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A survey to determine the status of health teaching in the elementary schools of the Stockton Unified School District

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A SURVEY TO DETERMINE THE STATUS OF
HEALTH TEACHING IN THE ELEMENTARY SCHOOLS OF
THE STOCKTON UNIFIED SCHOOL DISTRICT

A Thesis
Presented to
the Staff of the Department of Physical Education
College of Pacific

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Howard Franklin Evans
June, 1952

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PREFACE

There are so many aspects of this vital term "health" that it seems advisable to present a comprehensive report of the entire situation. There are certain signs of progress, as determined by actual projects in operation, that can be pointed out as indicative of the direction in which we are traveling. Some of these undoubtedly will afford a new focus of emphasis. Others, bordering on the expected routine procedure, will be important to a greater or lesser degree. Time, plus continuous evaluation, will probably prove a more accurate criteria than our own immediate judgement in determining the success or failure of these efforts. The school health program should be so organized as to bring into proper focus at least the following desirable objectives:

1. To encourage community participation in the school health program.
2. To encourage student planning and participation in the school health program.
3. To stimulate interest in the school and the community in effectively using the wealth of local community health resources and local county health agencies.
4. To encourage the philosophy that health is a quality of living which promotes and results in optimum

health and well-being and not an isolated subject to be taught as such and dealt with only as symptoms arise or as weather conditions prevent out-of-doors activities.

5. To develop the understanding that health is a way of thinking, a way of doing and a way of living.

6. To develop correlation of health teaching with all school activities.

In order to accomplish these objectives joint planning must take place among teachers, parent-teacher associations, school administrators, nurses and health district personnel. Before attempting any joint planning the understanding of several definitions is desirable.

Health is that complete fitness of body, soundness of mind and wholesomeness of emotions which make possible the highest quality of effective living and service.¹

Health in the human organism is that condition which permits optimal functioning of the individual enabling him to live most and to serve best in personal and social relationships.²

School Health Education is that part of health

¹ C. E. Turner, School Health and Health Education (St. Louis: The C. V. Mosby Company, 1947), p. 24.

² Committee on Terminology, American Association for Health and Physical Education, Journal of Health and Physical Education (December, 1934), p. 17.

education that takes place in schools or through efforts organized and conducted by school personnel.³

Health Instruction is that organization of learning experience directed toward the development of favorable health knowledge, attitudes and practices.⁴

Health Education is the sum of experiences which favorably influence habits, attitudes and knowledge relating to individual, community and racial health.⁵

As an endeavor is made to put these definitions and objectives to practical use in the teaching of health attitudes, habits and practices we must study our State School Code for the laws governing school health instruction. Some abstracts from the California state school health laws are therefore presented. The following incomplete listings are abstracts from the Education Code of California, the California Administrative Code and the Rules and Regulations of the State Board of Education, Part 1.

From the Education Code of California.

Instruction shall be given in all grades of school and in all classes during the entire school course in . . . the nature of alcohol and narcotics and their effects upon the human system as determined by science.
E. C. 8253.

3 Loc. cit.

4 Loc. cit.

5 Turner, op. cit. p. 25

All persons responsible for the preparation or enforcement of courses of study shall provide for instruction on the subjects of alcohol and narcotics. E. C. 8254.

Each teacher in any public school . . . shall devote a reasonable time each month . . . to the instruction of pupils . . . in fire prevention. E. C. 10096.

Instruction shall be given in every elementary . . . school in the state in the subjects of public safety and accident prevention . . . E. C. 10171.

. . . the Superintendent of Schools . . . shall require that instruction in public safety be given. E. C. 10174.

The course of study in the elementary schools shall include instruction in . . . training for healthful living . . . whenever any part of "training for healthful living" conflicts with the religious beliefs of the parent or guardian . . . on request . . . the pupil may be excused. E. C. 10302.

The governing board of each school district is legally responsible for health . . . of pupils. E. C. 13204.

The governing board of any school district shall make rules for the (medical) examination of pupils . . . E. C. 16481.

From the California Administrative Code and the Rules and Regulations of the State Board of Education, Part 1.

Fire drills must be provided at least once each month . . . the principal must keep a record of such drills. C. A. C. 17 and R. & R. 111-C.

Working under the code regulations as outlined by the California Administrative Code, the Rules and Regulations of the State Board of Education, Part 1, the Health and Safety Code, the Education Code of California and the Business and Professional Code the fostering of the following aims of health education are desirable and often mandatory.

1. To instruct children and youth so that they may conserve and improve their own health.

2. To establish in them the habits and principles of living which thruout their school life and in later years will aid in providing that abundant vigor and vitality which are a foundation for the greatest possible happiness and service in personal, family and community life.

3. To promote satisfactory habits and attitudes among parents and adults thru parent and adult education and thru the health education program for children, so that the school may become an effective agency for the advancement of the social aspects of health education in the family and in the community as well as in the school itself.

4. To improve the individual and community life of the future; to insure a better second generation, and a still better third generation; to build a healthier and fitter nation and race.⁶

⁶ A. M. A. and N. E. A., "Health Education, Report of the Joint Committee on Health Problems in Education, National Education Association of the United States, Washington, D. C. 1941, p. 15.

INTRODUCTION

The purpose of this study and report is to determine the present status of health teaching in the elementary schools of the Stockton Unified School District. The results of this study should serve to stimulate better teaching methods and to indicate further study toward the improvement of the health teaching curriculum. Health instruction has been a part of school curricula for many years. This study will locate the subject area in which health is taught and offer evidence as to the amount of health teaching in the Stockton elementary schools. It is not the intent, however, that this report go into the detail of curriculum revision and improvement but that it adhere to the establishment of the present status of health teaching in the elementary schools of the Stockton Unified School District.

There are three basic reasons for the selection of this problem as a basis for a thesis report. First, the nature of the author's position - Coordinator of Health, Physical Education, and Recreation for the Stockton Unified School District - provides him with a stimulating interest in all health education and particularly health teaching in the elementary grades. Second, the Stockton Unified School District administration wishes to determine the adequacy or inadequacy of health teaching in grades one through six. Third, the establishment of a basis for the vertical coordin-

ation of health teaching from the primary grades through the college grades. Interest, therefore, is not centered upon the effectiveness, ineffectiveness or method of teaching. This report is intended to show only the existence or nonexistence of health teaching in selected areas. The determination of this status will indicate whether or not the need exists for conducting additional research in the field of health teaching.

CHAPTER I

STATEMENT OF THE PROBLEM

In collecting the data to determine the present status of health teaching in the elementary schools a questionnaire was sent to a selected group of representative teachers. The questionnaire was designed to aid in determining:

- A. Pupil interest in health topics
- B. Grade placement of health topics
- C. Subject area placement of health topics
- D. Text book and reference material used in the teaching of health topics.

The final form of the questionnaire¹ was adopted after several consultations with the former Deputy Superintendent of the Stockton Unified School District, now Director of Instruction for Alameda County Schools, and the chairman of the College of the Pacific thesis committee.

