A RESOURCE UNIT IN HEALTHFUL LIVING FOR THE TENTH
GRADE CORE CLASS AT THE UNIVERSITY SCHOOL

A Thesis Presented for the
Degree of Master of Arts

By

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Approved by:

[Signature]
ACKNOWLEDGMENT

It is with sincere gratitude that the author acknowledges the interest, guidance and counsel of Dr. G. P. Cahoon in the preparation of this resource unit.
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CHAPTER I
INTRODUCTION

Importance of the Health Problem

Tremendous progress has been made in the length of the average life span of people. This we can attribute to scientific discoveries and inventions, as well as an increased public awareness of health practices. On the other hand, we still have with us charlatans, medical quacks, healing cults, and manufacturers of so-called miracle remedies.

Recent government releases show that forty per cent of all men between the ages of eighteen and thirty-eight were physically unable to meet the requirements set up by the federal government for military service.¹ Physicians estimate that seven thousand people yearly lose their lives needlessly from appendicitis. The loss of lives from injuries received in accidents continues at an alarming rate. Many of these lives might have been saved had some one at the scene intelligently applied

first-aid principles. Science has cleared the way for complete eradication of many of the communicable diseases. Yet we still have these diseases among us. Seventy-five thousand new patients are admitted to our mental institutions every year. At least half of all mental illness could be prevented, if we acted in time.

The University School Staff recognizes that, in addition to incidental health instruction in all areas, the total health problem is one that must be faced. Hence, it has provided through its core curriculum sufficient time at the tenth grade level for intensive study of the problem.

**Statement of Problem**

It is the purpose of this thesis to provide a resource unit that will be helpful to pupils and teachers in planning, developing and evaluating meaningful learning experiences. In particular a unit so constructed as to make its content easily accessible to core classes in their effort to gain a better understanding of our total health problem.

**Meaning of Resource Unit**

The resource unit is generally recognized as being
helpful in all classes, but it becomes especially significant in teaching a core class. A resource unit as defined by Alberthy is "a systematic and comprehensive survey, analysis, and organization of the possible problems, issues, activities, teaching aids, and the like, that a teacher might utilize in building units of work cooperatively with the students."

The relationship of the resource unit to the learning unit is discussed under the heading: Using the Resource Unit found later in the chapter. Meaning of Core

At the University School a three hour block of time is provided daily at the tenth grade level for core experiences. A major portion of this time is involved in working on core units. These units are developed from the "Problem Areas" which are identified in the area of personal living, personal-social living, and social-civic-economic living. Examples

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of some of the "Problem Areas" selected by the staff are: Healthful Living, Family Relationships, The Urban Society and The American Scene. In the Area of Healthful Living, just as in the other areas, the core teacher and pupils plan their unit work together. It is during the planning of learning activities that the teacher can draw upon and utilize the wide variety of sources and activities suggested in the resource unit.

In addition to unit work, this block of time in core provides an opportunity for other experiences such as: class business, class work projects, serving on school committees, planning social activities, free reading and writing and for special interests when no other provision is made.

Core as defined by Alberty, "may be regarded as that aspect of the total curriculum which is basic for all students, and which consists of learning activities that are organized without reference to conventional subject lines."³

³Ibid., p. 154.
The core teacher will want to invite the teachers in specialized areas to assist in planning and developing many of the learning activities.

In the area of Healthful Living the science teacher should work closely with the class and assist in developing learning activities which involve demonstrations, laboratory experiments, and the use of science materials. The health and physical education teacher could assist with activities dealing with posture, fatigue, rest and recreation; the language-arts teacher might suggest novels and short stories with health implications, as well as assist with the writing program; the home-arts teacher and the dietician could assist in the planning and developing of activities dealing with diet, personal appearance, etc.; the mathematics teacher would provide valuable assistance in helping pupils to interpret graphs and statistics. At the University School all area specialists are free to assist in the core program when they are needed.
Statement of University School's Philosophy and Purposes

The philosophy upon which this resource unit is developed is in accordance with the University School's philosophy. The University School subscribes to a democratic philosophy of education. This implies: 1) respect for human personality, 2) cooperative living, and 3) faith in the method of intelligence.

Respect for Human Personality

All children must have the opportunity to develop in all ways. Respect is built for differences in race, creed, wealth, class, sex, custom, language and beliefs. This implies recognizing variation and assuming the responsibility for developing group unity.

Faith in Living and Working Together for the Common Good.

Regardless of a pupil's ability or personal characteristics, there are certain experiences he should have in common with others his own age in a democratic setting. Pupils should be provided an opportunity to work together and share these common experiences.

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experiences. Cooperation implies a recognition of common concerns, purposes and problems.

Faith in the Method of Intelligence in all Areas of Living.

The development of democracy calls for people who believe in the use of intelligence as a means of improving life. People must have experience in recognizing conditions as they exist. They must also be able to envision a richer type of human life, made possible by their own cooperative action.

Role of the School.

In view of the stated philosophy, it seems the role of the school is to provide the finest possible environment for democratic living, an environment in which a deep concern is shown by teachers and students for the characteristics of a democratic society and a concern for developing the personal traits necessary to carry out the responsibilities of democratic living.

The University School Faculty submits the characteristics of a democratic society and the personal traits for democratic living to be as follows:⁵

⁵Ibid.
Characteristics of a Democratic Society

1. Developing and maintaining ever widening and deepening interests and appreciations.
2. Achieving and maintaining a sense of security.
3. Developing and maintaining a sense of achievement.
4. Maintaining personal health and promoting healthful living.
5. Achieving a social outlook on life.

Characteristics for Democratic Living

1. Social sensitivity
2. Tolerance
3. Cooperativeness
4. Ability to think reflectively
5. Creativeness
6. Self-direction
7. Esthetic appreciation

Objectives of the Resource Unit.

While any school experience should make a contribution to the achievement of the purposes stated above, this unit can make its major contribution in developing the fourth characteristic of a democratic society; namely, maintaining personal health and promoting healthful living. When this purpose is analyzed and the adolescent needs and
interests in Chapter II are considered the following objectives emerge.

1) To assist the individual in developing the ability to get, relate, organize, and retain scientific facts in healthful living.

2) To assist in establishing health habits and skills; that is, to develop the ability to do things thoroughly and accurately. With the ability to do should be established the desire to carry out such practices in every day home and school life.

3) To assist in the formation of right attitudes and understandings toward health practices and toward the welfare of the group.

4) To assist the individual in using the method of intelligence in dealing with personal, group and community health problems as he seeks to:
   a) Understand his basic needs of food, clothing and shelter.
   b) Establish a balance of work, rest and relaxation.
   c) Control emotions such as fear, worry, hate, jealousy and joy.
   d) Protect himself against infection.
e) Develop muscle tone and reserve energy.

f) Understand a wide range of variability that can exist within the concepts of normality.

g) Understand his social role and maintain a healthy social adjustment.

h) Cooperatively plan for:

1. Community sanitation - home, public institutions and industry.

2. Adequate medical care for all people.


4. Progress in the control and elimination of contagious diseases.

5. Promoting and assisting community projects that will raise the health standards.

Description of Procedures.

To facilitate organization seven areas for study have been selected. These seven areas were chosen for their contribution toward the attainment of the objectives mentioned and for their appropriateness in view of the adolescent needs, interests and concerns presented in Chapter II.
These Areas are:

1. Preventing and Combatting Disease
2. Body Concerns
3. Posture, Fatigue, Rest and Relaxation
4. Accidents
5. Inheritance
6. Social Health
7. Community Health

This resource unit suggests activities in each of these areas which should contribute to the understanding of the health problems involved. The word activities refers to learning experiences which teachers and pupils plan for the purpose of solving problems in attaining the objectives of the unit. They include projects, demonstrations, field trips, round table discussions, laboratory experiments, oral and written reports, creative work, such as making posters, and directed studies.

Each group of activities is concluded with a selected list of references such as: books, pamphlets, periodicals and audio-visual aids. Some of these references may not bear directly on any one activity, but may furnish significant materials of value in dealing with other health
problems or student inquiries that might arise in planning and developing the learning unit.

**Using the Unit - Its Delimitation.**

A resource unit is not a guide to follow, but a guide to suggested activities, techniques and sources that can be drawn upon to assist in teacher-pupil planning of learning units. A learning unit is a center of interest or a unit of work, developed cooperatively by pupils and teacher in order to achieve desired goals and understandings. It involves planning, developing and evaluating learning experiences in the light of the desired outcomes. By making available a reservoir of suggested activities and references the resource unit seems indispensable when used to implement the learning unit. As the teacher builds up a storehouse of resources a filing system will need to be set up so as to make these materials easily accessible to the students. To the extent that it is possible, all periodicals, pamphlets, and bulletins listed as references in this resource unit should be found in the resource files.

**Student Participation**

An opportunity should be provided where pupils
can assist in collecting materials and aids for their study. Valuable experience may be gained in learning how to efficiently use the library and in learning to use sources which may direct them in finding the information desired. Quite often many valuable resources, other than those found in the library, are lost or forgotten. This could be avoided by placing in the hands of the pupils resource cards for use when such material is located. The following type of card, or a similar one, might fulfill this purpose.

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</table>

**Author**

**Title**

**Publishers**

(or periodical)

**Date**

**Source**

Useful for
Previous Studies

Harold Albery in his latest book⁶ provides a framework for building resource units, and illustrates this with the resource unit, "Problems of Living in the Air Age." The techniques employed by the writer in developing this resource unit were guided by the criteria presented in this book. A resource unit, "Science: Servant or Master" was developed by a workshop group under the direction of Harold Albery.⁷ Gertrude W. Diederich's "A Source Unit in Genetics" is widely known.⁸ James A. Rutledge's, "A Source Unit in First Aid for High School Science Classes," contains closely related material in the area of accidents.⁹ Harold C. Hand and others resource unit, "Living in the Atomic Age" contains


⁷Harold Albery and others, Science: Servant or Master. Columbus: Ohio State University, 1946.


activities with health implications. Oceans Kessler's "A Source Unit -- Biological Reproduction and Heredity" contains an extensive collection of teaching materials on the subject.  

Eugene W. Morgan's, "Biology Projects for a Unit on Food, Health and Conservation," although not a source unit contains related health materials. Delbert Oberteuffer's and P. C. Bechtel's "Health Activities and Problems" is a workbook containing a wide variety of health activities.  

Ross L. Mooney's, "Problem Check List," included health as one of the areas to explore pupil interest.  

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Donald C. Doane’s research on "The Needs of Youth" revealed the pupil’s choice of health topics.15

R. Will Burnett’s, "To Live in Health" is perhaps the best known recent book on health for secondary school students.16

Organization of The Thesis

The Thesis has been divided into five chapters as follows:

Chapter I Introduction
Chapter II Adolescent Needs and Interests
Chapter III Activities and References
Chapter IV Evaluation
Chapter V Summary

Bibliography
Appendix

The philosophy and objectives of this resource unit are found in Chapter I. The objectives together with the adolescent needs and interests presented in Chapter II were used as a guide for selecting the activities listed in Chapter III. Suggested techniques to evaluate progress in the light of the objectives institutes Chapter IV.


CHAPTER II

YOUTH NEEDS AND INTERESTS

Interests of Adolescents in the Area of Healthful Living.

In order to select and suggest appropriate activities in the area of healthful living, particular consideration was given to two professional studies that set up procedures to ascertain adolescent health needs and interests. The first of these, "Health Interests of Children,"\(^1\) is a publication of the Denver Public Schools.

Recognizing that health interests were indispensable as a basis for developing a functional health program, a research committee from the professional staff of the Denver, Colorado, Schools was appointed to carry out a research project to determine the health interests, needs, and concerns of children. Questionnaires were submitted to students. Parents and teachers were likewise used as resources of information. Eighteen broad areas of health within which the health interests and needs of children might fall were selected by the committee. A sampling of

the approximately 50,000 Denver School children was chosen in such a way as to provide a cross section of the economic and social groups of the city. All together, 3,600 pupils from grades four through twelve participated, 1,200 at each school level.

The committee made graphs to show the responses of boys and girls to health questions in the eighteen health areas. In spite of the limitations of these statistical findings, they presented pertinent data that was valuable and helpful in the selection of health activities.

Since this resource unit particularly concerns itself with the health problems of tenth grade students, the following interpretations and comments concerning the Denver graphs will be limited to the findings at the tenth grade level.

Interest in learning about body structure and function was comparatively low among the girls, whereas over eighty per cent of the boys were interested in "how the body is made," "why you are tall or short," and "what causes a Charley horse." Interest in the activities dealing with food selection and composition was low among both boys and girls, with the exception of the activity
"to find out how food affects your weight." Highest interest of both boys and girls in this activity came at the tenth grade level. Boys and girls showed very marked interest in the activities concerned with personal appearance and with keeping fit. Obviously the girls had almost no interest in building muscles, whereas boys were one hundred per cent interested. Activities in keeping with these health interests of boys and girls at the tenth grade level have been suggested in Chapter III.

