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ABSTRACT

This health curriculum guide, intended for use with children in grades four through six, sees man's struggle to discover new knowledge for the prevention and control of disease in historical perspective. The contents of the guide are presented in outline form and cover the nature of disease, the history of disease, modern approaches to disease control, and the significance of disease to the individual and to society. For each content area and its sub-divisions fundamental concepts and understandings, teaching aids, and learning activities are suggested. The guide also supplies supplementary information--including infectious organisms, immunization, and antibiotics--which a teacher could incorporate into the lessons at a simplified level. Appendices include a time line to chart key advances in man's understanding of disease, an outline of the development of medicine and public health from the Stone Age to the present, information on noncommunicable diseases and ailments, and guidelines for independent study and class discussion. Multimedia resources are also listed. Outcomes of this unit in physical health are given in terms of understanding the basic differences between communicable and noncommunicable diseases, perspective gained on man's historical efforts to understand and cope with disease, familiarity with the mechanisms of immunity, and comprehension of the significance of disease prevention and control. (SES)

PROTOTYPE
CURRICULUM MATERIALS
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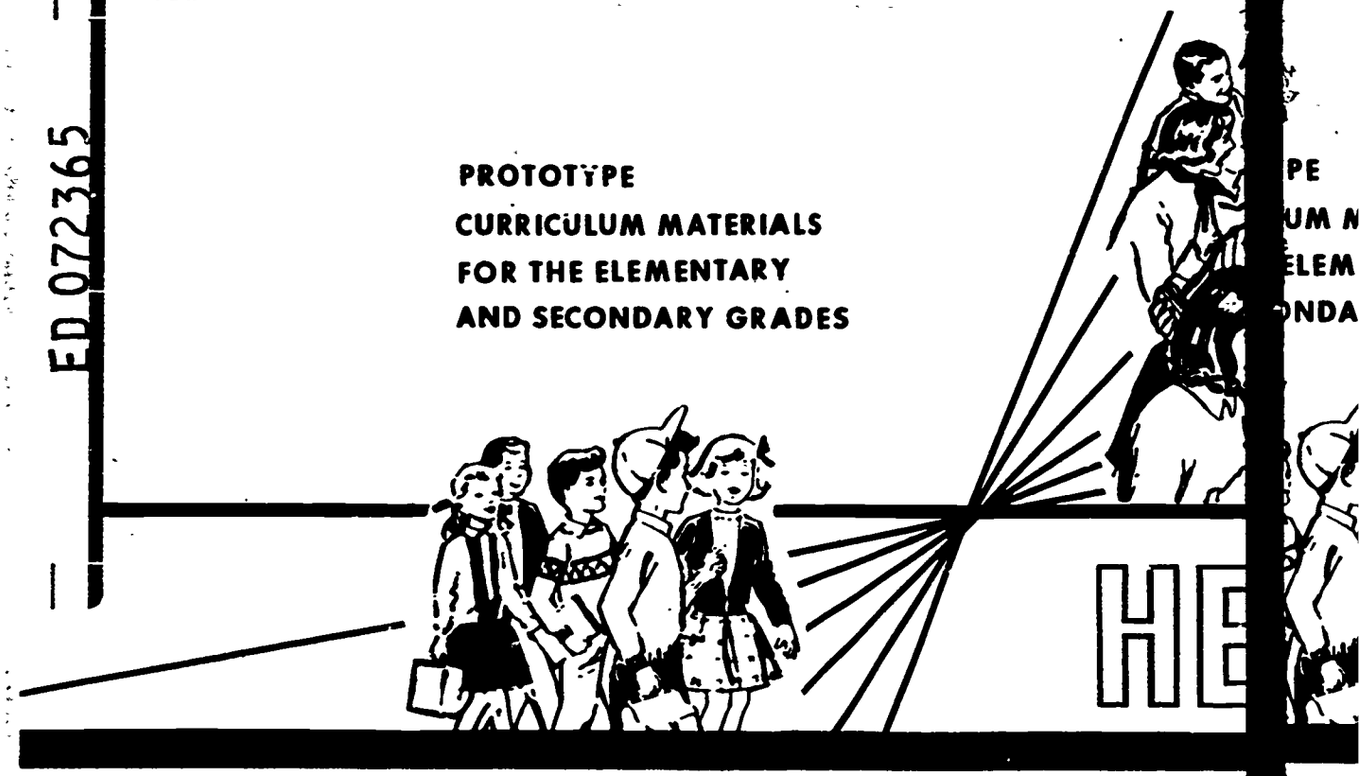

GRADES 4-6

STRAND I PHYSICAL HEALTH ND
DISEASE PREVENTIO

SPECIAL EDITION FOR EVALUATION AND DISCUSSIO R E

THE UNIVERSITY OF THE STATE OF NEW YORK/THE STATE EDUCA HE S
BUREAU OF ELEMENTARY CURRICULUM DEVELOPMENT/ALBANY, N Y CU

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ELEMENTARY
NDARY GRADES

HEALTH

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ND I PHYSICAL HEALTH

DISEASE PREVENTION AND CONTROL

OR EVALUATION AND DISCUSSION

THE STATE OF NEW YORK/THE STATE EDUCATION DEPARTMENT
Y CULUM DEVELOPMENT/ALBANY, NEW YORK 12224/1970

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HEALTH CURRICULUM MATERIALS
Grades 4, 5, 6