The check list offered through a recent study, the results of which were published by the Denver Public Schools is the measuring device employed in this study.² Seventeen instructional areas were covered as follows: personal hygiene,

1 Appendix #1

2 Health Interest of Children. "Report of a Research Study of Health Instruction and Needs of Children as a Basis for Health Instruction - Kindergarten through Grade Twelve." (Denver Public Schools, 1947), p. 66-69.

group hygiene, personal appearance, development of personality, keeping fit, social health, disease, protection from disease, body structure and function, heredity and eugenics, rest and relaxation, dental hygiene, nutrition, stimulants and narcotics, home nursing, first aid, and safety. Each area title was further sub-divided to make a total check list of ninety-seven possible instructional areas to be checked. The check list was divided into two inventories, one of pupil interest and one to determine the location of health teaching in various subject areas. Evidences of pupil interest were checked under three column headings, positive, uncertain and negative. The areas in which health is being taught were indicated under the three headings of science, social studies and other subject areas, such as art, music, etc.

If questionnaires had been presented to all elementary teachers the compilation of returns would have resulted in a mass of data too cumbersome to lend itself to significant interpretation. The decision was therefore reached to obtain a cross section of the entire system. The principal of each school was asked to recommend teachers best qualified to complete the questionnaire. One primary and three intermediate teachers were recommended from each school, making one report from the primary area and one report each from the three intermediate grades of each school in the system. The recommended teachers were selected because of

their teaching background and interest in health teaching.

All teachers were asked to consider the entire check list in the light of their total teaching experience in the Stockton system. Stress was placed upon the point that all answers would be regarded as having come from an accredited professional jury. Instructions for filling out the questionnaire were divided into two parts: (a) directions for pupil interest inventory, (b) directions for location of health teaching.

Under the pupil interest inventory, teachers were asked to check in column one only those topics in which they had observed a large number of instances of pupil interest. In column two they were asked to check those topics about which they were uncertain as to pupil interest. In column three checks were to be placed before those topics in which they had observed a large number of dislikes. If interests or dislikes were peculiar only to either boys or girls, this fact was to be noted also. Under the location of health teaching, teachers were asked to check in column four those topics that are taught in science classes. In column five they were asked to check those topics that are taught in social studies classes. In the sixth column, headed other areas in which taught, they were asked to list any other subject areas in which various topics are taught.

The authenticity of the information received was assured by each teacher being individually contacted and asked to attend a general meeting to receive instructions and ask questions relative to the proper filling out of the questionnaire. To avoid any feeling of compulsion or coercion, teachers were given a choice between two identical meetings spaced ten days apart. At the meetings the questionnaire was gone over and discussed point by point. Two weeks were then allowed for the completion and return of the questionnaire.

As soon as the compilation of the returns were completed it became evident that a regrouping was necessary to allow intelligent analysis of the data and the construction of suitable charts. The seventeen general areas were therefore regrouped into four major groups for both primary and intermediate grades. The groups were as follows:

Group I - Personal and Group Hygiene, containing 27 topics.
Group II - Growth and Development, containing 20 topics.
Group III - Protection and Control of Diseases, containing 32 topics.
Group IV - Safety and First Aid, containing 18 topics.

The returns on the questionnaire were figured in terms of percentages of interest and teaching and the topics ranked, by group, according to the percentages thus obtained. Returns were secured from twenty-one primary grade teachers and fifty-three intermediate grade teachers.

Percentages were determined by dividing the total number of checks for any given topic by the total number of questionnaires secured.

By using these percentages as a basis all topics were ranked as to evidences of interest and teaching in the areas of science, social studies and other areas for both the primary and intermediate levels. Total teaching rank was determined by totalling the check marks under all three teaching areas. The charts starting on page eighteen form tables of rank by percentage for the topics in each group.

CHAPTER II

PRESENTATION OF THE DATA

As the data collected was to be used as the basis for a report to the Superintendent's Office, one hundred per cent returns were obtained. Of the twenty-one questionnaires completed by primary teachers, eight were from first grade, seven from second grade and six were from third grade teachers. On the intermediate level fifty-three questionnaires were completed, eighteen by fourth grade teachers, eighteen by fifth grade teachers and seventeen by sixth grade teachers. By securing returns in this manner a cross section was obtained on the primary and the intermediate levels.

The compilation of the data shows that nineteen out of a possible 2,037, or less than one per cent, of the topics were of interest to boys alone or girls alone and at the intermediate level the percentage was also insignificant showing less than two and five tenths per cent or one hundred and twenty-two out of 5,141 possible checks. Uncertainty as to evidences of interest was checked in eighteen and seven tenths per cent of the checks for the ninety-seven topics at the primary level and thirty-four and three tenths per cent at the intermediate level. While these percentages seem somewhat high they can be interpreted as of little significant meaning in this study. Where the evidences of positive interest are high or low, uncertainty as to evidences

of interest is correspondingly high or low and vice versa. The data, as explained later, shows that teaching follows interest rank rather closely.

Under the column headed "Evidences of Negative Interest", the average percentages are three and six tenths per cent and twelve and three tenths per cent respectively at the primary and intermediate grade levels. These percentages are so low that they can safely be considered as insignificant to the findings of this study. The results in the uncertain and negative interest columns, therefore, are given no further mention in this report.

Under the heading "Other Areas" a total of forty-one teaching areas were mentioned. Some of these such as "general," "all subjects," "incidentally," "recess," "discussed," and "rest period" appear to bear little significance. Others such as "health examination," "newspaper clippings," "audio visual," "dramatization," "cafeteria," "counseling" and "nurses visits" offer a focus of tremendous emphasis upon health teaching. This column, therefore, must be considered of minor value in determining actual teaching status but still offering tremendous intangible possibilities.

The charts in which percentages are interpreted into rank are the results of recapping the percentage rank of all the topics listed under the four major groups. Ranks are shown for interest, total teaching and subject area teaching in the areas of science, social studies and other areas. The

percentages were obtained by dividing the number of check marks for each topic by the number of questionnaires completed.

The column ranking the total teaching shows that very few topics are omitted entirely and where omissions occur they are justified by the absence of or the low interest rank.