Boys and girls recorded little interest in studying the laws of heredity, but showed much interest in wanting to learn why their eyes were brown or blue. (See activity four under Heredity.) It would appear that activities have more appeal for adolescents if expressed in terms that are meaningful to them.

Interpretations similar to those above could be made regarding all of the graphs chosen from the Denver Study. The interests indicated on them were kept in mind and played a part in the selection of activities suggested for the various problem areas.

A sampling of these graphs is reproduced in the Appendix.
A problem check list was given to a group of 145 ninth grade students in Dayton, Ohio. The check list was constructed by Ross Mooney\(^2\) and was presented to the students by Roy W. Kessler\(^3\) in a survey, made to determine interests and needs of youth. In the health area results of the study showed the eleven highest items, according to interest and preference, in the following order:

1. Don't like some foods I need.
2. Not good looking.
3. Poor complexion.
4. Underweight.
5. Catch a good many colds.
6. Often not hungry for my meals.
7. Don't get enough sleep.
8. Often have headaches.
9. Trouble with my eyes.
10. Too short for my age.
11. Not as strong and healthy as I should be.


\(^3\)Roy W. Kessler, "Evidence of the Worth of the Mooney Check List." Master's Thesis, Ohio State University, 1943.
Donald C. Doane, in his research on the needs of youth, found that interests in the topics grouped under health appear to vary greatly.\(^4\) The results listed below were taken from responses to a choice of health topics of 2,069 youths from four areas, Oakland, Pittsburg, Nebraska, and Virginia. The age level of both boys and girls was from fourteen to eighteen years.

How to protect yourself from common diseases, such as:

- tuberculosis, cancer, heart trouble, etc. \(--------- 55\%\)
- How to keep well and physically fit \(--------- 52\%\)
- Care of the body \(--------------------- 42\%\)
- Preventing disease \(--------------------- 38\%\)
- How to select foods that will do you the most good \(--------------------- 37\%\)
- Effect of alcohol and tobacco \(--------------------- 33\%\)
- Maintaining a good posture \(--------------------- 35\%\)
- What germs are and how they spread \(--------------------- 23\%\)
- Medicines \(--------------------- 22\%\)
- Headaches, constipation, and other ailments, causes and what to do about them \(--------------------- 21\%\)
- Glands and their functions \(--------------------- 18\%\)

Examination of the items in the order of preference reveals that the more personalized topics, such as, "how to protect yourself from communicable diseases," tend to be selected in preference to the more impersonal topics. It appears that the wording of a topic may determine the appeal to the student. "How to keep well" would appeal more as a topic for study than "glands and their function," even though the latter may well be studied as a means to an understanding of the former.

**Developmental Characteristics of Adolescents.**

Further insight may be gained in the selection of appropriate activities in the area of healthful living through an understanding of adolescence. "How Children Develop," by the Faculty of the Ohio State University School, is a study of child development from infancy to late adolescence. This research was made as a basis for curriculum construction at the University School. This study of the physical, mental, emotional, and social characteristics of youth indicates what interests and needs are common to most students. An overview of the develop-

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5 *How Children Develop.* Faculty, University School, Ohio State University. p. 50.
mental characteristics of adolescence is presented here as a basis for further identifying youth needs, interests, and concerns.

**Early Adolescence.**

The period of early adolescence refers to the thirteen and fourteen-year old. Girls are one year in advance of boys in physical maturity. This is a period of rapid growth, for boys in particular, accompanied for the most part by an increase in appetite. This age can appropriately be called the awkward age. Along with rapid physical growth, there is a tendency toward sluggishness and bad posture. In contrast to this, some boys and girls tend to be very active at this level and desire participation in activities which will release excess energy.

Significant are the glandular changes that are taking place, which are regulating the functioning of the body processes. Although students tend to give the impression of having but little concern over the organic changes in their development, there exists a hidden concern for what is happening to their bodies. This outward manifestation of little concern is exemplified in the lack of counsel sought from adults. Concealing this concern may be
attributed to the "We don't talk about that" attitude of our society toward sex. Students are free and eager to discuss the glandular changes that are taking place with teachers in whom they have confidence. Deep concerns are shown in matters relating to skin disorders, muscles, (boys) and personality development.

A great concern for group loyalty is particularly noticeable at this age level, even though the behavior of the immediate group may be in conflict with acceptable social standards. Unwillingness to get as much sleep as is needed, the use of stimulants, and a disregard for proper eating habits might be listed as the sort of things that characterize the adolescent who seeks favor and wants to be accepted by the group.

Some of these children feel frustrated in their relationship with the opposite sex. They continue to be strangers to one another and do not understand the changes in themselves or in their friends. Sex activities which have been infantile in their expression, tend to become adult. Sex education, frank, honest, and straightforward, is appropriate at this time.6 Adding to the frustration

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of some adolescents is the insecure feeling due to physical inadequacies, which may lead to withdrawal from group activities. On the other hand, physical superiority may lead to exhibitionism. Withdrawal from group activities or exhibitionism may imply the existence of a more basic problem.7

Children at this period show a concern about communicable diseases. They are eager for verification or lack of verification of the statements they have heard regarding venereal diseases, athlete's foot, colds, etc. This concern for verification of what they have heard from friends and laymen provides an opportunity for the teaching of how to secure reliable data and how to check the reliability of an authority.

During adolescence the child wants to achieve adult status and privileges. Often this desire is so great that it leads to participation in activities which may not be constructive. A need is here indicated for an activity dealing with a study of the recreational opportunities that are provided for adolescents.

7How Children Develop. Faculty, University School. Ohio State University, p. 51.
The interest span of students in this period is relatively short. What may seem like intense interest one week, may be just the reverse the next. This characteristic seems to suggest not only concentrated study when interest is high, but it also points the need for a storehouse of well-organized resources, where materials can quickly be brought to hand. Student interest may be easily lost, if it is permitted to wane during the procedure of obtaining appropriate materials.

English and Pearson state:

The beginning of adolescence has a definite, though temporary, effect on the learning capacity of most children. A child who has made good progress in the early grades often shows deterioration in the quality of his school work in the seventh or eighth grade. Later his efficiency returns to its old level. In some children this phenomenon is very marked; in others it occurs only to a slight degree. Its explanation seems to lie in two directions—the acceleration in the growth of the central nervous system and the increased sensitization of the sensory organs by the resurging sexual life.\(^8\)

The proper selection of activities and the added stimulus of pupil-teacher planning can help to offset this effect of physiological changes on the learning capacity.

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Middle Adolescence.

The period of middle adolescence is generally considered to be from the age of fourteen through sixteen. It appears that some variability exists in the physical, mental, and social development of adolescents. Some students may not show the characteristics common to this period, even though they may be fourteen years old. This variation in adolescent development should be recognized, and consideration should be given to these differences in providing appropriate activities at the various maturity levels represented by a particular group of students.

The rest needs are similar to those of early adolescence, about eight hours. Boys grow rapidly during this period and have a keen interest in being big and strong. It is not always convincing to them that muscles can be developed through enjoyable physical activities, rather than by weight-lifting activities. Any program advertising a prescribed body-building course seems to be of interest to them.

Relatively speaking, physical and organic stability has been reached during the latter part of this period. Boys and girls are concerned with eating the right foods
in order to be healthy, however they often go to extremes in consuming large quantities of right foods, for example, drinking a great amount of milk at one time. Boys appear to be critical of what they expect the right food to do for them by way of increased weight and height.

Much concern is shown in respect to social and personal health problems. Personal problems deal with nervousness, body odor, stature, skin disorders, and grooming (girls), while social problems may concern sterilization, vaccination, or problems associated with disease.

Synonymous with personal concern is an increased sensitivity to the opposite sex. Some make this social adjustment with a minimum of emotional conflicts, while others worry and develop extreme self-consciousness in making this adjustment. Boys and girls need to acquire ability to get along with each other -- in school or at parties, at work or at play. It is important to provide activities that will help boys and girls understand the significance of various social opportunities and will give them the "know how" of socially acceptable behavior.

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Many of the children have found hobbies and other recreational interests. Some of these hobbies are the kind that will be of permanent interest to them.

During the latter part of the middle adolescence there is interest in developing an understanding that the past is important, because of its contribution to the present. Boys in particular enjoy reading about scientists and statesmen who have made real contributions to society.

Later Adolescence.

During this period children are more sensitive to dealing with problems of their immediate and wider environment. Having gained somewhat greater independence, they show an awareness of community health problems, and many are eager to study and make contributions toward improving health standards in the community. They are more realistic in their approach to solving problems, and they have greater control over emotional behavior.

Greater emphasis seems to be placed on values. The physical examination has more meaning to them. Greater concern is shown in finding the cause of diseases and the cause of such personal disturbances as: dizziness, heart palpitation, and faintness. Body conditioning and the
differences in individuals in the amount of expendable energy on the one hand, and the rate of fatigue, on the other, are important concerns to boys in athletics.

**Needs of Adolescents in the Area of Healthful Living.**

The report of the Committee on the Function of Science in General Education lists four centers of reference that are used to identify worthy interests and needs in the basic aspects of living. They are: 1) Personal Living, 2) Immediate Personal-Social Relationships, 3) Social-Civic Relationships, and 4) Economic Relationships. 10

It is suggested that knowledge in the following areas will make an important contribution to the intelligent conduct of adolescents in all four of these centers of reference.

**Diet.**

Activities in this area should contribute toward consistency and intelligence in following a program of good dietary health practices, toward

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an understanding of basic food needs, toward an understanding of the wide variability of individuals in regards to food allergies, and toward knowledge of how individuals and communities may protect themselves against adulterated or impure foods and unsanitary marketing conditions. This suggests the appropriateness of activities dealing with nutritional experiments, with the study of food fads, with the why of deficiency diseases, or with the importance of Pure Food and Drug Laws and government food inspections.

Exercise, Posture and Rest

Emphasis in this area should be placed upon the realization that some persons need much more exercise than do others of the same age, and that the kind of exercise should be chosen that is helpful in terms of growth, self-confidence, bodily functions, and social life.

Activities related to posture should emphasize the range of variation in posture, so that students may set up acceptable standards for themselves. Similarly, in regard to rest, an analysis might be
made in the variation in the amount of sleep hygienically desirable for different individuals.

Drugs.

Because most of the knowledge concerning the effects of drugs on the human system is usable only by scientists and physicians, it is suggested that only those activities that will assist the student in developing a scientific attitude regarding recommendations of advertisements, of friends, or of other laymen as against those of a physician. Students might investigate critically the opinion of authorities regarding the use of alcohol and tobacco.

Pathogenic Organisms.

Activities in this area might deal with common diseases and infections. Students might be assisted in learning how they can help in controlling diseases.

Allergies.

Students should be aware of allergic responses, and should know that some people are sensitive to only one or two substances, while others are sensitive to a great many. This seems to suggest an activity which would assist the student in finding
out what substances are most commonly productive of allergic symptoms, what these symptoms are, and how modern medicine combats them.

Endocrine Functions.

There appears to be a need for creating an awareness of the effect of the endocrine secretions on growth and on the development of the primary and secondary sexual characteristics. Activities that deal with modern medical techniques in endocrinology and with reliable sources for seeking medical advice in cases disorder seem appropriate.

Heredity.

Information applicable to human health in the area of heredity, such as the mode of inheritance of a few diseases and defects, like diabetes, feeblemindedness, and left-handedness, and the influence of hereditary factors on insanity, tuberculosis, temperament, and length of life could be useful in relieving anxieties of some adolescents.

This analysis of adolescent interests, developmental characteristics, and needs seems to indicate that study
in the following areas of healthful living will meet these needs and interests, and will also contribute toward the achievement of the objectives previously listed.

1. Preventing and Combating Disease
2. Body Concerns
   Diet
   Personal Appearance
   Structure and Function
   Physical Fitness
3. Posture, Fatigue, Rest and Relaxation
4. Accidents and First Aid
5. Inheritance
6. Social Health
7. Community Health

Learning activities in each of these areas will be found in the next chapter.
CHAPTER III

ACTIVITIES

Preventing and Combating Disease.

Many communicable diseases have been eradicated due to scientific discovery. During the latter part of the sixteenth century, yellow fever caused panic among the citizens of Philadelphia, taking a death toll of one-tenth the population in the space of a few months. Today the disease, except for a few isolated areas, has been eradicated. Cholera, diphtheria, typhoid, and many other diseases have a similar history. Yet against certain other communicable diseases control measures have not been so successful, and the hazards of infection are still with us. Hence it is of importance to maintain individual resistance at the highest possible level.

Activities which will provide a greater understanding of the prevention and control of disease.

1) Some students may be interested in developing graphs measuring shrinking death rates or growing life expectancy. Picto-graphs, showing the chief killers (diseases) of infants, of youths five to nineteen years of age and
fifteen to twenty-four years of age, of adults twenty to fifty-nine years of age, and of persons over sixty years old. A final graph might be made summarizing the chief causes of deaths of all ages. Possibly a line graph of bulletin-board size, with each disease represented by a different color line, would lend itself best to this project.

2) Suggest that a few students study the life work of one of the scientists noted for his contribution to disease control. The life of Koch, Pasteur, Lister, or Jenner are among those that would give the students insight into the application of the scientific method to the discovery of disease germs and to methods of their control.