STRAND I, PHYSICAL HEALTH
Disease Prevention and Control

1970 Reprint

The University of the State of New York/The State Education Department
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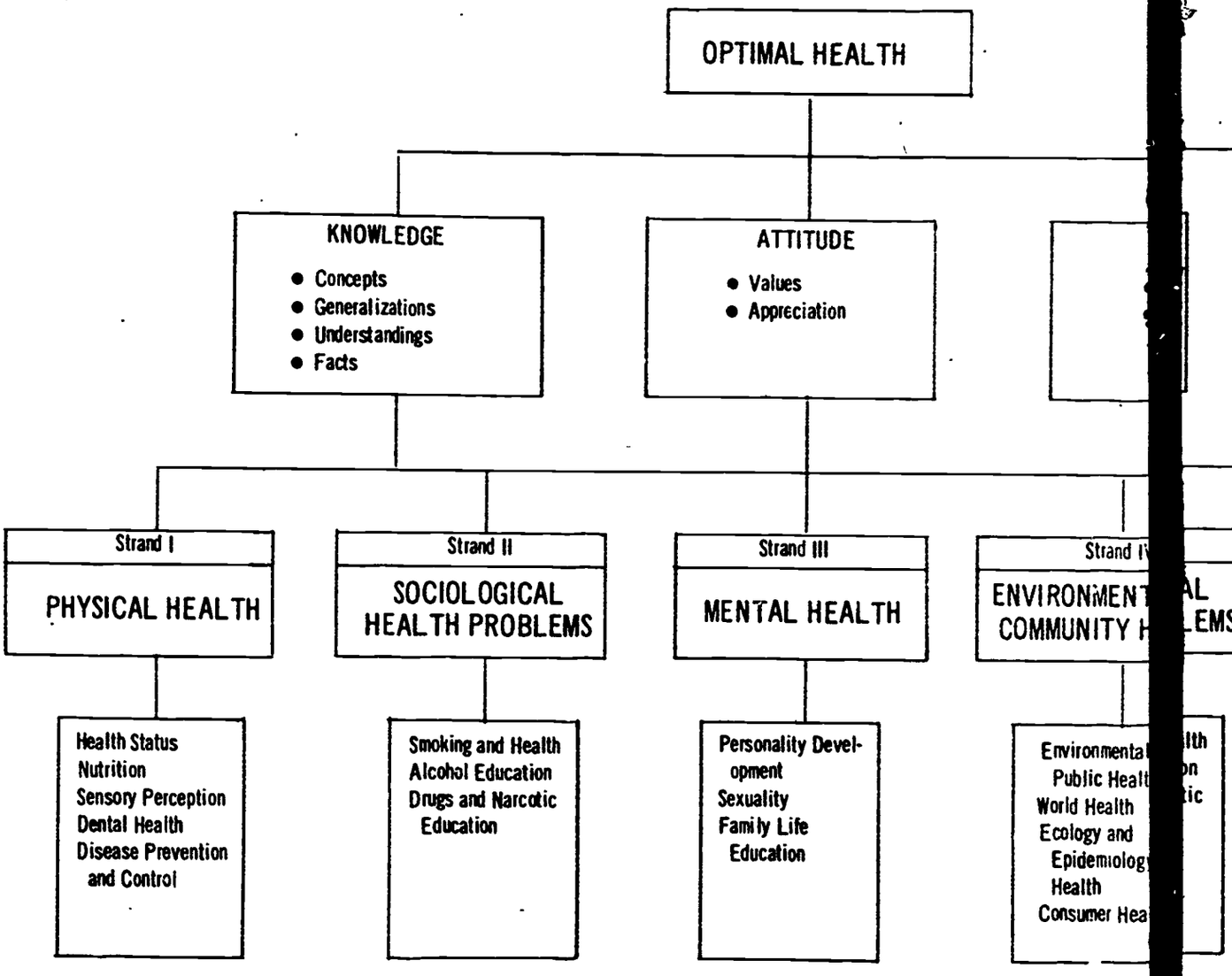
OPTIMAL HEALTH
KNOWLEDGE
• Concepts
• Generalizations
• Understandings
• Facts
ATTITUDE
• Values
• Appreciation
Strand I
PHYSICAL HEALTH
Strand II
SOCIOLOGICAL HEALTH PROBLEMS
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Nutrition
Sensory Perception
Dental Health
Disease Prevention and Control
Smoking and Health
Alcohol Education
Drugs and Narcotic Education
Personality Development
Sexuality
Family Life Education
Environmental
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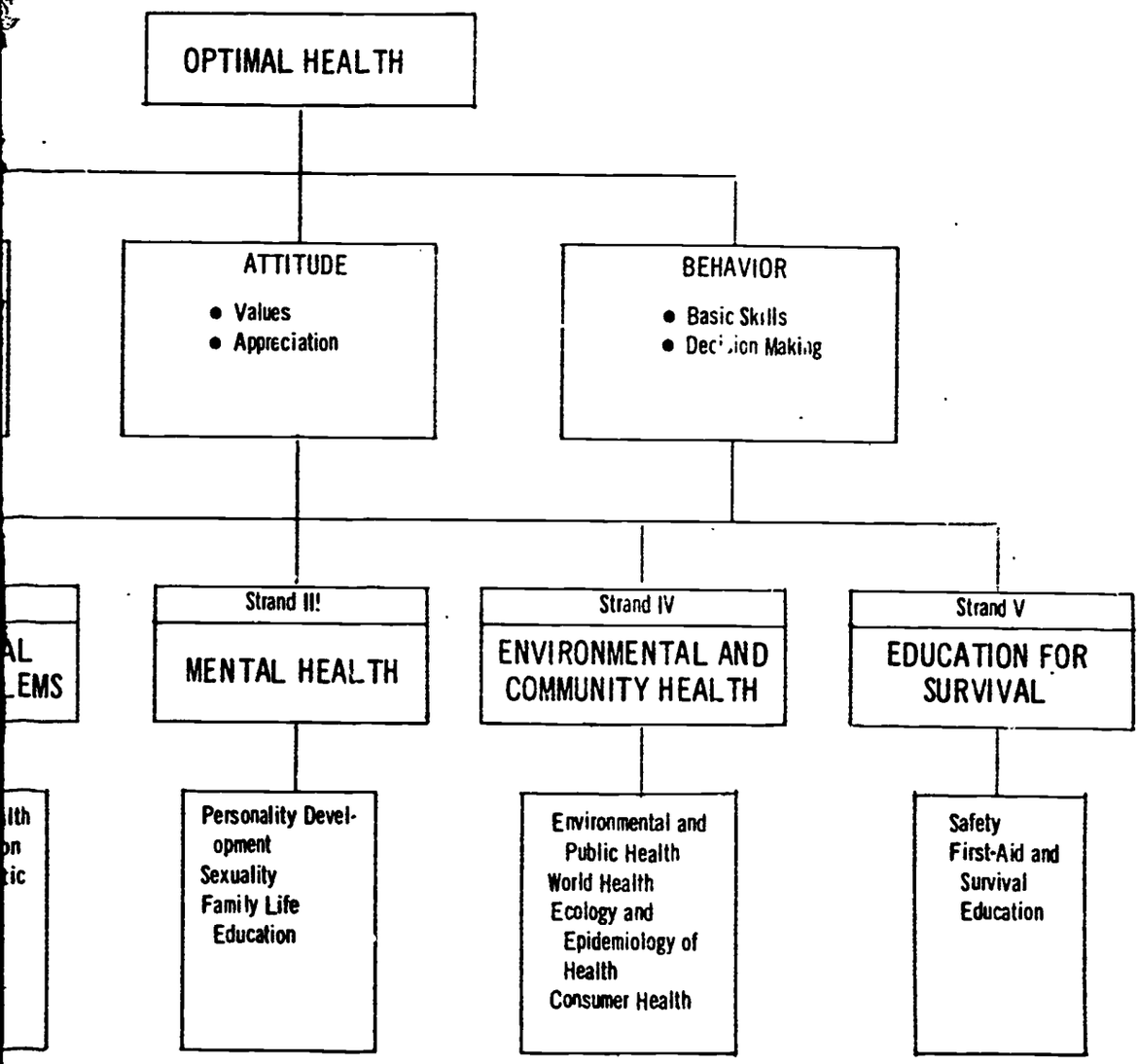
OPTIMAL HEALTH
ATTITUDE
• Values
• Appreciation
BEHAVIOR
• Basic Skills
• Decision Making
Strand III
MENTAL HEALTH
Strand IV
ENVIRONMENTAL AND COMMUNITY HEALTH
Strand V
EDUCATION FOR SURVIVAL
Personality Development
Sexuality
Family Life Education
Environmental and Public Health
World Health
Ecology and Epidemiology of Health
Consumer Health
Safety
First-Aid and Survival Education

STRAND I

PHYSICAL HEALTH

Disease Prevention and Control

Grades 4, 5, and 6

OVERVIEW

Since ancient times, men have attempted to understand diseases and their relationship to human efficiency. Concern with specific diseases has changed dramatically through the years, but contemporary health-scientists continue their relentless efforts to discover new knowledge necessary for the prevention and control of diseases that influence man's well-being. Present efforts to understand the ecological implications and the epidemiological significance of diseases have added new dimensions to man's understanding of the disease process.

STRAND I

PHYSICAL HEALTH

Disease Prevention and Control

Grades 4, 5, and 6

OUTCOMES

PUPILS IN GRADES 4, 5, AND 6 SHOULD:

- understand the basic differences between communicable and non-communicable disease syndromes and be familiar with representative diseases from each of these groups.

- gain perspective on man's historical efforts to understand and cope with disease, and appreciate how developments of the past are related to present efforts.

- be familiar with the mechanisms of immunity and take advantage of those immunizations recommended for the prevention of disease.

- comprehend the significance of disease prevention and control and work to protect themselves, their families, and society from all forms of disease.