CHAPTER III

TEXT AND SUPPLEMENTARY BOOKS

In addition to the check list of topics, a page was added to the questionnaire with questions designed to determine the adequacy and use of the State Health Series and the availability and use of supplementary health teaching books. The California State Health series has been in regular use as the elementary school basic health text. Adequacy of supply has been arbitrarily determined as one for every two pupils. Eighty-eight per cent of those answering felt that the rooms were adequately supplied with this basic text. Sixty-eight per cent stated that the text was used often (eight or more times per year). Supplementary health books at the rate of five or more per room were considered as adequate by fifty-five per cent and inadequate by forty-five per cent of the responses. Supplementary books are used often (eight or more times per year) by seventy per cent of the teachers. Less than one per cent answered that both State series and supplementary books were never used. A list of available supplementary health books and a list of available books in other subjects from which usable health material may be obtained are listed in the appendix.¹

¹ Appendix #2

CHAPTER IV

EFFECTIVENESS OF PRESENT TEACHING

In an effort to obtain an indication of the effectiveness of the present health teaching a spot check on health knowledge and attitudes was made at three schools. In choosing the schools and grades for the check, one school was chosen from the low income bracket, one from the middle, and one from the higher bracket. The test used was the Gates-Strange Health Knowledge Test, Grades Three-Eight, form B.¹ The test was administered by a fifth grade teacher, recommended by the principal, to her fifth grade pupils in their regular class-room environment.

The questions in the test were divided into two types; (a) questions intended to test factual knowledge and (b) questions intended to test practical application of information. Of the 60 questions in the test nineteen were considered to be based upon factual knowledge and forty-one upon practical application of information. Ninety-eight children took the test. Of the answers given by the children on the factual knowledge type of questions forty-two per cent were correct, forty-nine per cent were incorrect and nine per cent were omitted.

¹ Appendix #3

Of the answers on practical application of information sixty-three per cent were correct, thirty-three per cent were incorrect and four per cent were omitted. This shows that on this test the Stockton children tend to understand practical application of information about twenty per cent better than they understand factual knowledge as related to health knowledge. It also shows that the cross section of children represented by the test results were capable of answering fifty-two and five tenths per cent correctly. Perusing the test results farther we find that in the distribution of scores Stockton children rate below the national norms for children in large city school systems. In comparing the scores of the three groups in Stockton the indication is that children of parents in the higher income bracket rank slightly higher in health knowledge than those whose parents fall in the middle and lower income brackets yet slightly lower than the national norms for fifth graders in large school systems.

The following chart indicates a comparison of fifth grade children in three selected schools in Stockton with the accepted national norms for fifth grade pupils. The school from the low income bracket is designated as school A, the middle income bracket as school B and the school from the high income bracket as school C.

	Stockton School A	Stockton School B	School C	Total or Average	National Norms
No. Taking Test	34	33	31	98	
Range	9 - 42	6 - 46	13 - 50	7 - 50	25 - 52
Q3	39	38	43	40	45
Median	34	33	39	35	41
Q 1	26	29	34	30	33

Since in health education instruction is not standardized, valid national norms are not reasonably fixed.² The results of this test, however, indicate that health knowledge in the Stockton City Elementary Schools is in need of improvement.

² Arthur I. Gates and Ruth Strang, Gates-Strang Health Knowledge Test, Grades 3-8, Form b, Manual of Directions, Teachers College, Columbia University, 1937, p. 2

CHAPTER V

TABLES

In order to facilitate the tabulation and interpretation of the main data the total topics listed in the study are grouped under four general headings; I Personal and Group Hygiene, II Growth and Development, III Protection and Control of Disease and IV Safety and First Aid.

The tables are arranged to indicate the rank according to interest and the grade and subject placement of the topics.

Tables I to VIII indicate the rank of the topics according to interest of pupils.

Tables IX to XVI indicate grade and subject placement of topics in group I.

Tables XVII to XXIV indicate grade and subject placement of topics in Group II.

Tables XXV to XXXII indicate grade and subject placement of topics in group III.

Tables XXXIII to LX indicate grade and subject placement of topics in group IV.

Tables LXI to LXIV indicate comparison of interest rank with teaching rank according to grade placement.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE I

GROUP I PRIMARY
PERSONAL AND GROUP HYGIENE

Rank	Topics	Percentages
1	Personal Cleanliness	85.7
2	Use of Handkerchief	80.9
3	Getting Along with Contemporaries	66.6
4	Care of Eyes, Ears and Nose	57.1
5	Public Sanitary Practices	57.1
6	Eating Manners	52.3
7	Good Grooming	52.3
8	Developing Wide Interests	47.6
9	Rising and Bed Time procedures	42.8
10	Correct Clothing	42.8
11	Regard for Others	42.8
12	Getting Along with Adults	38.0
13	Poise and Self Confidence	33.3
14	Family Adjustments	33.3
15	Seeking the Advice of Elders	28.6
16	Facilities for Group Recreation	28.6
17	Importance of Good Posture	28.6
18	Care of Normal Skin	23.8
19	Public Health Services	19.0
20	How Life Begins	19.0
21	Care of Skin Disturbances	14.2
22	Boy-Girl Relations	14.2
23	Studying Human Growth	9.5
24	Use of Cosmetics	0.0
25	Menstruation	0.0
26	Adolescent Changes	0.0
27	Average Longevity	0.0

The column on the right gives the percentage of twenty-one teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE II

GROUP II PRIMARY

GROWTH AND DEVELOPMENT

Rank	Topics	Percentages
1	Exercise and Growth and Development	76.5
2	Right Amount of Sleep	54.7
3	Regular Sleeping Habits	42.8
4	Rest and Growth and Development	38.5
5	Joy of Feeling Fit	23.8
6	Change of Activity Gives Rest	23.8
7	Hobbies, Recreation and Relaxation	23.8
8	Variation in Growth	19.0
9	Athletic Training	14.2
10	Body Function	9.5
11	Twins	9.5
12	Technique of Relaxation	4.8
13	Parts of the Body	4.8
14	Body Structure	4.8
15	Fatigue and Nervous habits	0.0
16	Laws of Heredity	0.0
17	Family Resemblance	0.0
18	Circulatory System	0.0
19	Respiratory System	0.0
20	Function of Physical Examination	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE III

GROUP III PRIMARY

PROTECTION AND CONTROL OF DISEASE

Rank	Topics	Percentages
1	Care of Teeth and Gums	85.7
2	Drinking Plenty of Water	71.4
3	Regular Visits to Dentist	54.8
4	Vaccination and Immunization	54.7
5	Prevention of Colds	54.7
6	Eating Habits	54.7
7	Necessity for Chewing Well	52.3
8	Effect of Food on Body	52.3
9	Prevention of Disease	42.8
10	Choice of Foods	42.8
11	Basic Foods	38.0
12	Rest and Quiet as Digestive Aids	38.0
13	Disease and Filth	33.3
14	Public Health Agencies	28.6
15	Prevention of Infection	28.6
16	Disease and Good Condition	23.8
17	Public Sanitation	19.0
18	Where to Obtain Medical Advice	19.0
19	Conquest of Disease	14.2
20	Control of Disease	14.2
21	Nature and Cause of Epidemics	14.2
22	Tooth Structure	14.2
23	Development of Teeth	9.5
24	Effects of Tea, Coffee, Cola	9.5
25	Effects of Tobacco	9.5
26	Effects of Alcohol	9.5
27	Body Resistance and Disease	9.5
28	Types of Dental Correction	4.8
29	Fads and Superstitions	4.8
30	Recent Medical Development	0.0
31	Effect of Headache Remedies	0.0
32	Effect of Sleeping Tablets	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE IV