See recording, "Koch the Death Fighter." Appendix.

See film: "Dr. Jenner," Appendix.

3) A study of the development of surgery and anesthesia should afford further appreciation of scientific development and thought. This might well be concluded with a trip to a hospital to observe at first hand the administration of an anesthetic and operative procedure. Students should be well briefed before making such a trip, for the experience provides as great an opportunity for
leaving a few wrong impressions, as it does to correct them. Attention might be called to the sanitary precautions taken and to the use of instruments.

See films: "Anaesthesia," and "Post Operative Care." - Appendix

4) Some students might want to do research on some of the most recent medical developments, such as the sulfa derivatives, penicillin, the treatment of amputees, and techniques in skin-, bone-, and nerve-grafting. Is a war a significant factor in the medical application of new scientific discoveries and techniques? Present findings to the class.

See recording, "Penicillin, Life Saving Drug."

Appendix.

5) Prepare a report on the history of cancer, from earliest records to the present time. Include a discussion of its present status; causes, if known; methods by which it is transmitted; its controls and methods of prevention as now practiced. Mimeographed copies of this report might be made available to each member of the class.

See Recording: "Killing the Killers." Appendix.

6) Prepare several Petri dishes of sterile agar. One
dish should not be used, so that it may be compared with the exposed agar. Many comparisons of bacterial colonies can be made, i.e., touching the finger to the agar in one dish; washing and then touching the finger to the agar in another dish. The dishes should be kept in a warm place for forty-eight hours. Other comparisons might be made by exposing dishes of agar various places, such as in shower rooms, in the lunch room, etc.

See films: "Bacteria" and "Disease, How it is Spread." - Appendix.

7) Select a book on the human body, such as Dr. Logan Clendening's book, and report on the different diseases and ailments of the excretory organs, such as bladder or kidney stones and inflammations of the urinary organs.


8) Visit a health center and ask the laboratory technician to explain the significance of urinalysis, blood tests, etc. Have each student briefly summarize his reactions and conclusions.

9) Some students might wish to investigate the extent to which people patronize quacks or make use of patent medicines. To do so, they might collect newspaper and
magazine advertisements, such as hair restorers' claims or backache cures. After all data has been collected, authoritative sources should be consulted about the merits or dangers resulting from the use of these products. How can the average person receive reliable information regarding health practices? What attitude should be taken toward seeking health advice?

10) Some students might be interested in studying the diseases of the various body systems. One group could present material on respiratory diseases while another could report on the diseases of the reproductive system. Students interested in the diseases of other systems might well envision a plan for sharing their information with the class.

See Recording: "Prevention of Bacterial Respiratory Diseases" - Appendix.


11) Direct the students to readings on body defenses against diseases. Follow your discussion on the reading with the film, "Body Defense Against Diseases." See Appendix.
REFERENCES

PREVENTING AND COMBATTING DISEASE

American Cancer Society, New York City.

An excellent source for free and low cost materials. The pamphlets and books are well illustrated, and appropriate for secondary students. Listed are titles of recent publications.

"Cancer a Challenge to Youth." Pamphlet.
"Cancer and its Cure." Pamphlet
"Doctor Detects Cancer." Youth Looks at Cancer.

An excellent text for secondary students. Contains a bibliography and index. 53 pages. 1944.

"Cancer Facts for Women." Pamphlet
"Cancer of the Breast." Pamphlet
"Who, What, Why, Where, When of Cancer." Pamphlet


Chapters XXIV and XXV. Excellent source for student Reading. Deals with causes and distribution of common diseases, types of immunity and presents recent use of sulfa drugs.


Excellent student source. Useful bibliography and student references.


A report of the achievements of a dozen fighters against human disease and death.
Interestingly told of scientists search of the presence of microbes and their origin.


Excellent pamphlet, well illustrated with charts and graphs.


The relatedness of dizziness to diseases of the ear.


"Germ Killers" **Science Illustrated.** New York City. May, 1947.

Story of research to find new drugs to be used to kill germs.


Book written in laymen's language emphasizing the means of controlling communicable diseases.

**John Hancock Mutual Life Insurance Company.** Boston.

Free pamphlets on: *Home Care of Communicable Disease, The Common Cold, Cancer and others.*

Students may find this book interesting about disease producing germs.


Free teacher copy may be secured. Excellent reference for information about diphtheria, scarlet fever, measles, tetanus, whooping cough, respiratory infections, typhoid fever and tuberculosis. Contains graphs, charts and illustrative drawings.


Excellent student reference. Contains diagrams and pictures. A good chapter on cancer education listing the objects of cancer education.


Dr. Little, Managing Director of the American Society for the Control of cancer presents a clear account of modern medicine against cancer.


Free pamphlets on diabetes, rheumatic fever, respiratory diseases, blood pressure, scarlet fever, chicken pox, small pox, and cancer.

Also publishers of the well known Health Hero Series. Many other free materials may be secured from this source for other areas in the study of healthful living.


The effectiveness of vaccines against bacteria.
National Tuberculosis Association.

Excellent source for free materials. Pamphlets contain charts, graphs, pictures. Especially recommended are the two pamphlets: Tuberculosis from 5 to 20, and How Your Body Fights T.B.


Very good reference book for students. Free. Also write for the teachers guide publication No. 62.


Two articles for advanced students.


A biographical history of medicine including short, very descriptive accounts of the life and work of about four dozen of the great medical men of all time.


Also see Index to Readers Digest. Published twice yearly in the June and December copies.


Very good source for obtaining information about the Federal control program.
The National Foundation for Infantile Paralysis, Inc.
120 Broadway, New York 5, N. Y.

Will send free a neatly arranged loose-leaf pocket notebook containing pamphlets of recent publications, such as:

Infantile Paralysis -- Hopes, Fears, Facts
Polio and People
When your Child Has Infantile Paralysis
Physical Therapy -- A Service and a Cancer
Use of The Respirator in Poliomyelitis
Serving the Community in an Infantile Paralysis
Epidemic.
Poliomyelitis -- 1945. A Source Book for High
School Students.
Facts and Figures about Infantile Paralysis
The Infantile Paralysis Fight at Tuskegee -- 1945

Therapeutic Notes. Detroit: Parke Davis and Company.
July-August, 1947.

Special issue on communicable diseases of childhood.
Excellent photographs of different diseases. Describes immunity for each disease. Copy can best be
secured through school or family physician.

Tickle, Thomas G. Ears that Hear. John Hancock Mutual

Informative pamphlet on the ears, surucites,
adenoids, tonsils, mastoid and hearing aids.

"Vaccine vs Virus." Science Illustrated. New York. June,
1946.

Excellent bulletin board material.

Williams, Jesse Feiring. Personal Hygiene Applied.

Chapter XVI "Prevention of Communicable Diseases."
Page 515. Good source for advanced students.

Yahraes, Herbert. Epilepsy. Public Affairs Committee.
New York: Public Affairs Pamphlet No. 98. Price
ten cents.
Activities related to body concerns.

During World War II, thousands of people in occupied countries and prison camps died of starvation; thousands of others died and are still dying as the result of illness brought on by an undernourished body. The victory gardens, in which many school youth participated, and the all-out effort of our country to make our army the best fed army in the world have helped focus the attention of the high school boy and girl on the importance of the proper diet for healthful living.

1) A review of the various food elements and vitamins and of the particular function of each might well precede scientific experimentation with the effects of certain diets on white rats. A number of students may wish to participate, each deciding on a particular diet for his rat. Several class members may wish to take charge of the rats in the control group, which will receive a balanced diet. At the conclusion of the experiment each student should present his data to the class and certain generalizations be made by the group.

See films: "Vitamine B" and "Vitamine D" in Appendix.
Several of the activities that follow might be undertaken by the various class members once the rat experiment is under way.

2) Some one might like to read Agnes Newton Keith's story of her and her family's imprisonment in a Japanese camp on Borneo, called "Three Came Home." The prisoners' entire existence for over three years was a continuous and desperate struggle for food. What they did in order to fight such deficiency diseases as beriberi, and scurvy, in fact what they did just to stay alive, makes highly interesting reading.

3) Some students might like to make a list of all the food idiosyncrasies found in the class or among their friends. Idiosyncrasy implies an allergy or sensitivity to certain foods, which frequently leads to such chronic diseases as hay fever, asthma, chronic coughing, hives, eczema, headaches, dizziness, stomach and intestinal disturbances, and kidney or bladder troubles. Allergy tests as given by specialists and the treatment for various allergies should be investigated. Is there any evidence that some of these allergies are hereditary? All findings should be presented to the class and conclusions be
4) Make a collection of all the food advertisements that make definite claims of being health foods, or of containing special amounts of vitamins because of irradiation or other processes. Consult the school physician or other reliable authorities, such as text books or your own physician, regarding the claims made by these advertisements. What is the danger in taking these advertisements' claims literally? Present your findings to the class. This report might include information about the revised Pure Food and Drug Act, and how well it protects the public. Does it still have limitations?

5) Check the development of knowledge about deficiency diseases. List the more common ones, their causes, symptoms, cures, and whether or not they are prevalent in certain localities, and whether or not they are still a social problem. What conclusions can be drawn from your findings?

See film: "For Health and Happiness."—Appendix.

6) Students that are interested in the effect of food on weight might record the food eaten in one week and their activities during that time. They might check this record
to see whether it meets the standard set up by experts. Some might wish to go a step farther and compare their week's diet and exercise to that recommended by one of the more reputable reducing parlors in the community. Then consult the school or family physician for advice in regard to reducing diets.

See film: "Food." -- Appendix.

7) Some students may be interested in the process of digestion and how foods are prepared for conversion into new compounds for growth and development. Some may want to study the effect of glandular secretions. The following experiments are suggested as being of interest: a. Testing foods to find out what nutrients they contain; b. Food values and requirements; c. Testing foods to determine the presence of vitamin A; d. Testing foods to determine the presence of Vitamin C; e. Diffusion and osmosis; f. Salivary digestion; g. Gastric digestion; h. Bile and emulsification; i. Effect of particle size upon rate of digestion; j. Effect of heat upon rate of digestion.

8) After a careful analysis of what constitutes a good diet, some students might be interested to know how one can make the best practical selection of foods to meet the requirements of school children. It is suggested that students meet with the lunch-room committee and find out how foods are selected, how the quality is determined, and what are some good buying practices. Does the school offer the same menu to all students, and in what amounts? Ought athletes be given different food than some of the less physically-active students?

9) Practically everyone has at some time or another experienced the effect of "misery" in the solar plexus. Pain indicates a structural or functional disturbance. A directed study for all students in the recognition and treatment of symptoms of such disturbances as the following is suggested: Dyspepsia, nervous indigestion, colitis, constipation, and the effect of the emotions in these disturbances. It is suggested that the causes of digestive disturbances be studied; that the danger in self-medication and in the use of cathartics be pointed out; and that criteria be set up for determining good eating habits. The last might be followed by observations during the lunch period and expression on how well students measure up to
the standards set by the group.

10) Trips could be arranged to a cannery, a slaughterhouse, a baking firm, and an open market. The purpose would be to study the sources of foods and to gain an appreciation of sanitary measures that are taken in the handling of foods. The following places are suggested: The Wonder Bread Bakery on Fourth Street, The University Slaughter House, The Winchester Canning Co., in Canal Winchester (Fr 7-4341), The Columbus Market District, and one of the many dairies or creameries. Pre-planning might include a check-up on city health ordinances and government regulations. Have each class member summarize his conclusions and reactions to the trip in writing.

11) Have the students organize a panel on the life processes. Novikoff's unique book, "From Head to Foot" would provide excellent material and ideas for making this an interesting and informative panel discussion.

12) A directed study about the care and function of the teeth and their effect on health might be concluded with an illustration of the action of an acid on the teeth by putting hydrochloric acid on an egg shell and noting
how rapidly the shell dissolves.


13) Boys are interested in developing big muscles; girls are conscious of their figures. The writers of advertising copy are attempting to convince people that if they will use certain drug preparations, or eat a particular food, the perfect figure will follow. The following suggests a procedure in gathering meaningful data, so that the students may intelligently decide what course of action to take regarding their own weight problems: a) Find out if there is a relationship between weight and mortality. b) List the factors which influence height and weight. c) Have the students consider a number of questions they would like to ask the school physician and have him discuss these with the group. d) Investigate various kinds of obesity cures, and check the authority prescribing these cures. Report to the class what you consider intelligent practice regarding weight control.

14) Secure live frogs for dissection. Chloroform and kill them for an examination of the following systems: digestive, excretory, circulatory, and respiratory. Secure models of the human digestive, excretory, circulatory, and
respiratory systems and list resemblances observed.


15) Some students might want to examine and dissect some of the organs that control the body processes. At the Ohio State University Slaughter House procure a heart, lung, kidney, stomach, and liver from a beef, sheep, or pig. The students might write an analysis of their observations, giving consideration to the organs' adaptability to functions and suggesting health habits that will assist the proper functioning of these organs.