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPL
I. The Nature of Disease	Disease takes many forms and may affect any part of the body	Discuss the following questions: 1. What is a disease? 2. What are man's accomplishments in combating disease in the past 50 years? 3. What were some early ideas about the nature of disease? What it was? What caused it?	Disea mitte son a disea are gious chara these they some orga
A. Kinds and types	A disease is any unhealthy condition of a part or all of the body.		
		Review transmission of communicable diseases, K-3.	
		Show movie: "Health heroes: the battle against disease." Discuss the significance of the contributions of a single person to the solution to major social problems.	
		Have pupils go to the library and research other "Health heroes" or significant developments.	
		Appoint two committees of 4 pupils each. 1. Have one committee develop a bibliography, with help from the	

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REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES
		librarian, on each of the areas of disease that are being studied. (These can become the basis for a resource center and independent study for the pupil.) 2. Have the second committee consult with the school health educator, school nurse-teacher, and dental hygiene teacher to determine the kinds of learning aids that are available in this area. These also can become part of the learning center.
1. communicable diseases	All communicable diseases are caused by infectious agents.	Review the three elements necessary for the occurrence of an infectious disease. Develop a comparison table with the class, using the following headings: 1. Name of disease 2. Infecting agent 3. Kind of immunity possible 4. General nature of the disease 5. Remarks Have pupils list two

RSTANDINGS AND TAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
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REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPL
		diseases for each causative agent and two diseases which are not communicable.	
	Communicable diseases are of many different kinds, but they are all capable of being transmitted from person to person.	Show and discuss the movie: "Your health: disease and its control." Coronet Films.	
2. noncommunicable diseases	Many diseases (e.g., degenerative diseases) which attack man cannot be transmitted from one person to another.	Have pupils write a short essay on "Why some diseases cannot be passed on to other people." Questions: 1. In what ways are noncommunicable diseases different from communicable? 2. Can some noncommunicable diseases be "caught" from someone who has it? 3. What are some examples of noncommunicable diseases? 4. How does the control of noncommunicable diseases differ from the communicable? How is it similar?	Not a are c ple: ly sp eases mitte son m munic disea and d Disea subdi gorie 1. D d t s 2. H f g n 3. C a g 4. T (

OR UNDERSTANDINGS AND UNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
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REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACITVITIES
B. Etiological considerations	There are many different causes of diseases.	Have pupils read and report on the following books: 1. *Dear little mumps child* 2. *Karen gets a fever* 3. *Michael gets the measles* 4. *Penny the medicine maker* 5. *Peter gets the chicken pox*
		Have a class committee: 1. obtain from the library all the books available on disease and its control. 2. obtain from the schoo health coordinator posters or other visu al charts. 3. obtain from the audio visual director slide fulmstrips and movies The above can be made int a display. Invite other pupils to see it.

JOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACITVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
ere are many different uses of diseases.	Have pupils read and report on the following books: 1. *Dear little mumps child* 2. *Karen gets a fever* 3. *Michael gets the measles* 4. *Penny the medicine maker* 5. *Peter gets the chicken pox*	Some causes of disease are specific, as in the case of infectious diseases, and some may be quite general, as in the case of some heart and circulatory diseases.
		The most common kinds of infectious organisms are: 1. Bacteria 2. Fungi 3. Protozoa 4. Spirochetes 5. Viruses (It is not necessary for pupils to learn or memorize all of these, but discussions of infectious diseases may be more meaningful if pupils are aware of the variety of organisms that may cause disease.)
	Have a class committee: 1. obtain from the library all the books available on disease and its control. 2. obtain from the school health coordinator posters or other visual charts, 3. obtain from the audio-visual director slides, fulmstrips and movies. The above can be made into a display. Invite other pupils to see it.	Most microorganisms that cause disease are parasites, i.e., they live in or on other living things. Parasites make humans ill, and often interfere with human life processes.

REFERENCE	MAJOR UNDERSTNADINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPP
	Age, sex, and heredity sometimes influence an individual's susceptibility to disease.	Have a committee of pupils write, direct, produce and act in a play based on some great event in man's attempts to conquer disease.	Dege dise stru They with cur Some due agin dire tiou pers of d woul hear turb neph Some prev one abet wome Rath heri vidu disp ease
II. History of Disease A. Prehistoric times	Man has always tried to understand the cause of disease, as attested by: 1. Prehistoric "evil spirits" theory 2. Later religious	Have class develop a time-line and through library research include the key events to man's efforts to understand disease.	Appe clas be c cove even wate

MAJOR UNDERSTNADINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
Age, sex, and heredity sometimes influence an individual's susceptibility to disease.	Have a committee of pupils write, direct, produce and act in a play based on some great event in man's attempts to conquer disease.	Degenerative diseases are diseases due to the destruction of body tissues. They are usually associated with old age, but may occur in the very young. Some of these diseases are due partly to heredity or aging. Some are the indirect results of infectious diseases or of poor personal hygiene. Examples of degenerative diseases would include some kinds of heart and circulatory disturbances, diabetes, and nephritis. Some diseases are more prevalent among members of one sex than another. Diabetes is more common in women, for example. Rather than directly inheriting diseases, individuals may inherit a predisposition to some diseases (e.g., diabetes).
Man has always tried to understand the cause of disease, as attested by: . Prehistoric "evil spirits" theory . Later religious	Have class develop a timeline and through library research include the key events to man's efforts to understand disease.	Appendix A represents a classroom chart which could be constructed of oaktag - covered with acetate and events written in with water soluble markers.

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES
	connotation as in the "Wrath of God" 3. Sun theory	
B. Early civilization 1. Roman Empire 2. Hebrews 3. Greeks	Each of the civilizations that developed during man's history has made contributions to our understanding of the factors related to disease prevention and control.	Have pupils do some library research and report on the: 1. Hebrew sanitary code 2. Eber Papyrus-Smith Papyrus 3. Hippocrates and the Hippocratic Oath. Discuss how he applied the scientific procedure to the practice of medicine.

ERSTANDINGS AND ENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
otation as in the th of God" heory		Prehistoric men thought diseases were due to the invasion of the body by evil spirits. The treatment was to appease these spirits or drive them from the body. Religion has been closely associated with disease since the earliest times. The Romans associated disease with unsanitary conditions as did the ancient Hebrew Culture. These conditions led to the development of elaborate drainage systems, water sysgems and general sanitary measures to deal with the problem on a public health level. SEE APPENDIX C
he civilizations loped during tory has made ions to our ung of the factors o disease pre- nd control.	Have pupils do some library research and report on the: 1. Hebrew sanitary code 2. Eber Papyrus-Smith Papyrus 3. Hippocrates and the Hippocratic Oath. Discuss how he applied the scientific procedure to the practice of medicine.	

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		Organize a panel to discuss the application of disease theories of the past to the present.
C. Modern Age	The discovery of micro-organisms, and the formulation of the germ theory of disease led to the development of new approaches to disease control (e.g. immunology)	Visit a modern health department or clinic. Compare the practices with those of 100 years ago; also just 25 years ago. How are they alike? How do they differ? Make a comparison table and put on the bulletin board. Add to it as more knowledge is acquired.
III. Modern Approaches to Disease Control	Some disease control measures are very specific (immunization), while others may be very general (sanitation).	See Strand IV - Public and Envi Details of Public Health Practi Visit the public health department or county laboratory. Learn how this department functions. Discuss: 1. Why are there special clinics for the control of disease?

MAJOR UNDERSTNADINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	Organize a panel to discuss the application of disease theories of the past to the present.	
The discovery of micro-organisms, and the formulation of the germ theory of disease led to the development of new approaches to disease control (e.g. immunology)	Visit a modern health department or clinic. Compare the practices with those of 100 years ago; also just 25 years ago. How are they alike? How do they differ? Make a comparison table and put on the bulletin board. Add to it as more knowledge is acquired.	Specific prevention measures and practices are noted with the advent of the modern age. The discovery of bacteria led to the development of the new sciences of bacteriology, virology, and immunology. Epidemiological practices improved and research became the key to the understanding and control of disease. The cornerstone of modern medicine was laid when Pasteur in 1864 demonstrated that specific microbes caused specific diseases.
Some disease control measures are very specific (immunization), while others may be very general (sanitation).	See Strand IV - Public and Environmental Health for Details of Public Health Practices. Visit the public health department or county laboratory. Learn how this department functions. Discuss: 1. Why are there special clinics for the control of disease?	Many diseases can be prevented by modern measures for disease control. These measures would include: 1. Individual responsibility 2. Public prevention measures

REFERENCE	MAJOR UNDERSTNADINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AI R UNI AND LEARNING ACTIVITI NDAME
		2. How does the depa ment know when to immunization clin 3. How does the depa ment cooperate wi family physician disease control a prevention? 4. What is the funct of the county lab tory? Make a dioramic displ the community's effor disease control. SEE APPENDIX B
A. Immunity and immunization	The body has a natural resistance to disease which may be genetically determined.	Select an appropriate body filmstrip(s), from Mc stanc Hill: may rmine 1. "Germ invaders" 2. "Invasion by dise 3. "Body defenses ag invasion by disea 4. "Helping body def against disease"
	Immunization is the process through which a person develops protection against a specific disease.	nizat throu lops nst a