GROUP IV PRIMARY
SAFETY AND FIRST AID

Rank	Topics	Percentages
1	Safety To and From School	90.5
2	Bicycle Safety	80.9
3	Safety in School Building	76.5
4	Safety in School Grounds	76.5
5	Fire Safety	76.5
6	Safety at Home	71.4
7	Care of Minor Injuries	66.6
8	Automobile Safety	66.6
9	Water Safety	42.8
10	Accidents and What To Do	23.8
11	Care of Major Injuries	14.2
12	Usual Signs of Illness	9.5
13	Waiting on the Sick	4.8
14	Procedures in Sudden Illness	4.8
15	Symptoms of Various Injuries	4.8
16	Preparing Food for the Sick	0.0
17	Taking Temperature and Pulse	0.0
18	Industrial Safety	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE V

GROUP I INTERMEDIATE
PERSONAL AND GROUP HYGIENE

Rank	Topics	Percentages
1	Personal Cleanliness	69.0
2	Good Grooming	66.0
3	Facilities for Group Recreation	62.2
4	Use of Handkerchief	62.2
5	Getting Along with Contemporaries	62.2
6	Poise and Self Confidence	58.5
7	Correct Clothing	54.7
8	Public Health Services	50.9
9	Public Sanitary Practices	49.9
10	Developing Wide Interests	49.9
11	Importance of Good Posture	49.9
12	Regard for Others	45.2
13	Getting Along with Adults	45.1
14	Seeking the Advice of Elders	43.4
15	Care of Eyes, Ears and Nose	41.5
16	Boy-Girl Relations	39.6
17	Eating Manners	39.6
18	Care of Normal Skin	35.8
19	Care of Skin Disturbances	32.0
20	How Life Begins	32.0
21	Studying Human Growth	28.3
22	Rising and Bed Time Procedures	28.3
23	Average Longevity	27.7
24	Use of Cosmetics	26.4
25	Family Adjustments	22.6
26	Menstruation	9.5
27	Adolescent Changes	9.5

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE VI
 GROUP II INTERMEDIATE
 GROWTH AND DEVELOPMENT

Rank	Topics	Percentages
1	Athletic Training	83.0
2	Exercise and Growth and Development	77.3
3	Hobbies, Recreation and Relaxation	54.7
4	Regular Sleeping Habits	49.9
5	Right Amount of Sleep	47.0
6	Joy of Feeling Fit	43.4
7	Change of Activity Gives Rest	39.6
8	Parts of the Body	37.6
9	Body Function	37.6
10	Variation in Growth	33.9
11	Body Structure	33.9
12	Rest and Growth and Development	28.3
13	Circulatory System	26.4
14	Respiratory System	24.5
15	Technique of Relaxation	18.8
16	Function of Physical Examination	18.8
17	Fatigue and Nervous Habits	15.1
18	Family Resemblance	9.5
19	Twins	3.8
20	Laws of Heredity	0.0

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE VII

GROUP III INTERMEDIATE
PROTECTION AND CONTROL OF DISEASE

Rank	Topics	Percentages
1	Care of Teeth and Gums	64.1
2	Drinking Plenty of Water	60.4
3	Prevention of Colds	56.6
4	Vaccination and Immunization	50.9
5	Regular Visits to Dentist	49.9
6	Eating Habits	49.9
7	Basic Foods	49.9
8	Prevention of Infaction	49.9
9	Prevention of Disease	47.5
10	Fads and Superstitions	47.0
11	Disease and Filth	41.5
12	Conquest of Disease	39.6
13	Choice of Foods	37.7
14	Effect of Food on Body	37.7
15	Where to Obtain Medical Advice	35.8
16	Necessity for Chewing Well	33.9
17	Disease and Good Condition	33.9
18	Tooth Structure	33.9
19	Development of Teeth	33.9
20	Public Health Agencies	32.0
21	Control of Disease	32.0
22	Rest and Quiet as Digestive Aids	30.1
23	Effects of Tea, Coffee, Cola, etc.	28.3
24	Effects of Tobacco	28.3
25	Effects of Alcohol	28.3
26	Body Resistance and Diseases	28.3
27	Public Sanitation	24.5
28	Types of Dental Correction	22.7
29	Nature and Causes of Epidemics	20.8
30	Recent Medical Developments	18.8
31	Effect of Sleeping Tablets	7.6
32	Effect of Headache Remedies	5.7

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was of interest to pupils.

RANK OF TOPICS ACCORDING TO INTEREST OF PUPILS

TABLE VIII

GROUP IV INTERMEDIATE
SAFETY AND FIRST AID

Rank	Topics	Percentages
1	Safety To and From School	77.4
2	Safety on the School Grounds	77.4
3	Safety in School Buildings	75.5
4	Fire Safety	69.8
5	Bicycle Safety	69.8
6	Care of Minor Injuries	67.9
7	Safety at Home	58.5
8	Water Safety	50.9
9	Automobile Safety	47.0
10	Accidents and What to Do	41.5
11	Care of Major Injuries	32.0
12	Symptoms of Various Injuries	17.0
13	Usual Signs of Illness	11.3
14	Industrial Safety	7.6
15	Taking Temperature and Pulse	7.6
16	Procedures in Sudden Illness	7.6
17	Waiting on the Sick	5.7
18	Preparing Food for the Sick	5.7

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was of interest to pupils.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE IX

GROUP I PRIMARY
PERSONAL AND GROUP HYGIENE
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Personal Cleanliness	42.8
2	Care of Eyes, Ears and Nose	23.8
3	Importance of Good Posture	23.8
4	Developing Wide Interests	23.8
5	Use of Handkerchief	23.8
6	Public Sanitary Practices	19.0
7	Correct Clothing	19.0
8	How Life Begins	19.0
9	Eating Manners	14.2
10	Rising and Bed Time Procedures	9.5
11	Getting Along with Contemporaries	9.5
12	Regard for Others	9.5
13	Good Grooming	9.5
14	Care of Normal Skin	9.5
15	Care of Skin Disturbances	9.5
16	Poise and Self Confidence	4.8
17	Getting Along with Adults	4.8
18	Boy-Girl Relationships	4.8
19	Studying Human Growth	4.8
20	Seeking the Advice of Elders	0.0
21	Public Health Services	0.0
22	Family Adjustments	0.0
23	Facilities for Group Recreation	0.0
24	Use of Cosmetics	0.0
25	Menstruation	0.0
26	Adolescent Changes	0.0
27	Average Longevity	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE X