16) Use the microscope and examine a drop of blood placed on a glass slide. Procure a live frog and place the web of the foot under the microscope and examine the flow of blood through the vessels. Show the movies on "Circulation," and "Blood" in the Appendix.

17) Some students might wish to follow up activity fourteen, where the circulatory systems of man and frog have been compared, by demonstrating pressure points to the class. Others might make a report on the causes of anemia, its symptoms, and treatment, or study recent developments in giving blood transfusions.

18) A member of the class might enjoy planning and
giving the following demonstration: Chloroform a frog and remove the long muscle from the rear leg. Attach the muscle to the apparatus as indicated in Miller and Blaydes book, "Methods and Materials for Teaching Biological Sciences," and apply stimuli from the cell batteries. Attention should be given to the contraction and relaxing of the muscle and to the time lapse between the application of the stimulus and the muscle's reaction to it.

19) A student might like to demonstrate the mechanics of respiration to the class with the aid of a bell jar, a forked tube, toy balloons, a rubber sheet, and string. After the demonstration class members might explain orally or in writing what body organs the different parts of the model represent, and how the experiment may be compared to breathing.


20) Have individual members choose one of the following four units for study regarding personal appearance, hygiene, and comfort.

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1. Care of skin
   a. Cause of skin disorders — acne, blackheads, oily skin, boils, moles, birthmarks, athlete's foot.
   b. Treatment
   c. Artificial products applied to the skin. — Cosmetics, depilatories, deodorants, nail polish. Dangers of the use of artificial products.

2. Care of scalp and hair
   a. Cause of scalp disorders — falling hair, dandruff, baldness.
   b. Overcoming scalp disorders.
   c. Artificial products — hair oils, etc.

3. Cleanliness of body.
   a. Types and of needs for cleanliness — body odors, and breath, nose and ear hygiene, sex hygiene.
   b. Overcoming undesirable odors and other forms of undesirable personal appearances.
   c. Use of artificial products.

4. Clothing
   a. For comfort — type of clothing for summer and winter.
   b. For safety and protection.
   c. Dangers of certain types — rubber garments, tight clothing, allergies, high heels, etc.
REFERENCES

BODY CONCERNS


For a discussion and evaluation of products sold for the care of the skin and its disorders see Chapter 32.


How to proceed when you have an abdominal pain.


Scientific progress that has been made in blood transfusions and in blood typing.


See Chapters III and VIII about body functions.


Up-to-date, comprehensive, and readable account of the body.


Excellent information on the cause and treatment of high blood pressure.


An excellent book covering all aspects of information needed by the average individual to maintain his health. Authorative, non-technical and well written.


A good article on common allergies and the antidotes for these allergies.

*The Blood is the Life.*

Frolic acid the new blood-building vitamin.


Includes a valuable discussion on the relation of diet to proper normal elimination.


Excellent for this unit. Readable, thorough with remarkable illustrations.


A story of three people interned for three and one half years by the Japanese Army. Significant in showing the physical and mental effects due to an improper diet.

Many fine health pamphlets can be secured free by writing to the above address.


Excellent article on laboratory technique in examining blood.


Written in the language of youth about all the body processes. Interestingly illustrated.


How nerves are blocked with drugs. Also see *Life* November 24, 1947. "Painless Needle." Good bulletin board materials.


The Wetzel Grid Chart explained and what use can be made of the chart. Shows the relationship of good health to normal growth.


Also see *Hygeia,* September, 1947.

Excellent material on the function of the lymphatic system.


What can be determined from a blood count.


The RH factor explained.


Excellent bulletin board material.


Information on the sources of vitamins.

The following reprints may be obtained from the Bureau of Health Information, American Medical Association, Chicago. Prices range from five to twenty-five cents.


"Cosmetics and Allied Preparations."

Activities dealing with posture, fatigue, rest, and relaxation.

Rapid and uneven growth during adolescence may produce fatigue or may be accompanied by self-consciousness and an inclination to slump. Therefore, problems dealing with posture, fatigue, and rest are pertinent at this period of development, both from a standpoint of interest and of need. Consideration should be given to the rest requirements of adolescence, to the relation between unhealthy posture and disposition, and to the effect of irregular rest on behavior, and to the difference between mental and physical tiredness. These considerations are suggestive of the kind of activities that might be provided to meet student needs and interests.

1) The class might like to invite a specialist from one of the muscle building -- reducing agencies in the city such as the Roger Eells Studio, Columbus, Ohio. The intention would be to give the students an opportunity to critically examine the value of such agencies to see how they fit in with the purposes of a recreation or physical education program.

2) Some students may want to study personal needs
for rest and determine why some people require more rest than others. Just what, if any, relation exists between disposition and fatigue? Does any evidence support the idea that adolescents need more rest than adults? Some students will want to know why the morning is half over before they "wake up." Have the students present their findings to the class.

3) The following studies might be suggested to students wanting to explore the value of exercise: a) Check references for information regarding the effect of exercise upon the body; b) Recommend factors that should be taken into account regarding the kind of exercise, the amount of exercise, and the time to exercise; c) Explain what is meant by physiological and psychological conditioning; d) ask your physical education teacher why certain physical activities fit certain age levels, and the reason for costumes and showers; e) Find out more about the causes for sudden deaths after people have been exercising or have taken part in sports; perhaps someone can clear up the misused term "athletic heart."

4) It might be suggested that a committee study the relationship between appropriate exercise and the proper functioning of the body processes. Should one choose only those physical activities in which one is interested? How much does a person benefit in physical and mental well being as the result of compulsory physical activities such as calisthenics? What are some of the social attitudes that can be learned from group activities? These and similar questions might be taken up in a round-table discussion with the class and the health and physical education teacher.

5) Some of the boys may be interested in demonstrating the procedure used in the Carlson Fatigue Test or the Navy Step Test, and in explaining the purposes of these tests. The boys may wish to go into the causes of fatigue, and determine whether these are only physical in nature. Several students might make a careful record of the various activities they have engaged in during a definite period of time and note those that seemed to cause fatigue. These data should be examined critically to see if the same activity caused fatigue at one time and
not at another, and if so, what are the reasons?

6) Check references to learn what is considered good posture for students in your age level. Present a report to the class on how one can improve his posture; what habits tend to make for good posture and why good posture is necessary. Does posture reveal anything to the observer regarding the person's personality? Do games have any value in developing good posture, do calesthenics? What exercises are helpful in developing good posture? Some of the girls might like to illustrate these exercises to the class. (The Denver Study showed very high interest in posture exercises among girls.)

7) Have someone scan newspapers and magazines for advertisements of sleep producing and pain control drugs. Trace the reliability of the claims made for these drugs. Suggest an intelligent procedure to be taken by sufferers of insomnia and chronic pain.

8) If a skeleton is not available, the school physician can likely secure one or make it possible so that one can be examined. Questions dealing with dislocations and deformities would possibly be of interest to the group.

REFERENCES

POSTURE, FATIGUE, REST, RELAXATION


See Chapter VIII, "Your Mental Health." Excellent information on the importance of controlling the nervous system.


See Chapter IX. Readable and informative material for study in this area.


Laird, B. A. and Muller, C. G. *Sleep Why We Need It and How We Get It*. New York: John Day Co., 1930.


An article on increased frustrations. A new kind of emotional disorder caused by the wave of publicity given psychiatry.


Pictures illustrating the emotional causes of fatigue. Good bulletin board material.


Story of the effects of being systematically starved for a period of six months. Review of the experiment carried on at the University of Minnesota with conscientious objector volunteers.


(See State or Local Association.)
Accidents and their prevention.

Accidents are the leading cause of death in the United States for young people between the ages of three and twenty-two. During 1938, 13,500 children under fifteen years of age lost their lives through accidents and another 50,000 were permanently disabled. Temporary disabilities produced absences from school that were the equivalent of the continuous absence of nearly 11,000 children.¹

These statistics paint a grim picture and surely indicate a need for directed living. Our attitude today is no longer the complacent one that "accidents will happen." Rather it is knowing that they do not just "happen," but that they have causes and that these causes can be controlled.

Our modern world is far more dangerous than the world of the past. Steam, gas, electricity, explosives, trains, planes, and automobiles have brought with them hazards which, if we do not control them, will control us. Therefore, accidents as a preventable cause of death and disability demand top consideration among our concerns for healthful living.

It has been relatively easy to introduce safety education into elementary schools, for a young child's outlook

on life is simple and lends itself well to the development of correct attitudes and practices regarding safety. In the high school the situation is entirely different. Teenagers are in a particularly adventurous age and have great admiration for daring and speed, and much disdain for the cautious "sissy," and this makes safety education a difficult undertaking.

Little progress was made until safety education was directed to a problem that was meaningful in the life experience of high school students, namely, the safe driving of cars. Instruction in this subject is important, not merely because drivers at younger age levels have the largest proportion of accidents of any age group up to seventy, but because it provides a training school for driving in general. A survey by the National Education Association and the American Medical Association indicates that the response from the high schools to this approach was immediate and overwhelming. It led, in a considerable number of cases, to the introduction of safety training into the high school on a sufficiently broad basis to make it serve as an all-round preparation for life.

Keeping in mind then the venturesome nature and
sophistication of the high school student, every effort should be made to provide realistic and meaningful experiences in accident prevention, so that recklessness will be replaced by more thoughtful concern for the safety of others.

Activities concerned with the control and prevention of accidents.

1) It is suggested that a directed study of the four main groups of accidents be undertaken as an initiatory procedure. The class may wish to divide itself into four committees to study the total picture of: a) accidents in the home; b) accidents in industry; c) automobile accidents; d) accidents due to other causes. Each committee's report to the class should clarify the total picture of the accident problem and include suggestions as to how safer living can be made possible.

2) Some interested students, or some of the more artistic ones, might enjoy making bulletin-board size pictographs illustrating the increase or decrease of the death rate according to the various types of accidents. Life insurance companies are generally agreeable in providing statistical material for the writing.
3) The class might wish to invite an officer of the local State Patrol to speak on auto accidents and the problems of safe motor travel. This might be worked out in the form of a panel discussion, with various members of the class taking part. It might include an examination of the rules governing pedestrians and bicyclists, as well as those applying to drivers. The implications of the common practice among high school boys of hitch-hiking in heavy city traffic might well be included in the discussion. In conclusion each student might be asked for a written statement regarding the part he or she plays in the total picture of traffic accident prevention.

See films: "Driving Habits," and "Teach Them to Drive." -- Appendix.

4) Some students might like to prepare a report to the class regarding swimming accidents. This might include a list of common-sense rules to be followed, of causes for drownings, and of the statistical picture regarding deaths from drowning. The class might contribute observations from own experiences as to common swimming practices among teen-agers and evaluate them in the light of the data presented in the report.
5) Some one might wish to investigate the total picture in regard to accidents and deaths from fire. The unusual number of hotel fires during the last year have resulted in a goodly amount of literature about the subject. What are the statistics regarding deaths from fire and what are some of the safety rules every one should know?

6) Ask the local fire department to send a representative to discuss fire hazards and safety rules with the class. Perhaps a trip to the nearest fire station could be arranged. What first aid procedures are used to aid some one overcome by smoke, some one with first degree burns, with second degree burns, etc. Perhaps some of these procedures could be demonstrated. What duties other than the fighting of fires are firemen called upon to perform?

7) Students who have had practical experience in first aid, or others who wish to gain some experience, might plan a demonstration of first aid procedures. The gymnasium might be used for this activity. Students with experience might be made responsible in assisting small groups. Demonstrations might first be given by the leader,
followed by teaching individual group members the procedure
demonstrated. Suggested demonstrations are first aid
treatment for: shock, burns, asphyxia, dislocations,
fractures, wounds, and external bleeding.

See films: "First Aid," "Emergency Splinting,"
"Minor Injuries," and "Unconsciousness."

-- Appendix.

8) Some member of the class might want to investiga-
gate the accident picture in air travel and compare
statistics on fatalities with those of other modes of
travel, such as trains, busses, and automobiles. Have
passenger-plane crashes been on the increase since the end
of the war? If so, to what causes is this attributed?
How can air travel be made safer in the future? How does
the Columbus airport and its facilities fit into this
picture?

9) Have some member of the class read Chapter XIV
of Schlink's, *Eat, Drink and Be Warry* and report on how
serious the food problem of food contamination by lead
and arsenic poisons really is. See Reference.

10) Suggest that a committee read the book, "Sports-
manlike Driving,\textsuperscript{2} and organize a class discussion around the material presented in the book. From the discussion the students may be interested in securing from the Ohio State Department of Education the film, "Teach Them to Drive." This is a sound film and a narrator accompanies the film if requested.

11) Clip from papers all articles pertaining to accidents for one month. Classify them. Examine materials carefully, and from the facts presented state important conclusions.

12) Have a committee make a careful study of the community to discover the safety measures which are in existence. A chart might be made naming the activity such as: Factory, and opposite the activity list the safety measures.

\textsuperscript{2} Consult American Automobile Association for a copy.
REFERENCES

ACCIDENTS


Chapter XXVI, "The Care of Injuries." Excellent student reference.


See Chapter X for readable material on how to avoid and treat injuries.