R UNDERSTNADINGS AND NDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	2. How does the department know when to have immunization clinics? 3. How does the department cooperate with the family physician in disease control and prevention? 4. What is the function of the county laboratory? Make a dioramic display of the community's efforts in disease control. SEE APPENDIX B	3. Special cooperative measures, campaigns and activities 4. Application of research data. The first successful artificial immunization occurred in 1796 when Edward Jenner vaccinated a young boy against smallpox. This was the first specific preventive measure against disease developed by man. The process, basically, involves the introduction of an antigen into the body which, in turn, stimulates the body to produce antibodies.
body has a natural stance to disease n may be genetically rmined.	Select an appropriate filmstrip(s), from McGraw-Hill: 1. "Germ invaders" 2. "Invasion by disease" 3. "Body defenses against invasion by disease" 4. "Helping body defenses against disease"	Antibodies are chemical substances that may be injected into or developed by the body. These protect the individual from contracting a specific disease for which the antibody is intended.
nization is the proc- through which a person lops protection nst a specific disease.		Immunity may be classified as specific, that is, the ability of an individual to resist a specific disease. Specific immunity is relative, not absolute.

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACITIVTIES

DERSTANDINGS AND MENTAL CONEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACITIVTIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
		The toxins of some micro-organisms act so rapidly and are so poisonous that they take effect before the body has time to develop antibodies against them. Active immunity is the process whereby the body develops its own antibodies, either by having the disease (natural) or when given an antigen (acquired); whereas passive immunity is the process whereby the person receives these antibodies from an outside source, as when antibodies are transferred to the newborn baby from the mother before birth (natural) or when injected directly into the body (acquired). Active immunity provides longer-lasting protection than passive immunity (measles, mumps, chicken pox). In some instances periodic reinforcement through "booster" doses is necessary. There are, broadly speaking, two kinds of immunity: 1. Artificial in which the body is induced by artificial means (vac-

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES
		From Curriculum Materials Corporation: *Germs cause disease* *How disease germs are spread*
B. Public health measures 1. sanitation 2. research 3. diagnostic techniques	The public health department is concerned with the health of the entire community. The health department needs the cooperation of each individual.	Build on the diorama, already begun. The teacher may wish: (1) to to Strand IV "Public and Envi use this as a means to lead i or to introduce this area as to prevent and control diseas
C. Health education 1. school 2. home 3. public health education	Since much of the prevention and control of disease is dependent upon the individual's cooperation, it is important that each person be adequately informed about disease.	Ask the class to illustrate, list, or explain methods used to educate people about diseases. Compare the advantages and disadvantages of each. Pupils may survey such

JOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
		cination) to build its own antibodies, or the antibodies are introduced directly by inoculation. 2. Natural in which the body develops its own antibodies through some kind of natural inducement, such as having a disease for which immunity can be developed, and recovering from it.
	From Curriculum Materials Corporation: *Germs cause disease* *How disease germs are spread* Build on the diorama, already begun.	
e public health department is concerned with e health of the entire mmunity.	The teacher may wish: (1) to leave this area entirely to Strand IV "Public and Environmental Health"; (2) to use this as a means to lead into or from Strand IV; (3) or to introduce this area as a part of the total effort to prevent and control diseases.	
e health department eds the cooperation of ch individual.	Ask the class to illustrate, list, or explain methods used to educate people about diseases. Compare the advantages and disadvantages of each.	Much health education is going on in the home through daily practices, literature available, and the mass media, as well as the direct efforts of the parents to teach their children. Commercial
nce much of the prevention and control of disse is dependent upon e individual's cooperaon, it is important that ch person be adequately formed about disease.	Pupils may survey such	

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTA DERS FOR T ENTA
		areas as spot announcements on T.V. or radio, school's health education program, public forums, etc. Invite to class an executive secretary from one of the voluntary health agencies to discuss how their agency educates people about disease. Examples: American Cancer Society, TB and RD Association, American Heart Association, or the National Foundation.	product adv form of hea that has a fluence on as well as ing. It mi indicate to everyone's portant in to reinforc
D. Treatments 1. general 2. drugs	Treatment for disease may vary from simple bed rest to the use of a variety of modern drugs, surgery, and radiation. The discovery of many drugs has enabled man to control many diseases which a few years ago would have incapacitated or killed him.	Invite a physician to class to discuss how new drugs have changed the treatment of disease. Begin a "Museum of medical oddities." Include in the collection: old medicine bottles, medical books, instruments, pictures from the past, etc. Have pupils report to the class on the discovery	Some of our t fo are antibio m si "germ-killi se o produced by n dr Dr. Alexand atio given credi the first o overy drugs, peni s en Since then many have been d few tomycin is ve i important a d hi in this cat Scientists search the for substan beneficial

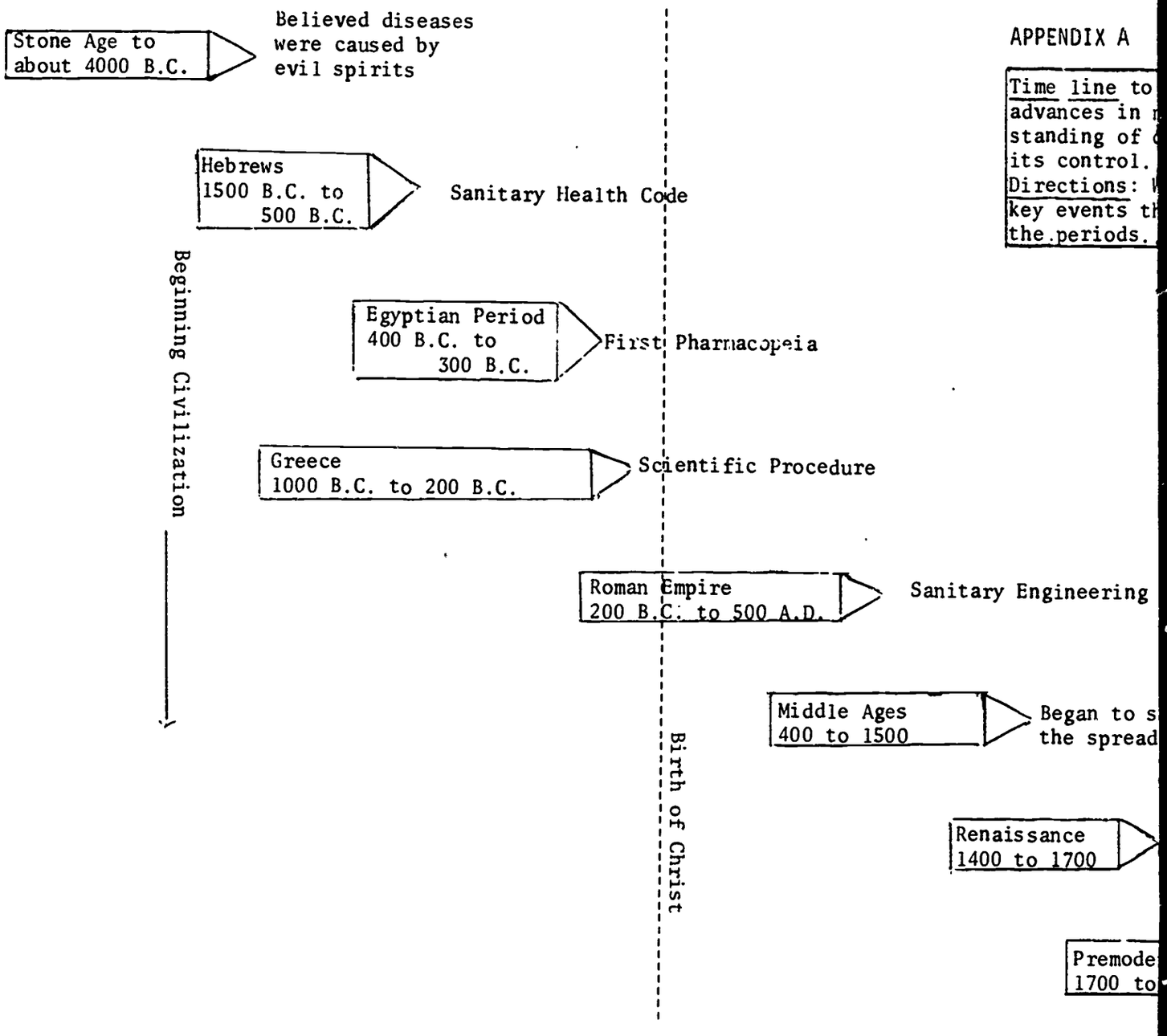
DERSTANDINGS AND ENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
	areas as spot announcements on T.V. or radio, school's health education program, public forums, etc.	product advertising is one form of health education that has a tremendous influence on health practices as well as consumer buying. It might be well to indicate to pupils that everyone's efforts are important in that they tend to reinforce each other.
	Invite to class an executive secretary from one of the voluntary health agencies to discuss how their agency educates people about disease. Examples: American Cancer Society, TB and RD Association, American Heart Association, or the National Foundation.	
t for disease may m simple bed rest se of a variety n drugs, surgery, ation.		Some of our newest drugs are antibiotics which are "germ-killing" substances produced by living plants. Dr. Alexander Fleming is given credit for discovering the first of the antibiotic drugs, penicillin, in 1928. Since then many antibiotics have been developed--Streptomycin is the second most important antibiotic drug in this category.
overy of many s enabled man to many diseases few years ago ve incapacitated d him.	Invite a physician to class to discuss how new drugs have changed the treatment of disease.	
	Begin a "Museum of medical oddities." Include in the collection: old medicine bottles, medical books, instruments, pictures from the past, etc.	
	Have pupils report to the class on the discovery	Scientists continue to search the "world of molds" for substances that may be beneficial in the treatment

