releases for the KNOW Bulletin and the UTA newsletter.

6) The Development Planning Committee also underscored the need (referred to in Section 8.1) for additional workshops for teachers. Their recommendations were varied in nature, but they particularly thought it would be useful to have a special K-8 workshop next summer (1973) just prior to the formal implementation of the program in Seymour School and a 9-12 workshop for the following summer (1974). The General Learning consultants feel that the magnitude of materials which need to be developed for the 88 high school level courses would warrant a special high school workshop both years. It is also essential to have opportunities for high school teachers to meet in

interdisciplinary groups for some of their planning since they tend to be less aware of the other disciplines than do their elementary counterparts teaching in self-contained classrooms.

8.6 Community and Student Involvement-Commitment in the Planning Process

Now that there is at least the nucleus of a plan (the model and the process) and a product (the curriculum units for the strand Man in His Physical Environment) the need to involve students and community members in the planning process of Project Search is timely and urgent. Both populations are of prime importance to the ultimate success of the program, and as recipients, it is natural that both groups should be anxious about the shape and content of the new curriculum.

8.7 Testing

Many of the teachers in the Summer Workshop seemed to sense that testing, at least in its traditional form and for the purpose of assigning a grade, may not be appropriate for a humanistic curriculum. The single grade in itself is usually too clumsy and too gross an instrument for such a subtle process of rewarding, motivating, or inspiring today's students. However, there are situations even in a humanistic curriculum where it would be appropriate to use formal tests. Such tests will also ensure that the basics and foundations of various subjects will not be neglected in a more open and humanistic curriculum. The tests which are indicated here are the diagnostic tests which have grown out of the individualized instruction movement. These tests allow one to place a student at a definite point in the curriculum stream of a subject. Once this has been done, there are instructional materials to allow the student to begin to study at that point. Usually a relatively short period of concentrated study will permit most students to remedy any serious

gaps in their background (normally from 1 to 3 weeks). Such a period of concentrated study in a basic area, e.g., reading or arithmetic, will permit a student to engage in more open activities and group activities without feeling desperate about the lack of some basic skill or operation.

The open activities and group activities -- which hopefully integrate many skills in an interesting and relevant way -- should call upon the student to use the skills he has learned in carrying out assignments and projects. For example, a student might be asked to calculate and prepare an order for the amount of paint that the class will need to paint a mural the size of an 18' x 6' wall.

In the interest of conveying an attitude that learning is a continuing human process, it is recommended that diagnostic tests be available in meaningful segments so that teachers and students can assess one problem or success area at a time. It is also recommended that such a revision provide for the elimination of graded symbols and that tests be known simply by the skill being surveyed.

A humanistic curriculum such as that encompassed in the Man and His World Model can quite naturally involve all of the branches of knowledge and all of the basic skills. Nevertheless, just as we know that many people do not follow a healthy diet even under the best of circumstances, some students will avoid developing their knowledge and skills in certain areas. If these deficiencies remain hidden, students may develop serious fundamental weaknesses in their learning foundation.

To prevent this, the teacher should be alert to the pattern of a student's work. If he detects a clue that the student is not developing in certain important areas (e.g. fractions in arithmetic) then a diagnostic test should be given and systematic work should be assigned until the deficiency is remedied. The student should be allowed to

end the special assignments as soon as he seems to be back on a reasonable course of development.

All students should periodically be given diagnostic tests in key skill and knowledge areas to uncover hidden gaps in their academic development.

8.8 Awareness of Developmental Stages in Students

During the course of the Workshop, Mrs. Dolores Freed made a valuable contribution by reproducing and distributing to the participants specific information on the psycho-motor developmental stages children pass through. It is essential that teachers planning curriculum units know what is considered normal for the various age levels in terms of sensory awareness, physical coordination, social-interpersonal development, play activities, speech and language, etc. Further developers of curriculum units for Project Search should also be given Mrs. Freed's materials.