An article on attitudes concerning crippled people.


See Chapter II for the classification of accidents.


An excellent reference on most phases of driver education. Unit IV on "How May Society Improve Traffic Conditions," is especially good in its emphasis of personal responsibility to help educate others concerning traffic safety.

Films

See Visual Aids.


An article giving excellent first aid suggestions.

Informative and well illustrated. Copy may be obtained from the local Red Cross Chapter.


A reference book on safe driving.

Johnson and Johnson. New Brunswick, N. Y.

Write for charts illustrating first aid principles. Cost 10 cents.

Kallet, Arthur M. and Schlink, F. J. 100,000,000 Guinea Pigs. New York: The Vanguard Press, 1933.

A discussion exposing poisons found in foods.


An account of the poisons in the food we eat.


A textbook dedicated for the instruction of high school students in driving. Excellent data on reaction time of drivers. This book is used by many schools providing courses in automobile driving.


"The Driver"

"Sound Driving Practices."

"Driver and Pedestrian Responsibilities."

"How to Drive."

"Societies Responsibilities."

Excellent reference designed for schools as a textbook or a work of reference.

*We Drivers.* Detroit, Michigan: General Motors Corporation. 1945. Free.

A series of brief discussions in driving, dedicated to the safety, comfort and pleasure of the motoring public.
Activities related to inheritance.

1) Give a pre-test such as the following to serve as an introduction to a unit of study in genetics. The "true and false" statements might be repeated later in the study, to aid in the process of evaluation.

a) A blue-eyed child may be born to two brown-eyed parents.

b) A wise farmer will sell his finest and largest ears of corn which bring the best market price, and save the poor ears for seed.

c) Bad habits may be inherited.

d) Environment produces variations, but heredity does not.

e) Cancer is inherited.

f) A child may be born with tuberculosis, inherited from a tubercular parent.

g) Acquired injuries are inherited.

h) Expectant mothers can mark their babies as the result of fright or other unusual experiences.

i) It is always risky to marry a cousin.

j) All criminals should be sterilized.
k) All insanity is inherited.

Students may find an area of interest among these statements and may wish to select one of them for individual or group study.

2) Have various members of the class report on the lives and work of Mendel, Weismann, Darwin, Burbank, Galton, Thomas Hunt Morgan.

3) Direct a study on what is inherited and how. Is complexion inherited? Is intelligence inherited? Is stature inherited? Is the color of your eyes inherited? Why do children in the same family differ in characteristics? Do inherited traits always show? Are defects inherited; are diseases? What don't we inherit? What role does environment play in influencing our behavior?

The class might select committees to study the different aspects of heredity. For instance, one committee might select to study the method of inheritance—germplasm, chromosomes, genes. Another committee might chose body form and structure, color of hair, eyes, etc. A third could study the inheritance of mentality, including facts about feeble-mindedness and genius, as well as the role heredity plays in regard to sick minds. A
fourth committee could study heredity in relation to disease. Any additional committees could be selected, according to the number of topics selected for study. The book "You and Heredity" by Amram Scheinfeld would be an excellent reference to use for this activity. It is written in a highly interesting, yet simple, style and from a layman's point of view. No particular part of the book is suggested, as students can easily follow the chapter index for topic assignment.

See film: "Heredity." — Appendix.

4) The following experiment is suggested to illustrate the principle of simple Mendelian inheritance (3:1 ratio) and of the laws of probability.

Dye 200 lima beans blue, 300 brown (to represent graphically the factor for brown and blue eyes). Make two piles, each containing 100 beans of each color. Mix thoroughly. Let a blindfolded student draw two beans, one from each pile. Keep record of sequence of 100 draws. Demonstrate three to one ratio. Discuss reliability of basing ratios on a few cases. Is every fourth draw always two blue beans? In families of fair children, what combinations of blue and brown are possible? etc.¹

¹Diederich, Gertrude Wylie. A Source Unit in Genetics. Teachers College, Columbia University, New York City.
5) The class might like to test its members for color blindness (sex linkage). This is especially interesting in large mixed classes. Color-blind test charts may often be borrowed; Ishihara's "Test for Color-blindness" may be obtained from C. H. Stoelting Co., 424 N. Roman Avenue, Chicago, Illinois (about $7.00). In cases where color-blindness is found or reported in other members of families, collect family histories.²

6) To study the effects of both heredity and training read chapters thirty-one and thirty-two in Scheinfeld's "You and Heredity." This is a genetic study about musical talent. Various class members might enjoy making charts of family trees to show evidence of ability in music or other lines of talent.

7) Take a field trip to the Ohio State University Stock Farm to look at pure-bred stock. How were they produced, and how old is their pedigree? What sort of records are kept; what is included in them. What are the points by which they are judged by fanciers?

8) Invite a social worker to speak to the class on

²Ibid.
the problems of providing a better environment for human beings. Inform her of your study and carefully check any data she might present concerning inheritance.

9) Arrange for a conducted tour through Orient (State Institution for the Feeble-minded). It might be well to have the class do some reading about heredity and feeble-mindedness. Chapters XXXIX and XXX in Scheinfeld's, You and Heredity, might be suggested. If preferred, this field trip might be an activity when studying community health. Pre-planning should emphasize such things as sanitation, physical facilities, professional staff, and adequacy of financial support.

See film, "Mental Defectives." — Appendix.

10) Arrange for two or three students to study and prepare a report to the class on the "Races of Man" as presented in the Public Affairs Pamphlet. See reference.

11) Provide an opportunity for the students to select and develop one of the three topics: 1) History of Heredity, 2) How do we inherit? 3) What is meant by cultural inheritance? Ask the students to read the story of the Kallikaks or the Jukes. Following this study an interesting round table discussion might be arranged,
soliciting the reactions of the class.

12) Have some of the camera enthusiasts among the class members take indoor or outdoor shots to illustrate similarities and variations due in most part to hereditary factors. Pictures of animal families, of the students own families, of twins, or of a group of boys or girls the same age and lined up according to height are good material for illustration. The results of breeding experiments in mice or guinea pigs, or of albino corn seedlings, can best be recorded with a camera and the prints mounted with suitable captions.

13) Introduce Novikoff's Climbing Our Family Tree to the class. This book is a first-rate introduction to evolution, with gay illustrations and a fresh, vivid approach. Form a committee to read the book and to present its interesting material to the group.
REFERENCES

HEREDITY


See Chapter XXXI. An excellent reference for activity No. 11.


Exposes the inheritance of traits in people, i.e., intelligence, character, etc., as a basis for developing an attitude toward the races of mankind. Very well illustrated with graphs and sketches.


Readable account of the main principles of eugenics, and their application to social problems. Some four hundred often asked questions about genetics and heredity answered.


Excellent material on practically any phase of heredity. Contains charts and illustrations.


Readable discussion on mental illness.

'Multiple Human Births.' Hygeia. Chicago, October, 1946.


Excellent book -- readable and interestingly written.


See pages 459-513 and pp. 1318-1389.

Yahordes, Herbert. *Alcoholism is a Disease*. Public Affairs No. 118. New York: Public Affairs Committee.

An account of how alcohol affects heredity.
See page 15.
Social health.

This area of health includes problems relating to sex education, boy-girl relationships, preparation for parenthood, and social diseases. Youth interests here emanate largely from developmental changes occurring at pubescence and during adolescence.

Schools that begin in the lowest grades seem to find it much easier to deal with instruction about sex for boys and girls are then less self-conscious. In many schools children have an opportunity to care for rabbits, guinea pigs, mice, and other animals right in the classroom. In addition to learning about the care and feeding of animals, they casually and as a matter of course learn the facts about mating, birth, care of the young, and sex differences in behavior and structure. They are helped to accept sex in a wholesome way before neighborhood smut and confused attitudes of parents entangle their own sex emotions. It is not only difficult, but often futile, to start sex instruction at adolescence, when boys and girls are on the verge of manhood and womanhood, for by that time many of them are already conditioned to secrecy or to reckless defiance of convention.
It is well to remember that: "Sex is not a subject—
like history or arithmetic. It is an integral part of
life that bears upon everything we do. And the place that
sex comes to take in the life of the individual and of the
community is influenced by almost everything that happens
in a living community."¹

Boys and girls need guidance and counsel as much as
they need technical information. They need sympathetic
help in understanding themselves, in developing self-
assurance and confidence when dealing with other people.
They should be given help in interpreting the personal and
social life that faces them. This means that all the
areas -- all the school experiences -- bear upon sex
education.

This same thought was expressed by specialists on
venereal disease control and on social hygiene education
in conferences late in 1944 when they reached agreement on
the following generalizations that are of significance for
education:

¹Gruenberg, Benjamin C. How Can We Teach About Sex?
Public Affairs Pamphlet No. 122. p. 17.
1. Sex is a constant factor in individual behavior and development and in human relationships. A person's attitudes and ideals with respect to sex are significant for society and the race as well as for his own well-being. Positive educational effort is necessary to promote the individual's fulfillment both in personal living and in family and social relationships.

2. The child's attitudes, whether to his body and its functions or toward other people, normally begin to develop in the home. Since very many homes cannot adequately direct the informal sex-character education of their children, it is necessary to develop deliberate education in human relations, personal adjustment, and social well-being, not only through information and instruction, but through a variety of guided social experience.

3. To the developing boy or girl, the meaning of sex is constantly changing; and any intended education must fit the individual's changing needs. Even the needed information cannot be imparted in a series of special lessons, each completed once and for all. The education which is to help the individual attain maturity and to accept the responsibilities of manhood or womanhood must continue considerably beyond school years and it must include vastly more than the school can give.²

One of the big problems facing education in the area of social health is the fact that our laws and religions are those of a simple, chaste, monogamous society, while our amusements are those of a gay and amoral one, and our

²Ibid., p. 19.
sexual habits have become a world-wide scandal.\textsuperscript{3} Motion pictures, radio, tabloids, pulp magazines, and the endless parade of advertisements have built up a fetish of sex in every area of living. Sex is advertised as the most delightful of all recreations in almost every medium we have. Chastity is the product of a different pattern of thinking than the one we have evolved in our materialistic society. In addition our new-found controls over speed and power, with a resultant restlessness and freedom to seek for far-away excitement, have produced further changes in our sex habits. The war, too, has had its effect, and young people of today are well aware of it.

If the school is to help boys and girls evolve a healthy and functional philosophy in their attitudes and ideals with respect to sex, it will have to concern itself with the allure and educational effectiveness of the above mentioned media of modern living.

It is intended that the activities suggested here meet some of the social health needs of developing boys and girls in a changing society, whose sex mores seem to

be at variance with its monogamous laws, religions, and ideals.

Activities relating to social health.

1) Study the development of the chicken egg from the time it is fertilized until it hatches. Place two dozen eggs in an incubator at 103° temperature. Open one egg a day for the first five days, and then one every other day. Make drawings and charts, showing the development of the heart, blood vessels, body, etc., and compare them to charts showing the embryological stages of the human body.

2) Suggest to the students that they examine the references carefully with the idea of selecting a phase of social health they would be particularly interested in studying. The following problems might be suggested to assist them in making their choice.

a) What can we do to develop a healthy attitude toward sex conduct, with particular emphasis on the period between puberty and marriage?

b) Is it true that social diseases are more prevalent among the Negroes than among whites?

c) Birth rates have been going down; but the rate of illegitimate births has been rising.
d) What might be the effect of smaller families on our future society?

e) Structure of reproductive organs; study of sperm and egg characteristics.

3) Arrange for a discussion of boy-girl relationships in school and during social affairs outside of school. Provide an opportunity for an evaluation of boy-girl relationships following a school social event.

4) Prepare with the class a chart listing a few desirable personality traits. The students might be interested in having their classmates evaluate them in view of these traits listed on the chart. The evaluation should be mimeographed to avoid any friction that might arise from identifying the handwriting of the person making the comment. See Graph No. 6, "Interests in Personality Development."

5) Prepare a questionnaire to find out what kind of social activities boys and girls are interested in. Discuss the findings with the class, and let both boys and girls set up standards for what they consider acceptable behavior while taking part in these activities.

6) While studying, "How boys and girls change in the
process of growing up" suggest that a report be made of the Wetzel Grid Test. Ask the physical education teacher and the school physician for assistance in interpreting the test.

7) Secure models or sketches from models of the various stages during embryonic development. Follow the study of embryonic development with a showing of "Miracle of Birth," 2 x 2 slides listed under Visual Aids.

8) Organize study groups on the following problems of mental health:

a) Is there any relationship between a person's physical and mental health?

b) What are the symptoms of poor mental health? What situations are most likely to result in mental distress?

c) How can we control potential harmful effects of fear and anger?

d) What is behavior and how do we arrive at what is socially accepted behavior? The influence of endocrine glands in behavior? See film, "Endocrine Glands." -- Appendix.

e) What is the effect of narcotics on mental health?
Consult the office of the State Department of Mental Health and invite a member to discuss mental health problems with the group.

9) For interesting readable information on human reproduction have the students read Novikoff's book "From Head to Foot," pp. 62-80. The reading material is excellently illustrated and many of these illustrations could be reproduced in the form of posters.