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
		and use of one of the antibiotic drugs. Discuss: 1. How are they alike? 2. How do they differ? 3. What are their limitations? 4. Who can buy them? Why?	of disease. During the past 20 years numerous antibiotics have been identified and used for a variety of diseases. They are not, however, "cure-alls" since they have been ineffective against many diseases caused by virus agents. There is evidence, for example, that antibiotics may actually delay the recovery in the case of such diseases as the common cold, measles, mumps, and influenza. Many individuals have developed allergic reactions to some of the antibiotics. There is little doubt, because of a lack of information to the general public, as well as to the medical practitioner, that antibiotics have been too widely and indiscriminately used. Examples of drugs would include: insulin for the control of diabetes, antibiotics for the treatment of many infectious diseases, and tranquilizers for the control of certain emotional conditions.

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENT FOR
3. rehabilitation	Rehabilitation is an essential part of treatment, and includes those measures that help an individual to return to his family and community as rapidly, and as healthy as possible.	A rehabilitation counselor may be available to discuss the many ways that individuals may be rehabilitated.	An indivi cured of a example, d should be with his d function t his abilit
IV. Significance of Disease - It's Control and Prevention	Programs of disease prevention and control are dependent upon individuals being informed of the nature of disease.	Make a wall-size chart of the major causes of death 50 years ago and superimpose those of today. What kinds of changes have occurred? Why?	The major ago, pneum sis, influ all of whi cable dise decreased
A. To the individual			
1. personal efficiency	Illness causes personal unhappiness and loss of productivity as well as financial strain on the family.		They have by such co dents, hea ry disease kidney dis average li has increa degenerati a greater the commun
2. longevity			
B. To society			
1. economics and standard of living	Disease causes incapacitation, loss of time from work and retardation in efficiency, all of which will effec the total economy.		SEE AP
2. progress	Programs to prevent and control diseases have		

JOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
habilitation is an es- ntial part of treat- nt, and includes those asures that help an in- vidual to return to his mily and community as pidly, and as healthy possible.	A rehabilitation counselor may be available to discuss the many ways that individuals may be rehabilitated.	An individual may not be cured of a disease, for example, diabetes, but he should be taught to "live with his disability" and function to the best of his ability.
ograms of disease pre- ntion and control are pendent upon individu- s being informed of e nature of disease. lness causes personal happiness and loss of oductivity as well as nancial strain on the mily.	Make a wall-size chart of the major causes of death 50 years ago and superimpose those of today. What kinds of changes have occurred? Why?	The major killers 50 years ago, pneumonia, tuberculosis, influenza, diphtheria, all of which are communicable diseases, have decreased significantly. They have been replaced by such conditions as accidents, heart and circulatory diseases, cancer, and kidney diseases. Man's average life expectancy has increased so that the degenerative diseases are a greater problem than are the communicable diseases.
sease causes incapaci- tion, loss of time from rk and retardation in fficiency, all of which ll effect the total onomy. ograms to prevent and ntrol diseases have		SEE APPENDIX D

REFERENCE	MAJOR UNDERSTANDINGS AND FUNDAMENTAL CONCEPTS	SUGGESTED TEACHING AIDS AND LEARNING ACTIVITIES	SUPPLEMENTARY INFORMATION FOR TEACHERS
3. population trends	progressed from the incantations of the medicine man to complex programs based on:		
C. To the world	1. research 2. sanitary engineering 3. treatment 4. rehabilitation principles		