GROUP I PRIMARY
PERSONAL AND GROUP HYGIENE
TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Rising and Bed Time Procedures	71.4
2	Getting Along with Contemporaries	71.4
3	Personal Cleanliness	66.6
4	Regard for Others	66.6
5	Eating Manners	61.9
6	Correct Clothing	57.1
7	Getting Along with Adults	52.3
8	Public Sanitary Practices	47.6
9	Poise and Self Confidence	47.6
10	Good Grooming	47.6
11	Developing Wide Interests	42.8
12	Care of Eyes, Ears and Nose	38.0
13	Seeking the Advice of Elders	38.0
14	Public Health Services	33.3
15	Family Adjustments	33.3
16	Importance of Good Posture	28.5
17	Use of Handkerchief	23.8
18	Facilities for Group Recreation	23.8
19	Care of Normal Skin	14.2
20	Boy-Girl Relationships	14.2
21	Studying Human Growth	9.5
22	Care of Skin Disturbances	4.8
23	How Life Begins	4.8
24	Use of Cosmetics	0.0
25	Menstruation	0.0
26	Adolescent Changes	0.0
27	Average Longevity	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XI

GROUP I PRIMARY
PERSONAL AND GROUP HYGIENE
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Importance of Good Posture	71.4
2	Personal Cleanliness	61.9
3	Rising and Bed Time Procedures	57.1
4	Getting Along with Contemporaries	54.7
5	Use of Handkerchief	52.3
6	Eating Manners	47.6
7	Poise and Self Confidence	47.6
8	Regard for Others	42.8
9	Developing Wide Interests	42.8
10	Care of Eyes, Ears and Nose	42.8
11	Public Sanitary Practices	38.0
12	Good Grooming	23.8
13	Getting Along with Adults	23.8
14	Seeking the Advice of Elders	23.8
15	Public Health Services	23.8
16	Correct Clothing	19.0
17	Care of Normal Skin	19.0
18	Boy-Girl Relationships	14.2
19	Care of Skin Disturbances	14.2
20	Family Adjustments	9.5
21	Facilities for Group Recreation	9.5
22	Studying Human Growth	9.5
23	How Life Begins	0.0
24	Use of Cosmetics	0.0
25	Menstruation	0.0
26	Adolescent Changes	0.0
27	Average Longevity	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT TO TOPICS

TABLE XII

GROUP I PRIMARY
PERSONAL AND GROUP HYGIENE
TAUGHT IN ALL AREAS

	Science	Social Studies	Other Areas	Total All Areas
1 Personal Cleanliness	9	14	13	36
2 Rising and BedTime Procedures	2	15	12	29
3 Getting Along with Contemporaries	2	15	12	29
4 Eating Manners	3	13	10	26
5 Importance of Good Posture	5	6	15	26
6 Regard for Others	2	14	9	25
7 Developing Wide Interests	5	9	9	23
8 Care of Eyes, Ears and Nose	6	8	9	23
9 Public Sanitary Practices	4	10	8	22
10 Poise and Self Confidence	1	10	10	21
11 Use of Handkerchief	5	5	11	21
12 Correct Clothing	4	12	4	20
13 Good Grooming	2	10	5	17
14 Getting Along with Adults	1	11	5	17
15 Seeking the Advice of Elders	0	8	5	13
16 Public Health Services	0	7	5	12
17 Family Adjustments	0	7	2	9
18 Care of Normal Skin	2	3	4	9
19 Facilities for Group Recreation	0	5	2	7
20 Boy-Girl Relationships	1	3	3	7
21 Care of Skin Disturbances	2	1	3	6
22 How Life Begins	4	1	0	5
23 Studying Human Growth	1	2	2	5
24 Use of Cosmetics	0	0	0	0
25 Menstruation	0	0	0	0
26 Adolescent Changes	0	0	0	0
27 Average Longevity	0	0	0	0

Twenty-one teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all indicated teaching. Where the aggregate is over twenty-one overlapping of teaching is indicated. Scores under twenty-one do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XIII

GROUP I INTERMEDIATE
PERSONAL AND GROUP HYGIENE
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Personal Cleanliness	64.1
2	Care of Eyes, Ears and Nose	52.8
3	Importance of Good Posture	49.9
4	Studying Human Growth	49.9
5	Care of Normal Skin	47.0
6	How Life Begins	41.5
7	Use of Handkerchief	39.6
8	Public Sanitary Practices	37.7
9	Correct Clothing	35.8
10	Rising and Bed Time Procedures	32.0
11	Developing Wide Interests	30.1
12	Eating Manners	30.1
13	Good Grooming	28.3
14	Care of Skin Disturbances	28.3
15	Poise and Self Confidence	24.5
16	Public Health Services	24.5
17	Regard for Others	20.8
18	Getting Along with Contemporaries	18.8
19	Boy-Girl Relationships	15.1
20	Average Longevity	15.1
21	Getting Along with Adults	13.2
22	Adolescent Changes	13.2
23	Seeking the Advice of Elders	9.5
24	Use of Cosmetics	9.5
25	Menstruation	7.6
26	Facilities for Group Recreation	5.7
27	Family Adjustments	3.8

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XIV

GROUP I INTERMEDIATE
PERSONAL AND GROUP HYGIENE
TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Getting Along with Contemporaries	71.6
2	Personal Cleanliness	58.5
3	Poise and Self Confidence	58.4
4	Getting Along with Adults	56.6
5	Developing Wide Interests	54.7
6	Regard for Others	54.7
7	Public Sanitary Practices	47.1
8	Correct Clothing	43.4
9	Good Grooming	43.4
10	Seeking the Advice of Elders	41.5
11	Eating Manners	39.6
12	Facilities for Group Recreation	39.6
13	Use of Handkerchief	32.0
14	Importance of Good Posture	30.1
15	Public Health Services	32.0
16	Rising and Bed Time Procedures	28.3
17	Care of Eyes, Ears and Nose	24.5
18	Care of Normal Skin	24.5
19	Family Adjustments	22.6
20	Boy-Girl Relationships	20.8
21	Care of Skin Disturbances	17.0
22	How Life Begins	9.5
23	Use of Cosmetics	9.5
24	Studying Human Growth	7.6
25	Average Longevity	7.6
26	Adolescent Changes	5.7
27	Menstruation	0.0

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XV

GROUP I INTERMEDIATE
PERSONAL AND GROUP HYGIENE
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Poise and Self Confidence	66.0
2	Getting Along with Adults	56.6
3	Getting Along with Contemporaries	54.7
4	Developing Wide Interests	54.7
5	Regard for Others	52.8
6	Importance of Good Posture	47.0
7	Good Grooming	43.4
8	Personal Cleanliness	39.6
9	Correct Clothing	37.7
10	Eating Manners	37.7
11	Seeking the Advice of Elders	35.8
12	Use of Handkerchief	33.9
13	Public Sanitary Practices	32.0
14	Facilities for Group Recreation	30.1
15	Boy-Girl Relationships	30.1
16	Rising and Bed Time Procedures	28.3
17	Public Health Services	28.3
18	Care of Skin Disturbances	28.3
19	Care of Normal Skin	24.5
20	Family Adjustments	24.5
21	Care of Eyes, Ears and Nose	18.8
22	Adolescent Changes	15.1
23	Studying Human Growth	13.2
24	How Life Begins	9.5
25	Use of Cosmetics	7.6
26	Menstruation	7.6
27	Average Longevity	3.8