10) A chart on reproduction, similar to the film strip mentioned in activity seven, can be secured from the G. H. Michael Company, Cleveland, Ohio. This chart is clearly illustrated and annotated showing all the stages of embryonic development and child birth. It is highly recommended for use in activities dealing with human reproduction. (Estimated price $7.00).

11) Have the class choose a current, popular romantic novel or movie of the type that many students would read or see -- as the case may be -- of their own accord. Hold a discussion on the psychology of the novel's or movie's appeal to the general public. To what elements in human nature is this appeal directed? What sort of attitudes
does it develop? Are these the sort of attitudes that make for a healthy and functional philosophy in adolescent thinking with regard to sex?

12) A group of students might make a survey of the types of magazines high school students prefer for free reading. These statistics would lend themselves well to the making of a large pictograph for class use. An evaluation of the various publications, similar to the one suggested in activity eleven, should follow. Likewise, a survey of radio programs with appeal to high school students might be made.
REFERENCES

SOCIAL HEALTH


Excellent pamphlet on what public agencies are doing to control venereal disease. Also suggests what social responsibility must be assumed by local citizens to control the problem of prostitution.


Excellent pictures of model showing just how a breech baby is born. Very good bulletin board material.


Readable account of human reproduction. Intended for high school level.

*---------*  


Excellent teacher and student reference. Informative and readable. Written for laymen.


The author writes about his years of experience in counselling and helping troubled personalities. Excellent, readable book on mental hygiene.


An article on incidental, integrated and direct teaching on sex at various stages of the child development.

Gruenberg, Benjamin C. *How Can We Teach About Sex?* Public Affairs Pamphlet No. 122. New York: Public Affairs Committee.

Advanced students interested in the problem of sex instruction may find this pamphlet interesting. Emphasis is placed on the responsibilities of all areas to teach sex.


Excellent and readable.


Novikoff, Alex. *From Head to Foot.* New York: International Publishing Co. 1946.

An expert, readable discussion of the psychology of human personality and its relation to mental illness.

Pamphlet presenting sex information appropriate for high school boys. What attitudes should be taken.


Appropriate for slow readers. Elementary level presentation.


Chapter XV. Teacher reference.
Activities relating to community health.

1) Students might set up criteria by which to decide what wholesome recreation is; and with these criteria in mind, make a survey of the community to list organizations that provide recreation which meets their standards. Committees might be formed to study the various sections—needs, how met, etc. The office of the recreational director might be consulted regarding organization, finances, and personnel. Are there inequalities in providing recreational opportunities for all people? Suggest that students read: "Students Make a Recreational Survey," Educational Method, March, 1939.

2) Set up a questionnaire which will provide data on the number of students using the recreational facilities available in the school. Discuss activities that rate high in student participation and those that rate low. What seem to be the causes for each? Have some of the activities outgrown their usefulness? Is there a need for activities not now included in those the school offers? If so, how might such activities best be made available?

3) Make a survey of the time spent by the class on commercial and non-commercial recreation. Include the
cost of both types of activities. What needs does each type of activity meet? Do all activities meet the criteria for wholesome recreation? Are they developing recreational interests that can continue into adulthood, or are they limited to adolescence?


4) Study the meaning of the following terms, and add to the list, if possible. Determine the scope and limitations of specialization. - Optician, optometrist, oculist, chiropractor, osteopath, chiropodist, pediatrician, gynecologist, obstetrician, surgeon, "general practitioner," psychiatrist, phrenologist, athletic trainer, neurologist, pathologist, etc. See reference listed under McCoy.

5) It might be possible to have a chiropractor, an osteopath, and the school doctor speak to the class regarding their respective professions. After each talk, students might compile data for discussion, such as: the training required, how a license is obtained, and the function of each. These facts should be written on the board or in some other way be made available to all students. The group should come to a conclusion as to what
it considers to be reliable data, and what attitude the individual should take when seeking health advice.

6) An extensive study of health service is suggested for the whole class. Students should select one of the following four areas for research: a) school health service, b) community health service, c) state health service, d) federal health service. What is the contribution of each to the health of the individual? How are they supported? How administered? What are the weaknesses and strengths? Is there a missing link in health service? Is there any overlapping in the functions of community, state, and federal agencies? What are the present day trends?

See films: "City's Health, Defending the" "Health Service, Public." — Appendix.

7) Have the students make a survey of all the health agencies in the community. Following the survey it might be well to discuss the scope or functions of each existing agency. Does Columbus have a Community Health Council to bring together a closer relationship between these agencies?

8) It is suggested that students examine the programs
now being proposed to provide better medical care for all peoples. Some students might wish to study the program of health insurance as proposed by Bernard Barach, while others may study the program proposed by the American Medical Association. The students can decide how they can best present to the group the important phases of these respective programs. Discussion should follow the presentation of these programs to the extent that the students have developed and can defend a point of view regarding a greater equality in medical care.

9) Suggest that a student secure a copy of the magazine section of the Columbus Citizen of December 28, 1947. Set up posters from the section "A Report to Columbus." With each poster list questions to be answered by the class to obtain a cross section of the attitude of the class regarding the health implications of the posters. It is quite possible that the answers to the questions will lead to further study regarding how these health improvements may be realized.

10) Show the film, "City Water Supply," (See Appendix). Then have students gather information about methods of purifying water. What method does Columbus use? What
are water-borne diseases, and how can we safeguard ourselves against them?

11) Many of the students might be interested in finding out their blood type. Make arrangements with the school doctor to type all interested students and have them determine their own type. It may be necessary to secure the parents' permission for this activity. A similar experience might be provided in giving the Shick Test and the Patch Tuberculin Test. See film: "Blood" — Appendix.

12) Have a student set up and defend criteria for selecting a family physician. It might be interesting to compare the criteria presented with the opinions expressed by class members. Especially note if the students are unprejudiced in defending their present family physician. See reference listed under Steele.

13) The following questions regarding health and the Atomic bomb might be considered for study:

Why were salves and ointments used on the skins of animals at Bikini Lagoon?

Could the same principle be used for humans in case of Atomic war?
Are there medical properties to counter the effect of the bomb on humans?

Can atomic energy be used to cure certain diseases?

Why did the men at Bikini wear special glasses?

How harmful is the light reaction of the explosion and how long does it last?¹

REFERENCES

COMMUNITY HEALTH


Excellent story of the origin of malaria and how it spreads. Illustrated with color photography. Good bulletin board material.


Survey lasted over a year. Bacteriological analysis made. Recommended for advanced students. A good review of how to make culture media.


Symptoms listed and precautions which should be taken by all diabetics.


Informative statement about the state of the nation's health.


Excellent publications on household pests and insecticides. Price 5 cents.

Readable account of how Henry Kaiser and California doctors attempted to bring medical care within the reach of all people. Students interested in the attitude of medical men toward socialized medicine will find it expressed pointedly in this book.


Emphasizes government control of medicine.


Story of their fight against maleria and how DDT is being used.


This is an exposition of fake theories and notions in the field of health and popular medicine.


A summarization of known facts of the relationship between economics and health in America, and proposals for achieving better health through cooperative means.


Significant highlights of the growth of medicine shown in a series of photographs and drawings.

Pictures of heart surgery. Excellent bulletin board material and might assist in developing a wholesome mental attitude toward surgery.


Autobiographical account of a successful doctor of the midwest. The changes in medical practice from earlier days to the present and the experiences related by a country doctor.

**Hospitalization.** Write to local insurance companies for policies concerning hospital expenses.

"How Good is DDT." *Readers Digest*. September, 1946.
Also see *Life* Magazine, July 8, 1946.

**Immunization.** Lederle Laboratories Division, American Cyanimid Company. New York.

Very good source for bulletin board materials. Free.

"Improving the Health Program of the Ohio State University School." *Bulletin*, Bureau of Educational Research, Ohio State University, September 15, 1943. For teachers.


An article on the care of the mentally ill. Appropriate only for advanced students.


An article on symptoms of heart trouble that should be of concern and those that are false. Contrast emotional and psychological with organic heart troubles. Good.

An account of the nostrums sold to the American people and some of their harmful effects.


An article which can develop a better attitude toward nursing as a profession. *Tertox News* can be obtained free by teachers.

McCoy, L. L. "Whom Shall I Consult -- Optician, Optometrist, Oculist, Ophthalmologist, or Ophthalmic Physician?" *Chicago: American Medical Association.* 5 cents.


An article on what we can do about psychiatric cases and a forecast for the future.


A book presenting the viewpoint of many authorities on socialized medicine.

Recreation. 315 Fourth Ave., New York. 300 pages.

Excellent source for free reading. Contains many timely articles on community recreation. Suggests new books on recreation and lists sources for films appropriate for secondary students.

Good. Lists criteria for consideration in selecting your doctor.

"That Annual Check-Up." Ohio State Medical Association. Columbus, Ohio, 1947. Similar bulletins are available free. 8 pages.

Appropriate for secondary school level students. The "Why" of physical exams given.


Excellent with graphs and charts appropriate for secondary students. Symptoms and care of the mentally ill given.


"Your Heart." *Science Illustrated.* September, 1946.

Good bulletin board material. Relates functions and diseases of the heart. Also see *Hygeia,* February 1947, "Your Heart," an Editorial.
CHAPTER IV

EVALUATION

Evaluation is a continuous process to be used at the beginning of the unit, throughout the unit, and at the end of the unit. At no time does it put a lid of finality on the educative process, but rather points a redirection for further experiences, and how future activities may be made more meaningful.¹

The techniques employed should be those that will best determine the progress the students are making toward the goals for which the teachers and pupils are working. It is a matter of mutual concern of the teacher and pupils, and the selection of the evaluating technique should be a cooperative process, providing planning and developing experiences. Techniques that are teacher-dominated may lead to unscientific evaluation procedures, where the teacher's own point of view is injected to the extent of hampering an opportunity for reflective thinking. Since

¹Harold Alberty, "Science: Servant or Master?" A Resource Unit for Teachers, Prepared by a Workshop Group in Curriculum Development. College of Education. The Ohio State University, 1946. p. 87.
evaluation is a continuous process, it plays an important part in teacher-pupil planning of learning experiences; i.e., trips, demonstrations, laboratory experiments, discussions, movies, projects, debates, and etc.

Not only is evaluation to be thought of as a technique to measure student progress, but as an instrument for teacher self-evaluation as well.

Criteria for self-evaluation that might be used in determining how well teaching procedures assist students to develop the scientific approach to life problems was developed by a workshop group under the direction of Harold Alberthy. An abstract of the problems this group presented in scientific teaching techniques follows:

1) Has the teacher developed a sensitivity to the forms of student behavior which give evidence of beliefs, attitudes, usual reactions, etc., and does he allow such situations to develop within the group?

2) Does he leave open the field of choices to be discussed and the activities to be engaged in rather than choosing the topics himself?

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Ibid., p. 89.
3) Does he appeal to the responsibility of the class and of the individual by placing students in situations where much of the outcome will depend upon their efforts and their choices?

4) Does he help pupils to see that they should not allow slogans to pre-determine their courses of action?

5) Does he require evidence for statements of facts? Does he show pupils that they must prove the validity of measures and standards before assuming their reliability?

6) Does he help them to see that disagreements about facts or sources should lead them to further inquiry in their quest for truth?

7) Are his pupils developing intellectual curiosity, and are they more and more inclined to perform self-initiated, cooperative, or leadership acts?

**Techniques of Pupil Evaluation**

Individuals differ not only in the rate and methods of learning, but also in interests, needs, and abilities. Consequently there is a need for a flexible program of evaluation which considers the student's progress in terms that are appropriate to him.\(^3\) It seems then that the

teacher should have at hand a wide variety of techniques which will provide evidence of the progress or lack of progress in attaining the objectives previously listed. The immediate selection of a technique should be determined according to the situation and the evidence desired. The following techniques are suggestive of types that may be used in evaluating certain phases of pupil growth.

Examples of formal tests that may be used to gather evidence of the pupils' ability to think are presented here.

Interpretation of Data

This test is illustrative of the kind that seems appropriate for the first activity in the area of body concerns.

Read the description and study the graph. Below the graph you will find statements as possible interpretations of the data. Assume the facts are accurate and indicate in the column to the left whether you believe.

(1) The evidence is sufficient to make the statement true.
(2) The evidence is sufficient to make the statement false.
(3) The evidence suggests that the statement is probably true.

Ibid., pp. 404-6, for further description of this technique.
(4) The evidence suggests that the statement is probably false.
(5) The evidence is insufficient to make a decision concerning the statement.

The graph indicates the change of weight of two rats over a five week period (1) the top line represents a rat that was fed a complete protein diet and (2) the bottom line represents a rat that was fed an incomplete protein diet.