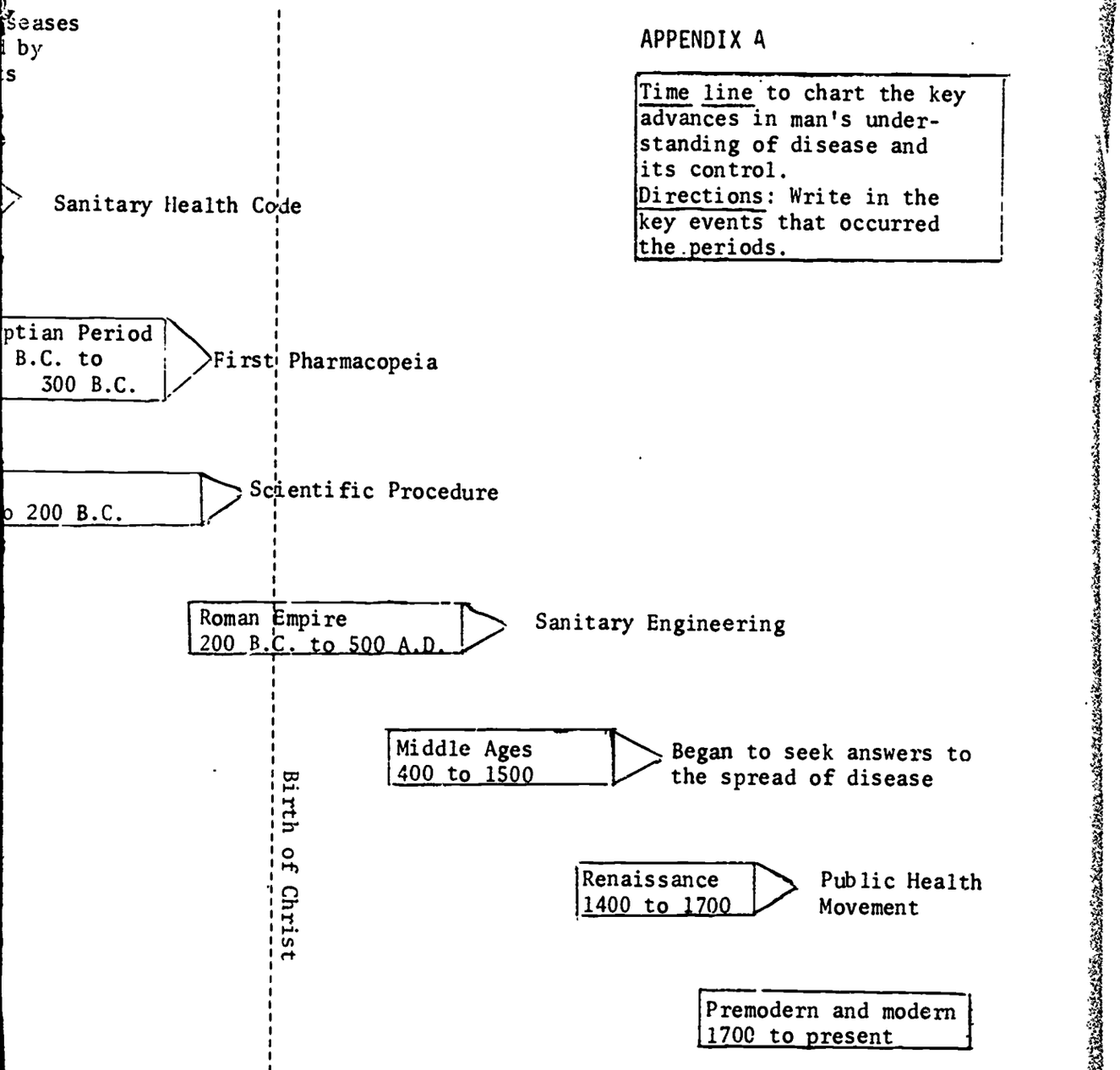


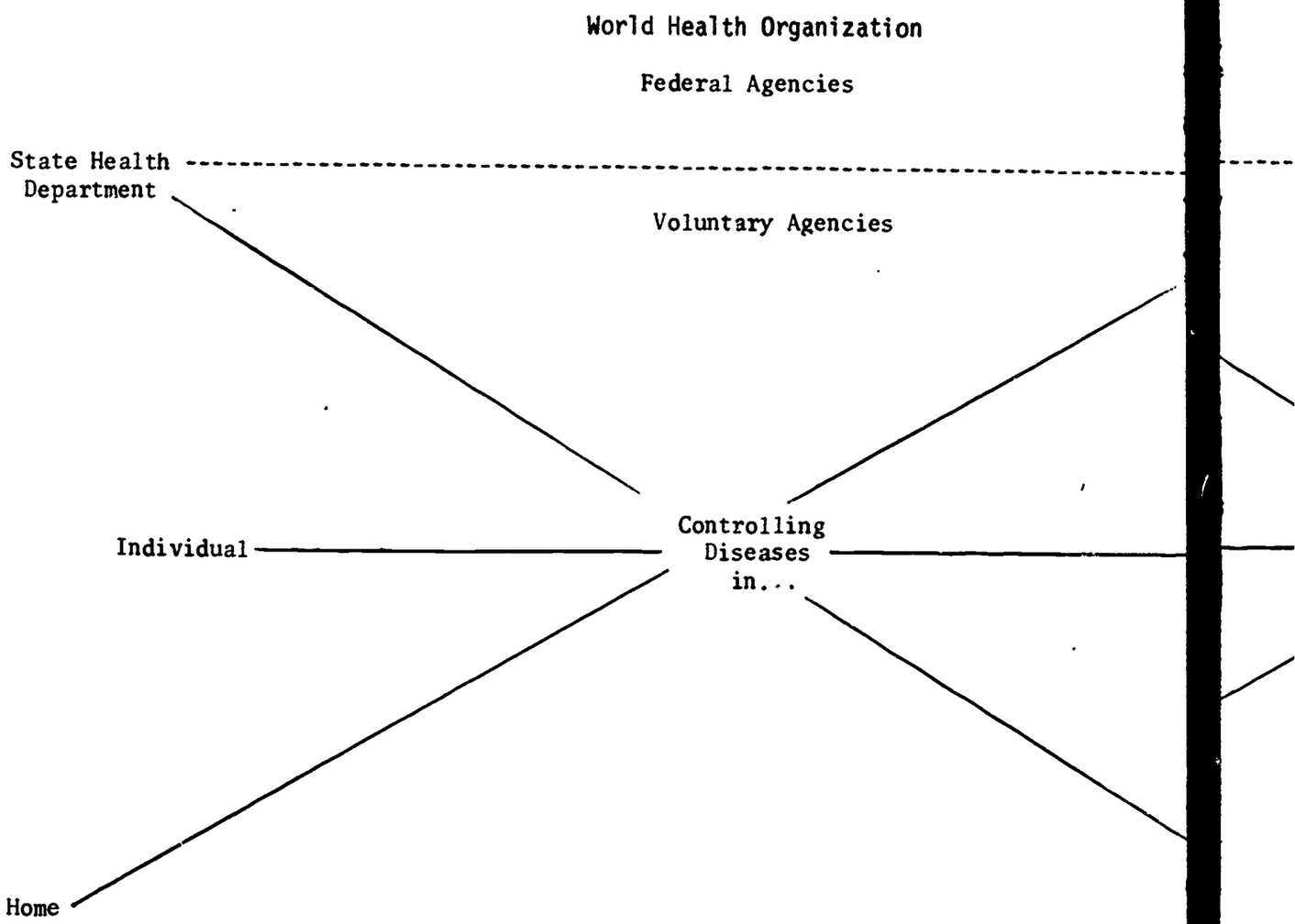
APPENDIX A

Time line to
advances in
standing of
its control.
Directions:
key events th
the periods.

APPENDIX A

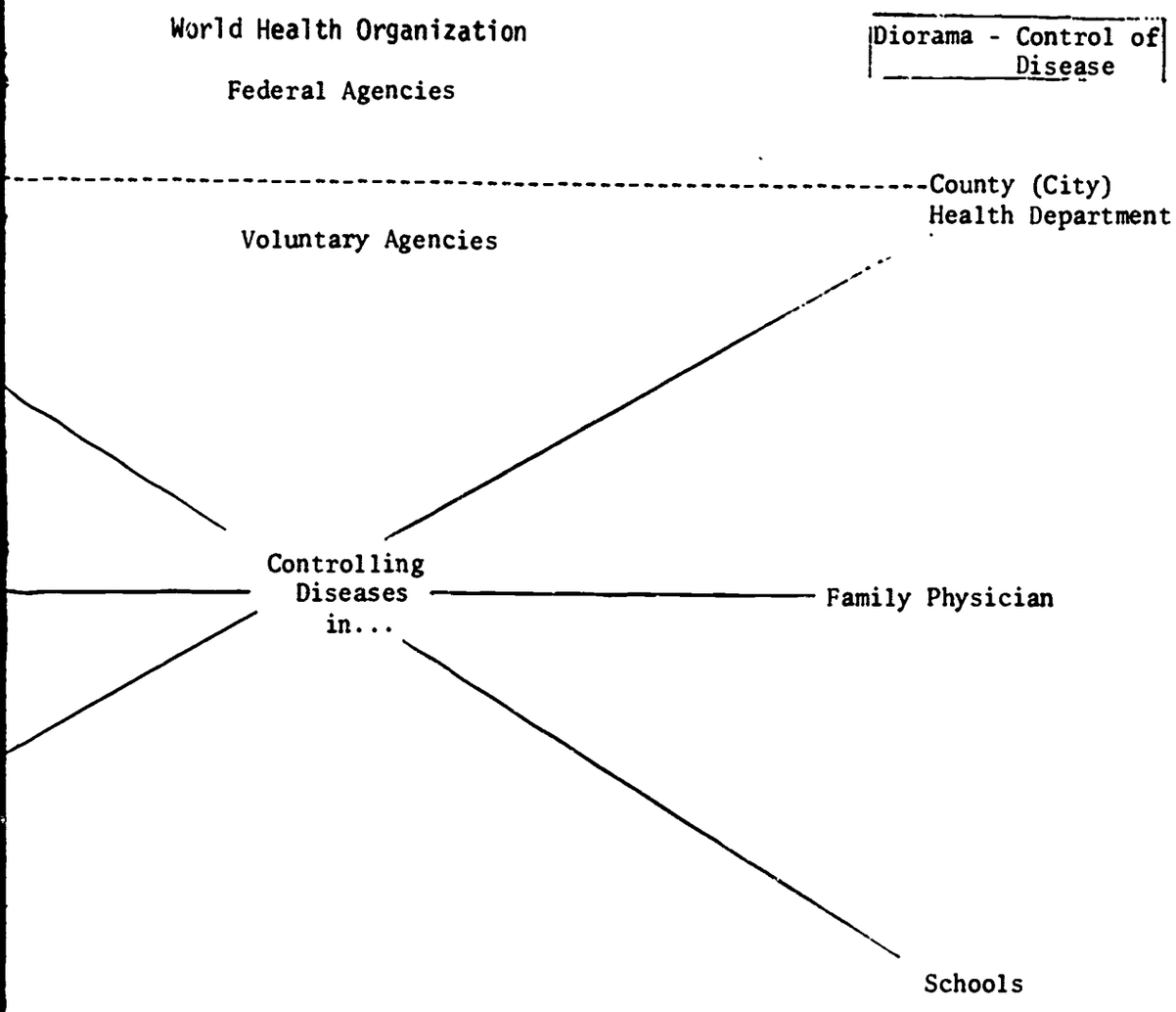
Time line to chart the key advances in man's understanding of disease and its control.
Directions: Write in the key events that occurred the periods.