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XVI

GROUP I INTERMEDIATE
PERSONAL AND GROUP HYGIENE
TAUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Personal Cleanliness	34	31	21	86
2	Poise and Self Confidence	13	31	35	79
3	Getting Along with Contemporaries	10	38	29	77
4	Developing Wide Interests	16	29	29	74
5	Regard for Others	11	29	28	68
6	Importance of Good Posture	26	16	25	67
7	Getting Along with Adults	7	30	30	67
8	Correct Clothing	19	23	20	62
9	Public Sanitary Practices	20	25	17	62
10	Good Grooming	15	23	23	61
11	Eating Manners	16	21	20	57
12	Use of Handkerchief	21	17	18	56
13	Care of Eyes, Ears and Nose	28	13	10	51
14	Care of Normal Skin	25	13	13	51
15	Rising and Bed Time Procedures	17	15	15	47
16	Seeking the Advice of Elders	5	22	19	46
17	Public Health Services	13	17	15	45
18	Facilities for Group Recreation	3	21	16	40
19	Care of Skin Disturbances	15	9	15	39
20	Studying Human Growth	26	4	7	37
21	Boy-Girl Relationships	8	11	16	35
22	How Life Begins	22	5	5	32
23	Family Adjustments	2	12	13	27
24	Adolescent Changes	7	3	8	18
25	Use of Cosmetics	5	5	4	14
26	Average Longevity	3	4	2	14
27	Menstruation	4	0	4	8

Fifty-three teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all reported teaching. Where the aggregate is over fifty-three overlapping of teaching is indicated. Scores under fifty-three do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XVII

GROUP II PRIMARY
GROWTH AND DEVELOPMENT
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Right Amount of Sleep	28.6
2	Rest and Growth and Development	28.6
3	Regular Sleeping Habits	23.8
4	Exercise and Growth and Development	19.0
5	Hobbies, Recreation and Relaxation	14.2
6	Change of Activity Gives Rest	9.5
7	Variations in Growth	9.5
8	Joys of Feeling Fit	4.8
9	Technique of Relaxation	4.8
10	Twins	4.8
11	Function of Physical Examinations	4.8
12	Body Structure	4.8
13	Respiratory System	4.8
14	Fatigue and Nervous Habits	4.8
15	Athletic Training	0.0
16	Body Function	0.0
17	Family Resemblances	0.0
18	Circulatory System	0.0
19	Parts of the Body	0.0
20	Laws of Heredity	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XVIII

GROUP II PRIMARY
GROWTH AND DEVELOPMENT
TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Right Amount of Sleep	47.6
2	Hobbies, Recreation and Relaxation	38.0
3	Rest and Growth and Development	33.3
4	Regular Sleeping Habits	33.3
5	Change of Activity Gives Rest	29.6
6	Exercise and Growth and Development	23.8
7	Joy of Feeling Fit	14.2
8	Variations in Growth	9.5
9	Technique of Relaxation	9.5
10	Twins	4.8
11	Body Function	4.8
12	Family Resemblances	4.8
13	Athletic Training	0.0
14	Function of Physical Examinations	0.0
15	Body Structure	0.0
16	Respiratory System	0.0
17	Fatigue and Nervous Habits	0.0
18	Circulatory System	0.0
19	Parts of Body	0.0
20	Laws of Heredity	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XIX

GROUP II PRIMARY
GROWTH AND DEVELOPMENT
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Exercise and Growth and Development	66.6
2	Right Amount of Sleep	47.6
3	Rest and Growth and Development	42.8
4	Regular Sleeping Habits	38.0
5	Hobbies, Recreation and Relaxation	33.3
6	Athletic Training	33.3
7	Joy of Feeling Fit	28.6
8	Change of Activity Gives Rest	23.8
9	Technique of Relaxation	19.0
10	Variations in Growth	14.2
11	Function of Physical Examinations	9.5
12	Body Structure	9.5
13	Twins	4.8
14	Respiratory System	4.8
15	Fatigue and Nervous Habits	4.8
16	Body Function	4.8
17	Family Resemblances	0.0
18	Circulatory System	0.0
19	Parts of Body	0.0
20	Laws of Heredity	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XX

GROUP II PRIMARY
GROWTH AND DEVELOPMENT
TAUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Right Amount of Sleep	5	10	10	26
2	Exercise & Growth & Development	4	6	14	24
3	Rest & Growth & Development	6	7	9	22
4	Regular Sleeping Habits	5	7	8	20
5	Hobbies, Recreation & Relaxation	3	8	7	18
6	Change of Activity Gives Rest	2	6	5	13
7	Joys of Feeling Fit	1	3	6	10
8	Variations in Growth	2	2	3	7
9	Technique of Relaxation	1	2	4	7
10	Athletic Training	0	0	7	7
11	Twins	1	1	1	3
12	Function of Physical Examinations	1	0	2	3
13	Body Structure	1	0	2	3
14	Respiratory System	1	0	1	2
15	Fatigue and Nervous Habits	1	0	1	2
16	Body Function	9	1	1	2
17	Family Resemblances	0	1	0	1
18	Circulatory System	0	0	0	0
19	Parts of the Body	0	0	0	0
20	Laws of Heredity	0	0	0	0

Twenty-one teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all indicated teaching. Where the aggregate is over twenty-one overlapping of teaching is indicated. Scores under twenty-one do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXI

GROUP II INTERMEDIATE
GROWTH AND DEVELOPMENT
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Body Function	64.1
2	Body Structure	60.4
3	Parts of the Body	58.5
4	Right Amount of Sleep	52.8
5	Circulatory System	52.8
6	Respiratory System	49.6
7	Regular Sleeping Habits	45.1
8	Exercise and Growth and Development	39.6
9	Rest and Growth and Development	39.6
10	Function of Physical Examinations	26.4
11	Joy of Feeling Fit	22.6
12	Hobbies, Recreation and Relaxation	18.8
13	Change of Activity Gives Rest	18.8
14	Technique of Relaxation	17.0
15	Fatigue and Nervous Habits	17.0
16	Family Resemblances	15.1
17	Athletic Training	11.3
18	Variations in Growth	9.5
19	Laws of Heredity	9.5
20	Twins	5.7

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXII

GROUP II INTERMEDIATE
GROWTH AND DEVELOPMENT
TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Hobbies, Recreation and Relaxation	28.3
2	Change of Activity Gives Rest	18.8
3	Right Amount of Sleep	17.0
4	Rest and Growth and Development	17.0
5	Regular Sleeping Habits	15.1
6	Exercise and Growth and Development	15.1
7	Joy of Feeling Fit	11.2
8	Variations in Growth	9.5
9	Fatigue and Nervous Habits	7.6
10	Family Resemblances	7.6
11	Body Structure	3.7
12	Technique of Relaxation	5.7
13	Athletic Training	5.7
14	Body Function	3.8
15	Parts of Body	3.8
16	Circulatory System	3.8
17	Respiratory System	3.8
18	Function of Physical Examinations	1.9
19	Laws of Heredity	0.0
20	Twins	0.0