![Graph showing weight gain over five weeks]

**Statements:**

1. The weight gained by number (1) was less than that gained by number (2).
2. The weight gained by number (1) was approximately seven times as much as number (2).
3. The weight gained by number (2) was less than that gained by number (1).
4. The difference in weight is due to the protein diet.
5. The difference in weight is due to a complete protein diet in number (1) and an incomplete diet in number (2).
6. The difference in weight is probably due to the other nutrients in the diet.
7. The number (2) rat probably has a glandular deficiency.
8. Humans with a complete protein diet will maintain a normal weight.
10. The difference in weight is due to the protein and other nutrients in the diet.
11. The same results could be attained by using some other nutrient instead of protein.
Application of Principles.\textsuperscript{5}

Technique:

1. Decide upon the principles to be tested.

2. Describe a situation requiring the application of the chosen principle.

3. Define the problem - generally, but not always, in question form.

4. Select the correct predictions and plausible incorrect predictions.

5. Select reasons explaining each of the correct predictions and plausible incorrect predictions.

The following is illustrative of how this technique might be used in the area of contagious disease: The numbers below correspond to the numbers above.

1. Colds are caused by germs and are therefore contagious.

2.3 \underline{___} has a cold and should

4. a. Ignore it and not \textit{amper} himself, but carry on as usual.

b. Stay home from school until he is well again.

\textsuperscript{5}Science in General Education. Progressive Education Association for technique, see pp. 418-420. Also see Test 1.3 Application of Principles. Progressive Education Association Evaluation of the Eight Year Study. Ohio State University, Columbus, Ohio. 1937.
c. Go to school, but take extra precaution so as not to expose others, when sneezing or coughing.

d. Eat more than usual, so as to cure it.

5.1 Colds are poor excuses for school absence.

2 Anyone knows that you, "Feed a cold and starve a fever."

3 There would be less absence among all students, if those with colds stayed at home.

4 It takes extra rest to throw off a cold and you can't get that in school.

5 A red-blooded fellow pays no attention to colds.

Recognition of Assumption. 6

The following technique might be useful in evaluating the student's ability to recognize what is taken for granted:

Procedure:

Place a check mark ( ) next to the correct answer:

An infant will cry from hunger. It is assumed:

___ a) That when an infant cries he is hungry.

___ b) That an infant won't cry if his stomach is full.

___ c) That hunger induces crying.

___ d) None of the above assumptions is made.

6 From unpublished Graduate Student Committee Report on Evaluation under the direction of G. P. Cahoon, Summer, 1946.
To be healthy you must observe the laws of physical hygiene. It is assumed:

a) That you have been sick.

b) That if you observed the laws of physical hygiene you will never be sick.

c) That you know the laws of physical hygiene.

Reliability of Authorities

Sources other than those found in this unit may be needed for many of the activities listed. During the planning of the unit other activities may also suggest themselves. In selecting reliable sources of information and in evaluating authorities, the following criteria might be useful.

1. When statistics are given, is the agency reliable?

2. Is the opinion that of an expert in the field?

3. Accept the fact that knowledge is steadily developing, truth is only partial and never final.

4. Develop an attitude of critically evaluating the sources of information and points of view.

5. Background and success of the authority. Does authority transfer? Is an authoritative physicist necessarily an authoritative economist?

Ibid., pp. 100-101.
Use of Anecdotal Records

This technique is of particular value in helping the teacher understand children and their needs. Specific descriptions are written of the child's behavior in various situations. Two suggestions presented in the book, "Helping Teachers Understand Children," are pertinent to the writing of anecdotal records. They are: First, the teacher must think of behavior as supplying the clues to understanding and must learn to notice exactly what the child does and says. The meaning of this behavior must be sought in terms of facts about the child." Second, "these facts, with the aid of scientific principles, are to be used as the basis for planning ways of helping the child to face his adjustment problem and accomplish the necessary learning."

Anecdotal records can provide insight in evaluating the student's progress in his ability to observe, especially during laboratory experiments, demonstrations, and from his actions and comments during field trips. An accurate record of behavior over a period of time should

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provide an excellent means of scientific attitudes, such as: active curiosity, intellectual caution, tolerance, flexibility in points of view, tendency to see a problem through and other attitudes, that may be revealed in a specific description. Further use of these records may be made in evaluating other characteristics of personality, i.e., creativeness, esthetic appreciation, social sensitivity, cooperativeness, and self-direction.

It is suggested that these records be written for the purpose of convenience on 8½ x 11 paper and placed in individual manila folders bearing the student's name. Each descriptive anecdote should be dated so as to provide continuity in the data for evaluation.

Attitude - Beliefs

The following technique is appropriate in evaluating students' attitudes and beliefs. It would be especially useful in providing some evidence of pupil progress in a scientific approach to problems dealing with superstition, sterilization, heredity, and habits of health.

Instructions:

The statements in the accompanying test represent opinions about various problems. These statements
deal with unsettled questions; there are no right or wrong answers. You are to express your point of view about them. Indicate how you really feel about the issues expressed immediately after reading the statement.9

AUD 1. Socialized medicine is needed to insure equal medical care for all citizens.

AUD 2. We have always had accidents and always will -- it is an individual problem, and a person who should be concerned with only protecting himself.

AUD 3. All schools should require compulsory vaccination for smallpox of all children before they enter school for the first time.

AUD 4. Some cities have a smoke control ordinance but the problem is not of such importance to enforce the regulation.

AUD 5. Compulsory universal military training for all boys between the ages of 12 and 21 will help to insure a healthier nation.

AUD 6. All the feeble minded should be sterilized thereby eliminating the problem.

Questionnaire on Health Habits and Health Attitude

This evaluation technique might be developed and given to the pupils at the beginning of the unit and again at its conclusion. Some evidence may be obtained relative to health habits and health attitudes.

Instrument:

Place a check ( ) in the column that best describes youth health habits and health attitudes:

F - frequently (over fifty per cent of the time)
S - seldom (less than fifty per cent of the time)
N - never

<table>
<thead>
<tr>
<th></th>
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<th>N</th>
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</table>
1. Eat between meals            |   |   |   |
2. Sleep eight hours daily      |   |   |   |
3. Take a shower daily          |   |   |   |
4. Read in poorly lighted area  |   |   |   |
5. Brush teeth twice daily      |   |   |   |
6. Exercise                     |   |   |   |
7. Go without breakfast         |   |   |   |
8. "Bolt" my food at table      |   |   |   |
9. "Clean my plate" in school cafeteria |   |   |   |
10. Use a handkerchief when coughing or sneezing |   |   |   |
11. Eat balanced meals 3 times daily |   |   |   |
12. Slouch when standing or sitting |   |   |   |
Interest Questionnaire

Any instrument that would provide real pupil interest would be of value to the teacher and the student in planning the learning unit. The technique below used in the Denver Public Schools, suggests a procedure that may be of use in locating pupil interest. 10

Directions:

The statements that are on this list are things boys and girls might do. If you think you would like to do any one of these things, fill in the space under the letter L (Like). If you think you would not like to do any of these things, fill in the space under the letter D (Dislike). If you do not know whether or not you would like to do a thing or if you do not understand what that statement means, fill in the space under the Letter I (Indifferent).

EXAMPLE:

L D I 1. To read how the public is protected from false advertising.

L D I 2. To find out the composition of foods

L D I 3. To find out how good posture improves your appearance.

Other Techniques

There are many types of evaluative techniques. The kind that is used should be determined by the personality characteristics to be evaluated. Many instruments, with slight variation in structure, can be used in evaluating different outcomes. For an example, the technique that was suggested for evaluating the pupil's ability in the "Application of Principles" could also be used in evaluating the pupil's "sense of values." Whatever instrument is used in evaluation, its worthwhileness should be appraised in terms of the evidence it reveals in pupil-growth toward the desired goals.

Techniques that will assist the educative process toward this end have value. Many types of evaluation, such as, the essay form, multiple choice form, completion test form and others have been omitted. It was felt that these objective tests are commonly used and further suggestions regarding them seemed unnecessary here. However, there are some other informal techniques that might be suggested as a means of recording progress.

1. Informal conferences with students. The individual conference may reveal many interests and needs.
2. Discussion. Evidence of interest can be gathered by the questions pupils ask. Statements made may reveal prejudice and superstitious beliefs.

3. Teacher-pupil planning. How does the pupil assume responsibilities; what kind of suggestions does he make; and what are his reactions to suggestions by others? Is he cooperative, and is he considerate of group undertakings? What reasons are given for his selection of certain projects or activities; is he tolerant of the opinions of others? Can he accept group decision, and does he participate in matters of group concern?

4. Observing and assisting the student in his activities. Is there any evidence of growth in personal standards, tastes, and judgments as a result of experiences suggested in the unit? Does the pupil intelligently plan his own life?

5. Have the students keep a diary of significant experiences. What books, magazines, or articles are read? Self-evaluation of activities in which the student participated. Written generalizations drawn from the study of social mores in the area of healthful living.
Student Report:

The quality of individual or group reports can often be improved by having the pupils evaluate each other. An example of criteria which might assist the students in evaluating a report on a communicable disease.

1. How complete was the report? Did it cover such things as history, symptoms, causes, treatment, incubation period and method of transmission?

2. How well did the student get the report across? What suggestions can be offered for improvement?

3. Do you think the report met acceptable standards?
CHAPTER V

SUMMARY

This thesis was developed for the purpose of providing a resource unit in the area of healthful living for core teaching at University School. Although the material was selected for the tenth grade, its use need not be limited to this grade level.

A preliminary step in the development of the unit was an examination of the University School's philosophy and purposes, and an analysis of adolescent health needs and interests. This provided criteria for determining the objectives of the resource unit.

Learning activities and teaching aids were organized around seven areas of study. The activities and teaching materials were selected for the contribution they might make toward helping teachers and pupils plan interesting experiences while achieving the objectives of the unit. Some techniques that might be used in evaluating pupil growth toward these goals were included in the unit.

The preparation and use of this unit makes available a wide variety of meaningful learning experiences and
materials when needed. Furthermore, its important contribution toward teacher security in a core class, which cuts across subject matter lines, cannot be minimized.

It is believed that the quality of a resource unit could be improved and its scope enlarged, if it were developed through the cooperative effort of the various grade specialists and the core teacher.

In conclusion it may be stated that the purpose of the study was to gather and organize teaching materials in the area of Healthful Living for immediate use. At no time was it intended that a lid of finality be placed on this study, but rather that it serve as a framework for continued development through use.
GENERAL BIBLIOGRAPHY


"Health Education charts, maps, slides, films, posters, etc.," compiled by Lili Heimers, New Jersey State Teachers College, Upper Montclair, New Jersey, 1944. 35 pp. Mimeoographed.


"How Children Develop." Faculty, University School, Ohio State University, Columbus, Ohio, 1943. 79 pp.

"How to Make a Source Unit." A Group of Graduate Students in Secondary Education under the Direction of Harold Alberty, Ohio State University, 1944. 40 pp. Mimeoographed.


Mooney, Ross L. Manual for Problem Check List. Columbus: The Ohio State University, 1943.


"Science: Servant or Master." A Workshop Group in Curriculum Development under the Direction of Harold Alberty, Ohio State University, 1946. 110 pp. mimeographed.


APPENDIX
AUDIO-VISUAL AIDS

FILMS

The following films may be obtained from the Slide and Film Exchange, State of Ohio, Department of Education, Columbus, Ohio. Free loan, within state.

Key to letters: s - silent   sd - sound

**Alimentary Tract - Rsd-95.**

Treats in detail motility phenomena of the alimentary tract. Reveals different types of stomach movements, such as hypermotility, inhibition, hunger contractions, and normal movements. Simentation, peristalsis and antiperistalsis of the intestines are vividly portrayed. Motility of intestinal villi is clearly shown in microphotography.

**Anesthesia - Psd-60.**

Story of discovery of anesthetics and their application to medicine. It has several comic interludes, showing patients in 3000 B.C., in the Seventeenth Century, in 1799, and in a modern hospital. Apparatus used by the anesthetist today is also shown. The picture touches on modern facial operations and eye surgery.

**Angel of Mercy - Psd 257.**

Pictures ladies in the days of Victoria not permitted to enter a man's world. Then scene shifts to the Civil War and the attempts of Clara Barton and other women to minister in soldiers' hospitals. This is followed by picturing the first attempts of Red Cross to enlist the United States in its international organization. Scenes of disasters that bring about are portrayed.
Appendicitis, Story of - Ms 135.

All the important aspects of symptoms, diagnosis, hospital routine, operation, and post-operative care. Comparison is made between proper treatment and a case where castor oil was given resulting in ruptured appendix.

Artificial Pneumothorax - Msd 261.

History and development of lung collapse. Remarkable cinema photography of X-ray; sections of post-mortem lungs; treatment by forcing tubes through chest wall.

Bacteria - Es 115.

Culture media, mixing, filtering and sterilizing media. Preparing petri dishes, growing various types of vacteria. Photomicrograph of acetic acid bacteria, animation illustrates cocci bacilli, spirilla. Photomicrographs of harmless, harmful, and useful bacteria.

Blood Pressure, Taking - Gsd 367.

Illustrates pressure of blood in arteries and methods of measuring blood pressure.

Blood, The - Es 83.

Separation of plasm, solidified proteins, salt crystals, red blood corpuscles, white corpuscles, and group of blood platelets seen in microphotograph. Action of ether on hemoglobin, free action of white blood cells, leukocytes devour foreign particles, action of platelets, formation of clot.