Directions: Obtain materials and/or build models that will represent these agencies. Th /or b and printed materials illustrate how these help or hinder the control of all s illu and noncommunicable. Place on a large table or bulletin board. Connect ke Pl or yarn.

APPENDIX B



Diorama - Control of Disease

/or build models that will represent these agencies. Through models, diagrams,
s illustrate how these help or hinder the control of all diseases - communicable
Place on a large table or bulletin board. Connect key activities with string

APPENDIX C

A Brief Outline of the Development of Medicine and Public Health -

EVENT	S
Early Stone Age to Late Stone Age (To about 4000 BC)	
Ideas: 1. Superstition - fears 2. evil spirits - malign spirits 3. demons 4. ignorance	1. sought the 2. began simpl 3. laid the fo man's healt 4. recognized disease
Practices: 1. magic - incantation - offerings - sacrifices - all sorts of magic rites 2. medicine men & witch doctors 3. exorcising demons 4. trephining 5. use of some drugs from herbs	
Early Civilization (4000 BC to 800 BC)	
Egyptians (4000 BC to 1000 BC)	
1. Imhotep - first physician deified - 2980 BC a. temples built in his honor b. worship cures 2. Ebers Papyrus a. 300 prescriptions b. found by G.M. Ebers - 1873 3. Smith Papyrus a. extensive account of surgical procedures and bandaging	1. first pharm 2. standard re procedures 3. dressing fo 4. some break- practices 5. bandaging p

APPENDIX C

f Outline of the Development of Medicine and Public Health - Stone Age to Present

EVENT	SIGNIFICANCE
ate Stone Age	
tion - fears rits - malign spirits	1. sought the cause and treatment of disease 2. began simple surgical procedures 3. laid the foundation for group action to man's health problems 4. recognized cause and possible cure for disease
t - incantation - offerings - sacri- - all sorts of magic rites tine men & witch doctors tising demons ining of some drugs from herbs	
000 BC to 800 BC)	
1000 BC)	
hysician in his honor	1. first pharmacopeia 2. standard records for surgical and medical procedures 3. dressing for wounds 4. some break-away from true witch-doctor practices 5. bandaging procedures
tions Ebers - 1873	
tount of surgical procedures and	

b. found in a tomb of a high priest - late 1800's

Hebrews (1500 BC to 500 BC)

1. Hebrew health code
2. disease due to Jehovah's wrath - prayer and sacrifice
3. forbidden to use magic and charms
4. physicians and pharmacists
5. simple surgery - dressing for wounds
6. cures instead of appealing to Jehovah

1. public sanitation
2. purity of food, clothi
3. break from pure magica
4. isolation measures

Greece (1000 BC to 200 BC)

1. emphasized a strong body and moral excellence
2. Hippocrates (Father of Medicine) 460 to 375 BC
   a. Hippocratic Oath
   b. diagnostic techniques
3. Empedocles 490 to 430 BC
   Thought demons to be sometimes favorable and sometimes not

1. foundation to modern m diagnostic techniques
2. laid foundation for me purposes
3. recognized that disease
4. recognized that man de

Roman Empire (200 BC to 500 AD)

1. Roman sanitation (Sextus Julius Frontinus)
   a. aqueducts - public baths - running water - sewage disposal
   b. paved streets
   c. building codes
   d. purity of food
2. Census

1. established the basic p sanitary engineering
2. beginnings of community public health measures
3. many of the present day public health measures Roman principles

APPENDIX C

a high priest - late 1800's	
's wrath - prayer and and charms ists ing for wounds ing to Jehovah	1. public sanitation 2. purity of food, clothing, etc. 3. break from pure magical cures 4. isolation measures
y and moral excellence Medicine) 460 to 375 BC es C metimes favorable and	1. foundation to modern medical procedures - diagnostic techniques 2. laid foundation for medical ethics and purposes 3. recognized that disease did not always result 4. recognized that man develops as a whole being
AD) s Julius Frontinus) baths - running water -	1. established the basic principles for sanitary engineering 2. beginnings of community regulation of public health measures 3. many of the present day principles for public health measures were founded on Roman principles

APPENDIX C

Middle Ages (400 to 1500)

1. Black death (1348 to 1650)
   a. Venice excludes ships from infecting ports (1374)
   b. Marseilles established quarantine (1384)
   c. 1630 plague killed 500,000 people in Venetian Republic
   d. 1665 plague killed 1,000 people per week in London
2. General hygiene
   a. sanitation directed only toward visible filth
   b. isolation applied more strictly - but ineffective
   c. many Greek health principles during this era (e.g., emphasis on personal hygiene)

1. man began to recog 50)
   action in combati ips
2. re-established the
   health practices shed
3. gave impetus to se 500
   communicable disea
   1,0

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Renaissance (1400 to 1700)

1. Public health
   a. hospitals built for isolation
   b. quarantine more rigid
   c. municipal laws passed to regulate public health
2. Diseases
   a. bacteria still unknown
   b. theory persists that disease was bred in filth
   c. by the end of the 14th century 12 diseases were recognized as being communicable

1. beginnings of man'
2. curiosity aroused r is
3. science begins to gid
4. public health move sed
   derway, was stimul

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14th
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Pre-Modern Period (1700 to 1876)

187

1. Public health
   a. boards of health established (Boston first with Paul Revere as director)
   b. sanitary engineering
      (1) Roman methods revived
      (2) sewers built - first in Boston in 1833
      (3) by 1800, 16 cities had municipal water works

1. true public health
2. enforcement of pub stab
3. greater awareness ecto

ng
rev
- fi
ities

APPENDIX C

›50) ips from infecting ports shed quarantine (1384) 500,000 people in Venetian 1,000 people per week in d only toward visible filth more strictly - but ineffective principles during this era personal hygiene)	1. man began to recognize the need for group action in combating disease 2. re-established the beginnings in public health practices 3. gave impetus to seeking the answers to communicable disease control
r isolation gid sed to regulate public health nown at disease was bred in filth 14th century 12 diseases were g communicable	1. beginnings of man's control of disease 2. curiosity aroused anew 3. science begins to advance at a rapid pace 4. public health movement, although not underway, was stimulated
1876) stablished (Boston first with ector) ng revived first in Boston in 1833 ities had municipal water works	1. true public health measures taken 2. enforcement of public health practices 3. greater awareness of group action

c. vital statistics
2. Diseases
   a. immunity - 1798
   b. bacteria discovered

Modern Period (1876 to present)

1. bacteria and immunology
2. development of public health agencies
   a. official agencies
   b. voluntary
3. specialization of medical profession
4. public health today
   a. laws
   b. vital statistics
   c. sanitation
   d. laboratory work
   e. clinical work
   f. research
   g. education

1. development of new approaches
2. expansion of programs

3. expansion of the purposes and goals to include:
   a. promotion
   b. prevention
   c. education
   d. rehabilitation

APPENDIX D

Noncommunicable Diseases and Ailments

With the phenomenal reduction in deaths from communicable diseases since 1900, people are living longer and into the age range where they are more likely to be afflicted with the noncommunicable diseases. Included in this category are chronic, degenerative, or constitutional diseases. Of the 10 leading causes of death in the United States today, six are in this category, namely, diseases of the heart, cancer, stroke, arteriosclerosis, diabetes, and cirrhosis of the liver. Others that take their toll in sickness and possibly death are rheumatism, nephritis and other kidney diseases, asthma, and hay fever.