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXIII

GROUP II INTERMEDIATE
GROWTH AND DEVELOPMENT
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Hobbies, Recreation and Relaxation	49.9
2	Joy of Feeling Fit	49.9
3	Right Amount of Sleep	43.4
4	Exercise and Growth and Development	43.4
5	Athletic Training	43.4
6	Regular Sleeping Habits	39.6
7	Change of Activity Gives Rest	39.6
8	Technique of Relaxation	39.6
9	Rest and Growth and Development	32.0
10	Body Structure	26.4
11	Function of Physical Examinations	24.5
12	Fatigue and Nervous Habits	24.5
13	Respiratory System	32.6
14	Circulatory System	20.8
15	Body Function	17.0
16	Parts of Body	17.0
17	Variations in Growth	14.2
18	Family Resemblances	7.6
19	Twins	7.6
20	Laws of Heredity	8.7

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXIV

GROUP II INTERMEDIATE
GROWTH AND DEVELOPMENT
TAUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Right Amount of Sleep	28	9	23	60
2	Regular Sleeping Habits	24	8	21	53
3	Exercise & Growth & Development	21	8	23	52
4	Hobbies, Recreation & Relaxation	10	15	26	51
5	Body Structure	32	3	14	49
6	Rest & Growth & Development	21	9	17	47
7	Body Function	34	2	9	45
8	Joy of Feeling Fit	12	6	26	44
9	Parts of the Body	31	2	9	42
10	Circulatory System	28	2	11	41
11	Change of Activity Gives Rest	10	10	21	41
12	Respiratory System	26	2	12	40
13	Technique of Relaxation	9	3	21	33
14	Athletic Training	6	3	23	32
15	Function of Physical Examinations	14	1	13	28
16	Fatigue and Nervous Habits	9	4	13	26
17	Variations in Growth	5	5	7	17
18	Family Resemblances	8	4	4	16
19	Laws of Heredity	5	0	3	8
20	Twins	3	0	4	7

Fifty-three teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all reported teachings. Where the aggregate is over fifty-three overlapping of teaching is indicated. Scores under fifty-three do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXV

GROUP III PRIMARY
PROTECTION AND CONTROL OF DISEASE
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Care of Teeth and Gums	33.3
2	Drinking Plenty of Water	28.6
3	Choice of Foods	28.6
4	Prevention of Colds	28.6
5	Disease and Filth	28.6
6	Eating Habits	23.8
7	Necessity for Chewing Well	23.8
8	Regular Visits to Dentist	23.8
9	Effect of Food on the Body	23.8
10	Basic Foods	19.0
11	Vaccination and Immunigation	19.0
12	Prevention of Disease	19.0
13	Disease and Good Condition	14.2
14	Prevention of Infection	14.2
15	Control of Disease	14.2
16	Fads and Superstitions	14.2
17	Conquest of Disease	14.2
18	Tooth Structure	14.2
19	Nature and Cause of Epidemics	14.2
20	Rest and Quiet as Digestive Aids	9.5
21	Public Sanitation	9.5
22	Development of Teeth	9.5
23	Body Resistance and Disease	4.9
24	Where to Obtain Medical Advice	4.8
25	Effects of Tea, Coffee, Cola, Etc.	4.8
26	Effects of Tobacco	4.8
27	Effects of Alcohol	4.8
28	Recent Medical Developments	4.8
29	Public Health Agencies	0.0
30	Types of Dental Correction	0.0
31	Effect of Headache Remedies	0.0
32	Effect of Sleeping Tablets	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXVI

 GROUP III PRIMARY
 PROTECTION AND CONTROL OF DISEASE
 TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Care of Teeth and Gums	47.6
2	Eating Habits	47.6
3	Drinking Plenty of Water	38.0
4	Choice of Foods	38.0
5	Prevention of Colds	38.0
6	Disease and Filth	38.0
7	Necessity for Chewing Well	33.3
8	Basic Foods	33.3
9	Effect of Food on the Body	33.3
10	Rest and Quiet as Digestive Aids	28.6
11	Regular Visits to Dentist	23.8
12	Vaccination and Immunization	23.8
13	Public Sanitation	23.8
14	Public Health Agencies	23.8
15	Prevention of Disease	19.0
16	Disease and Good Condition	19.0
17	Control of Disease	14.2
18	Fads and Superstitions	14.2
19	Where to Obtain Medical Advice	14.2
20	Body Resistance and Disease	14.2
21	Effects of Tea, Coffee, Cola, Etc.	14.2
22	Effects of Tobacco	14.2
23	Effects of Alcohol	14.2
24	Prevention of Infection	9.5
25	Conquest of Disease	9.5
26	Development of Teeth	4.8
27	Tooth Structure	4.8
28	Nature and Cause of Epidemics	4.8
29	Types of Dental Correction	0.0
30	Recent Medical Developments	0.0
31	Effect of Headache Remedies	0.0
32	Effect of Sleeping Tablets	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXVII

GROUP III PRIMARY
PROTECTION AND CONTROL OF DISEASE
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Care of Teeth and Gums	52.3
2	Eating Habits	52.3
3	Regular Visits to Dentist	42.3
4	Drinking Plenty of Water	38.0
5	Choice of Foods	38.0
6	Prevention of Colds	38.0
7	Necessity for Chewing Well	38.0
8	Vaccination and Immunization	38.0
9	Basic Foods	33.3
10	Disease and Filth	23.8
11	Effect of Food on the Body	23.8
12	Prevention of Disease	23.8
13	Rest and Quiet as Digestive Aids	23.7
14	Prevention of Infection	19.0
15	Development of Teeth	19.0
16	Public Health Agencies	19.0
17	Public Sanitation	14.2
18	Where to Obtain Medical Advice	14.2
19	Tooth Structure	14.2
20	Disease and Good Condition	9.5
21	Control of Disease	9.5
22	Fads and Superstitions	9.5
23	Conquest of Disease	9.5
24	Body Resistance and Disease	9.5
25	Nature and Cause of Epidemics	9.5
26	Effects of Tea, Coffee, Cola, Etc.	9.5
27	Effects of Tobacco	4.8
28	Types of Dental Correction	4.8
29	Effect of Headache Remedies	4.8
30	Effect of Alcohol	0.0
31	Recent Medical Developments	0.0
32	Effect of Sleeping Tablets	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXVIII
GROUP III PRIMARY
PROTECTION AND CONTROL OF DISEASE
TAUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Care of Teeth and Gums	7	10	11	28
2	Eating Habits	5	10	11	26
3	Drinking Plenty of Water	6	8	8	22
4	Choice of Foods	6	8	8	22
5	Prevention of Colds	6	8	8	22
6	Necessity for Chewing Well	5	7	8	20
7	Regular Visits to Dentist	5	5	9	19
8	Disease and Filth	6	8	5	19
9	Basic Foods	4	7	7	18
10	Effect of Food on the Body	5	7	5	17
11	Vaccination and Immunization	4	5	8	17
12	Prevention of Disease	4	4	5	13
13	Rest and Quiet as Digestive Aids	2	6	5	13
14	Public Sanitation	2	5	3	10
15	Disease and Good Condition	3	4	2	9
16	Prevention of Infection	3	2	4	9
17	Public Health Agencies	0	5	4	9
18	Control of Disease	3	3	2	8
19	Fads and Superstitions	3	3	2	8
20	Development of Teeth	2	1	4	7
21	Conquest of Disease	3	2	2	7
22	Where to Obtain Medical Advice	1	3	3	7
23	Tooth Structure	3	1	3	7
24	Body Resistance and Disease	1	3	2	6
25	Nature and Cause of Epidemics	3	1	2	6
26	Effects of Tea, Coffee, Cola, Etc.	1	3	2	6
27	Effects of Tobacco	1	3	1	5
28	Effects of Alcohol	1	3	0	4
29	Types of Dental Correction	0	0	1	1
30	Recent Medical Developments	1	0	0	1
31	Effect of Headache Remedies	0	0	1	1
32	Effect of Sleeping Tablets	0	0	0	0