Body Defenses Against Disease - Rsd 51.

Three lines of defense - skin, lymphatics, and blood, including a section of immunology. Microphotography of phagocytosis. Application of defense mechanism in specific cases. Action of liver and spleen. Antibodies.
Body Framework - Es 81.


Body Temperature, Control of - Red 141.

Variations in temperature of animals and man. The role of food, nerves, glands, and muscles in its control. Function of blood stream and the hypothalamus.

Body Temperature, Pulse, Respiration, Blood Pressure -Gsd 466.

Shows physiology of respiratory, heat regulatory, and circulatory systems, inter-relation in normal functions and in deviations from the normal.

Cardiac Patient, Care of -Gsd 467.

Demonstrates comfort, rest, sleep, diet, and feeding, elimination and cleanliness of nursing care. Also diversional and occupational therapy of patient.

Care of New Born Baby - Gsd 366.

Care of Patient with Diabetes (Complicated) - Gsd 464.

Diagnosis and treatment of coma and insulin shock; the role of the nurse, doctor, dietition, and psychiatrist in assisting patient to develop a healthy mental attitude toward his condition.

Choosing Your Vocation - Red 39.

Shows Bill, a boy of 15, and his perplexities in choosing a vocation. Role of guidance office and library illustrated. Gives view of various vocations.
Circulation - Es 118.

Circulatory system of body -- close-up of chick embryo's circulatory system. Animation of blood feeding muscle cells, oxygen, exchange of food and waste.

City Water Supply - Rd 154.

Sources of supply - wells, rivers, lakes, and watersheds; water tunnels and aqueducts; water-borne diseases; methods of water distribution with reference to New York City. Necessity of safeguarding its sources and distribution.

City's Health, Defending the - Rd 167.

Work of model city health department portrayed - education, gathering statistics, nursing, sanitation, laboratory analysis, child hygiene, and control of communicable diseases. Role of individual citizen in health program stressed.

Digestion of Foods - Rd 79.

Mechanical and chemical aspects of digestion and their controlling factors. Mastication, swallowing, stomach contractions, intestinal segmentation and peristalsis; production of saliva, gastric juice, pancreatic juice, and action of enzymes.

Diphtheria - Es 119.


Disease, How is Spread - Ms 127.

A well developed lesson on spreading of infection by careless personal habits.

Doctor Carver, Story of - Psd 113.

Interesting life story of Negro scientist, including the 140 products he made from peanuts.
Driving Habits - Gsd 470

Explains elements of good driving.

Dr. Jenner, Story of - Psd 40.

Story of Dr. Jenner's experiments with cow pox and people's distrust of him when he introduces vaccination.

Endocrine Glands. - Rsd 128.

Describes nature and function of parathyroid, pituitary, pancreas, and thyroid glands. Shows influence of calcium and parathyroid extract on muscular control; effect of pituitary hormones on egg development; preparation and use of insulin; characteristics of hyper and hypothyroidism; stimulation of mammary glands by pituitary and ovarian hormones.

Food - Msd 887.

Discusses methods devised to preserve food. Describes balanced and unbalanced diets.

For Health and Happiness - Gsd 153.

Shows children who from birth have had the right food, exercise, affection, and intelligent care.

Health for Defense - Psd 334.

Gallop poll makes a survey on health and what individuals are doing to maintain it. Covers proper foods, sufficient vitamins, regular exercise, fight against cancer, tuberculosis, and care of teeth.

Health and Recreation - Ms 90.

Scenic and recreational attractions around Waskesieu Lake, Saskatchewan. Notoring, canoeing, bathing, camping, diving, surfboard riding, golf, and tennis.
Health Service, Public - Esd 3.

Phases of work and research.

Hear, Right to - Msd 658.

Care of the deaf.

Heredity - Rd 100.

Animated photography explains mitosis and meiosis in relation to genes. Three kinds of one unit characters are treated - heterozygous forms in cattle, coat color of guinea pigs, and rough fur in guinea pigs. Latter two are used to illustrate dominance and two unit characters.

How the Eye Functions - Msd 628.

Shows functions of various parts of eye by diagramatic drawings.

Infantile Paralysis, Fight Against - Msd 758.

Activities of National Foundation, its local chapter in terms of health, education, epidemic aid, and research.


Animated drawings and laboratory demonstrations describe the renal system, formation of urine, regulation of blood composition, and functioning of bladder. Concludes with an analogy between kidney function and action of gyroscope.

Killers - Psd 53.

Close-ups of insects preying and being preyed upon in their struggle for existence.
Mental Defectives - Ms 134.

Lower grade mental defectives of Mongolian and Cretin types. Physical characteristics.

Nervous System - Rad 56.

Structure, pathways, and connections depicted. Nature of nerve impulse; conditions for setting up impulses; passage from cell to cell; their discharge and resultant activity; and finally, activity of the cerebrum are shown.

Post Operative Care - Gsd 431.

Procedure for making an anesthetic bed and moving patient from stretcher to bed; demonstrates care needed when patient is arousing from the anesthetic.

Sewage Disposal - Es 128.

Ocean disposal, use of ebb tide, storage tanks. Animation of purification plant, screening process, Imhoff tank, sludge beds, sprinkling filter, sand filtration, etc. Micro-photograph of nitrifying bacteria.

Silicosis, Stop - Gsd 33.

Dramatizes hazardous conditions under which a million Americans work. Animation shows nose and throat passages as dust finds its way to terminal air spaces where it forms scar tissue. Contrast between X-rays of normal and silicosis lungs. Practical control measures.

Therapeutic Use of Heat and Cold - Pt.1 - Gsd 459 - Hot Applications.

Explains body reactions to heat and its use in alleviating pain. How to apply hot water bottles, electric pads, chemical pads, and paraffin bath; and precautions which must be taken.
**Vitamin B - Es 225.**

Natural sources; effect of deficiency on pigeons and rats; effect on humans - beriberi; effect of balanced diet on disease and its importance to healthy bodies.

**Vitamin D - Es 235.**

Natural and artificial sources; results of deficiency; conditions in modern life which reduce the supply from natural sources. Series of experiments on animals, showing results of deficiency and feeding cod-liver oil. Means of increasing vitamin D in the body.

**X-rays, Exploring With - Msd 386.**

How discovered; where and when; how produced; experimentation; welcomed by medicine; today's uses.

**OTHER SOURCES**

**Miracle of Birth.** Cleveland Health Museum. Cleveland, Ohio.

Excellent 2 x 2 kodachrome slides showing the growing baby within the womb. Price $10.00

**Teach Them to Drive.** Pennsylvania State College, Pennsylvania

A sound film developed through the cooperative efforts of the College Visual Aid Department, State Automotive Association and the American Legion. Story of high school students driving to various places after a dance. Film opens with a tragedy. Can be secured by consulting local Chapter of American Automobile Association.

**Fight Syphilis.** Sound. 2 reels. Free.

Describes the community's job, education, providing clinics and follow-up workers, the drain on the nation's manpower, the cost of supporting the blind, the insane and the unemployables, crippled by syphilis.


A travel tour of the United States is presented, sketching a background of the tuberculosis control program.

Source: National Tuberculosis Association, New York. Contact state or local Tuberculosis Association.

Fight Against Infantile Paralysis. Sound. 1 reel. Free.

Shows the purposes and work of the National Foundation for Infantile Paralysis.


How to treat sprains, dislocations, bruises, frost bites and foreign matter in the eye, ear, nose and throat.

Source: Civil Aeronautics Administration, Washington, D. C. Audio-Visual Training Aids Staff, Commerce Building.


First aid treatment for hysteria, fainting, heat exhaustion, sunstroke, apoplexy, carbon monoxide.

Source: Civil Aeronautics Administration, Washington, D. C. Audio-Visual Training Aids Staff, Commerce Building.
Mechanics of Breathing. 16 mm. Sound. Free loan.

Source: Y.M.C.A. Motion Picture Bureau, 347 Madison Ave., New York City.

First Aid.

Bell and Howell Film Libraries, Bell and Howell, 1801-1815 Larchmont Ave., Chicago, Ill. Films for rental. $1.50 per reel for day for sound, $1.00 per reel per day for silent. $3.00 per reel per day silent in color. The following films are available:

Bleeding, Resuscitation and Shock. 16 min.
Treatment of Wounds and Burns. 13 min.
First Aid Fractures. 13 min.
Transporting the Injured. 13 min.

Emergency Splinting for Fractures of Lower Extremity.
16 mm. silent. (14 minutes) Free loan.

Source: Dr. Kellog Speed, 122 S. Michigan Ave., Chicago, Illinois.

Shows doctors applying splint to a foot and procedure in lifting victim onto a stretcher.

CATALOGUES

Two excellent guides to films are:


RECORDINGS

The following recordings were taken from two radio programs, the "American School of the Air," by the Columbia Broadcasting Systems, Education Division; and the "Human Adventure Series," by the University of Chicago. These recordings may be procured from the Teaching Aids Laboratory, Ohio State University.

Cancer - 
The Doctor Fights - American School of the Air
Drugs and Doctors - American School of the Air
Fight Against Death - American School of the Air
Heart Disease Human Adventure
Infantile Paralysis Human Adventure
Koch, the Death Fighter Human Adventure
Medicines Fight Against Death - Human Adventure
Microbe Hunters - American School of the Air
Miracles of Modern Surgery - Human Adventure
Penicillin, Life Saving Drug - American School of the Air
Protecting Your Health--American School of the Air
Public Health -- American School of the Air
Story of Anaesthesia - Human Adventure
The Story of Blood - Human Adventure

Readers Digest, "Blood Plasma for Everybody,"
Paul de Kruif, March, 1944.

SPEAKERS

The latest information available on health problems can be secured from local agencies. The following agencies are generally willing to send a representative to speak to a school group: Academy of Medicine, Tuberculosis Society, City Health Department, City Dental Society, Pharmaceutical Society, County Chapter of Crippled Children, County Chapter American Red Cross, Safety Department of the Chamber of Commerce, Nursing Association and Young Men's Christian Association.
Demonstrations and Projects

The following list of demonstrations and projects can be found in most biology texts and work books. This list was compiled from three biology books identified with the title of the project or demonstration.


Disease Prevention

- To learn ways of preventing colds.
- To find out about medical advances made during the war.

Health Interests of Children, Denver Public School, pp. 40-43
Body Structure and Function.

**To know why you are tall or short.**

**To study how the body is made.**

**To learn how your body works.**

**To find out what happens when you have a Charley horse.**

Boys

Girls

*Health Interests of Children, Denver Public Schools, pp. 43-45*
Selection and Composition of Food.

To learn how to select a good lunch.

To experiment with mice to see how they get and develop on different diets.

To find out how food affects your weight.

To learn what foods are best for your teeth.

Boys
Girls

Health Interests of Children, Denver Public Schools, pp. 10-16
Rest and Relaxation.

To learn how to relax.

To find out why you are cross when you are tired.

To get the right amount of sleep.

To find out why regular hours of sleep are important.

Boys

Girls

Health Interests & Children. Denver Public Schools pp. 49-51
To find out safety rules in around water

To find out some causes of automobile accidents.

Safety

To find out where most accidents occur in the house.

To study fire prevention.

Boys

Girls

Health Interests of Children, Denver Public Schools
First Aid.

To be shown how to care for a bleeding cut.

To learn how to take care of simple injuries.

To learn how to recognize signs of common illnesses.

To learn how to take pulse & temperature.

Boys ________
Girls ________

Health Interests of Children Denver Public Schools pp.56-59
To learn how to take good care of your eyes.

To learn how to build muscles.

Keeping Fit

To learn the foods to eat to keep well.

To practice body building exercises.

Boys

Girls

*Health Interests of Children* Denver Public Schools, pp. 34, 35
To observe which one of your parents you take after.

To study your family tree.

Heredity and Eugenics.

To learn why your eyes are brown or blue.

To study the laws of heredity.

Boys

Girls

Health Interests of Children - Denver Public Schools pp. 54, 55
Social Health

To find out some important facts concerning social disease.

Boys
Girls

Health Interests & Children. Denver Public Schools. pp. 22-23
Personality Development

To find out how to develop confidence in yourself.

To find out why some people like you and others don't.

To find out how to get along with other people.

To find out ways to make yourself more interesting to others.

Boys ______

Girls ______

Health Interests of Children - Denver Public Schools pp. 11-20
To practice exercises for posture and
poise.

To learn how to select your clothes.

Personal Appearance

To find out what causes pimples.

To find out how food affects your complexion.

Health Interests of Children, Denver Public Schools, pp. 51-54
**Group Health**

To visit a dairy to see how milk is pasteurized.

To find out what opportunities for recreation there are in your neighborhood.

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To learn how to judge the quality of things you buy.

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Boys

Girls

*Health Interests of Children, Denver Public Schools, pp. 36, 7, 8*
Drugs and Stimulants

To find out the effects of cola drinks

To study the effects of tobacco and alcohol

To read about different kinds of anesthetics

To learn the effects of aspirin

Boys

Girls

Health Interests of Children, Denver Public Schools pp. 48-49