In a sense, the chronic diseases are a result of the destruction of the human body and of the gradual slowing down of its function. So it would be impossible with our present knowledge to prevent all the deaths and disabilities that they cause. However, many deaths and a great deal of incapacitation could be prevented if more people were better informed about these diseases and were willing to take precautions. These measures, in many instances, need emphasis in early childhood.

In spite of the fact that these are essentially diseases of middle and old age, children need instruction in this area. For the following reasons, this inclusion in the elementary grades is amply justified:

1. They are often the result of improper health practices that are formulated during childhood and adolescence.

2. Though they are essentially diseases of older people, chronic and degenerative diseases do afflict some children and young adults.

3. It is quite likely that school children will have indirect experience with one or more of these diseases as older relatives and/or friends become ill from them.

4. Periodic medical examinations can detect these illnesses and may prevent illness and premature loss of life.

APPENDIX E

Guidelines for independent study and class discussion:

1. Distinguish between communicable and noncommunicable disease.
2. What is an infection? How does it occur?
3. What are some common symptoms of infections?
4. What are the names of the organisms that cause infectious diseases? Name one disease resulting from the invasion of each organism named.
5. What general defenses against disease does the body have? Are these defenses against communicable disease only? Explain.
6. How do disease-producing agents enter the body?
7. How are germs transmitted from person to person?
8. What is the difference between body resistance to disease and immunity?
9. Distinguish between each of the following kinds of immunity:

   inherent

   temporary

   acquired active

   acquired passive

   natural

   artificial

10. What is a carrier?
11. How does disease control today differ from disease control 75 years ago?

DISEASE PREVENTION AND CONTROL

K-6

Multimedia Resources

These sup
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only and
requested
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comments
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Books

American Academy of Pediatrics. *Report of the committee on the control of communicable diseases.* P.O. Box 1034. Evanston, Illinois 60204. American Academy of Pediatrics. 1966.

American Public Health Association. *Control of communicable diseases in man.* 10th ed. 1790 Broadway. New York 10023. APHA.

Anderson, C.L. *School health practice.* St. Louis. C.V. Mosby Company. 1960.

Flaurier, Noel. *The modern health book.* Minneapolis, Minnesota 55415. T. S. Dennison (Collection of plays and recitations on the health theme.)

Haag, J.H. *School health program.* rev. ed. New York. Holt, Rinehart and Winston, In

Lee, Carvel, and Lee, Lorita. *The health bulletin board guide.* Minneapolis, Minnesota T. S. Dennison & Company, Inc.

Wilson, C.C., M.D. ed. School Health Services. *Report of the joint committee on healt education.* NEA-AMA. NEA 1201 16th Street, N.W. Washington, D.C. 20036. AMA 535 N. Chicago, Illinois 63610. 1953.

Pamphlets

Equitable Life Insurance Company. 1285 Avenue of the Americas. New York, New York.
"Common sense about common diseases"
"Protection against communicable diseases"

Metropolitan Life Insurance Company. School Health Bureau. 1 Madison Avenue. New Yor
"Parents...be wise--immunize!"
"To parents about immunization"
"Your personal health record"

DISEASE PREVENTION AND CONTROL

K-6

Multimedia Resources

These supplementary aids have not been evaluated. The list is appended for teacher convenience only and teachers in the field are requested to critically evaluate the materials and to forward their comments to the Curriculum Development Center.

Report of the committee on the
es. P.O. Box 1034. Evanston,
demy of Pediatrics. 1966.

on. *Control of communicable*
90 Broadway. New York 10023. APHA.

actice. St. Louis. C.V. Mosby Company. 1960.

th book. Minneapolis, Minnesota 55415. T. S. Dennison & Company, Inc.
itions on the health theme.)

n. rev. ed. New York. Holt, Rinehart and Winston, Inc. 1967.

ne health bulletin board guide. Minneapolis, Minnesota 55415.

ealth Services. *Report of the joint committee on health problems in*
16th Street, N.W. Washington, D.C. 20036. AMA 535 N. Dearborn Street.

. 1285 Avenue of the Americas. New York, New York.
eases"
le diseases"

any. School Health Bureau. 1 Madison Avenue. New York, New York.

National Tuberculosis Association, via local offices.
"Drugs that fight TB"

New York State Department of Health. 84 Holland Avenue. Albany, New York 12206.
"About germs"
"Infectious hepatitis"
"Measles"
"Mumps"
"Smallpox"
"The common cold"
"Triple vaccine"
"Typhoid fever"
"Whooping cough"

Prudential Insurance Company. Newark, New Jersey.
"Childhood diseases"
"Its fun to be healthy"

National Association for Retarded Children, Inc. 420 Lexington Avenue. New York, New York 10017.
"What you should know about measles and the measles vaccine"

Posters

"How to catch a cold. Series." Kimberly-Clark Corporation. Neenah, Wisconsin.

"Stop germs from spreading...keep clean." Local office. National TB Association.

"To fight germs, be sure to wash your hands." Local office. National TB Association.

Filmstrips

"Avoiding infections." Educational Record Sales.

"Be happy, be healthy." Hank Newenhouse, Inc. 1825 Willow Road. Northfield, Illinois 60093.

"Community helpers." Stanley Bowman.

"Food for good health." Encyclopedia Britannica, Inc. Wilmette, Illinois.

"Good health and you." Society for Visual Education.

"Health habits." Educational Record Sales.

"How to catch a cold." Walt Disney. 800 Sonora Avenue. Glendale, California 912

"The school nurse." McGraw-Hill.

"We have you covered." Society for Visual Education.

Films

"A community keeps healthy." Film Associates. 11559 Santa Monica Boulevard. Los
(For quick information, see the local Yellow Pages.)

"Eat for health." Encyclopedia Britannica.

"Eat well, grow well." Coronet. Coronet Building. Chicago, Illinois 60601.

"Germs and what they do." Coronet. Coronet Building. Chicago, Illinois 60601.

"Healthy families." Film Associates. 11559 Santa Monica Boulevard. Los Angeles,
or Yellow Pages. (Also available through Syracuse Universi , Film Library.)

"How Billy keeps clean." Coronet. Coronet Building. Chicago, Illinois 60601.

"How to catch a cold." New York State Film Library. 84 Holland Avenue. Albany, N

"I never catch a cold." Coronet. Coronet Building. Chicago, Illinois 60601.

"Joan avoids a cold." Coronet. Coronet Building. Chicago, Illinois 60601.

"Kitty cleans up." Mc-Graw - Hill.

"Let's keep food safe to eat." Coronet. Coronet Building. Chicago, Illinois 606

"Sleep for health." Encyclopedia Britannica.

"Your friend the doctor." Coronet. Coronet Building. Chicago, Illinois 60601.

d you." Society for Visual Education.

" Educational Record Sales.

cold." Walt Disney. 800 Sonora Avenue. Glendale, California 91201.

se." McGraw-Hill.

vered." Society for Visual Education.

eps healthy." Film Associates. 11559 Santa Monica Boulevard. Los Angeles, California 90025.
formation, see the local Yellow Pages.)

." Encyclopedia Britannica.

well." Coronet. Coronet Building. Chicago, Illinois 60601.

they do." Coronet. Coronet Building. Chicago, Illinois 60601.

es." Film Associates. 11559 Santa Monica Boulevard. Los Angeles, California 90025.
es. (Also available through Syracuse University Film Library.)

s clean." Coronet. Coronet Building. Chicago, Illinois 60601.

cold" New York State Film Library. 84 Holland Avenue. Albany, New York 12206.

a cold." Coronet. Coronet Building. Chicago, Illinois 60601.

cold." Coronet. Coronet Building. Chicago, Illinois 60601.

p." Mc-Graw - Hill.

d safe to eat." Coronet. Coronet Building. Chicago, Illinois 60601.

th." Encyclopedia Britannica.

e doctor." Coronet. Coronet Building. Chicago, Illinois 60601.

Film for teachers: "Things a teacher sees." International Film Bureau, Inc. 332 South Michigan Avenue. Chicago, Illinois 60604.