Twenty-one teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all indicated teaching. Where the aggregate is over twenty-one overlapping of teaching is indicated. Scores under twenty-one do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS
TABLE XXIX
GROUP III INTERMEDIATE
PROTECTION AND CONTROL OF DISEASE
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Basic Foods	64.1
2	Effect of Food on the Body	62.2
3	Care of Teeth and Gums	58.3
4	Eating Habits	56.6
5	Prevention of Disease	56.6
6	Effect of Alcohol	54.7
7	Necessity for Chewing Well	54.7
8	Drinking Plenty of Water	52.8
9	Effects of Tobacco	52.8
10	Effects of Tea, Coffee, Cola, Etc.	52.8
11	Choice of Foods	52.8
12	Conquest of Disease	50.9
13	Disease and Filth	50.9
14	Regular Visits to Dentist	49.9
15	Tooth Structure	49.9
16	Rest and Quiet as Digestive Aids	47.0
17	Development of Teeth	45.1
18	Prevention of Colds	39.6
19	Vaccination and Immunization	39.6
20	Control of Disease	39.6
21	Fads and Superstitions	39.6
22	Disease and Good Condition	37.7
23	Public Sanitation	37.7
24	Body Resistance and Disease	37.7
25	Prevention of Infection	32.0
26	Nature and Cause of Epidemics	32.0
27	Where to Obtain Medical Advice	26.4
28	Public Health Agencies	24.5
29	Types of Dental Correction	24.5
30	Effects of Headache Remedies	22.7
31	Recent Medical Developments	20.8
32	Effect of Sleeping Tablets	18.8

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXX

 GROUP III INTERMEDIATE
 PROTECTION AND CONTROL OF DISEASE
 TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1.	Conquest of Disease	28.3
2	Nature and Cause of Epidemics	24.5
3	Fads and Superstitions	22.7
4	Eating Habits	18.8
5	Effects of Tobacco	18.8
6	Control of Disease	18.8
7	Public Sanitation	17.0
8	Disease and Filth	16.9
9	Prevention of Colds	15.1
10	Effect of Alcohol	15.1
11	Effect of Tea, Coffee, Cola, Etc.	15.1
12	Disease and Good Condition	15.1
13	Basic Foods	13.2
14	Necessity for Chewing Well	13.2
15	Prevention of Disease	13.2
16	Vaccination and Immunization	13.2
17	Care of Teeth and Gums	11.3
18	Drinking Plenty of Water	11.3
19	Effect of Food on the Body	11.3
20	Choice of Foods	11.3
21	Public Health Agencies	11.3
22	Prevention of Infection	9.5
23	Recent Medical Developments	9.5
24	Regular Visits to Dentist	7.6
25	Where to Obtain Medical Advice	7.6
26	Effect of Headache Remedies	7.6
27	Tooth Structure	5.7
28	Rest and Quiet as Digestive Aids	5.7
29	Body Resistance and Disease	5.7
30	Development of Teeth	3.8
31	Effect of Sleeping Tablets	3.8
32	Types of Dental Correction	1.9

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXI

GROUP III INTERMEDIATE
PROTECTION AND CONTROL OF DISEASE
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Prevention of Colds	54.7
2	Care of Teeth and Gums	50.9
3	Regular Visits to the Dentist	50.9
4	Prevention of Infection	41.5
5	Drinking Plenty of Water	37.7
6	Vaccination and Immunization	37.7
7	Eating Habits	35.8
8	Development of Teeth	35.8
9	Tooth Structure	32.0
10	Rest and Quiet as Digestive Aids	32.0
11	Necessity for Chewing Well	30.1
12	Control of Disease	30.1
13	Disease and Good Condition	30.1
14	Body Resistance and Disease	30.1
15	Where to Obtain Medical Advice	30.1
16	Types of Dental Correction	30.1
17	Basic Foods	28.3
18	Disease and Filth	28.3
19	Conquest of Disease	26.4
20	Effect of Food on the Body	26.4
21	Choice of Foods	26.4
22	Public Health Agencies	26.4
23	Effect of Alcohol	24.5
24	Effect of Tobacco	24.5
25	Effects of Tea, Coffee, Cola, Etc.	24.5
26	Public Sanitation	24.5
27	Prevention of Disease	22.6
28	Fads and Superstitions	20.8
29	Recent Medical Developments	20.8
30	Nature and Cause of Epidemics	17.0
31	Effect of Headache Remedies	9.5
32	Effect of Sleeping Tablets	5.7

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXII
 GROUP III INTERMEDIATE
 PROTECTION AND CONTROL OF DISEASE
 TAUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Care of Teeth and Gums	31	6	27	64
2	Eating Habits	30	10	19	59
3	Prevention of Colds	21	8	29	57
4	Regular Visits to Dentist	26	4	27	57
5	Conquest of Disease	27	15	14	56
6	Basic Foods	34	7	15	56
7	Drinking Plenty of Water	23	6	20	54
8	Effect of Food on the Body	33	6	14	53
9	Necessity for Chewing Well	29	7	16	52
10	Effect of Tobacco	23	10	13	51
11	Disease and Filth	27	9	15	51
12	Effects of Alcohol	29	8	13	50
13	Prevention of Disease	30	7	12	49
14	Effects of Tea, Coffee, Cola, Etc.	23	8	13	49
15	Vaccination and Immunization	21	7	20	48
16	Choice of Foods	23	6	14	48
17	Control of Disease	21	10	16	47
18	Tooth Structure	26	3	17	45
19	Rest & Quiet as Digestive Aids	25	3	17	45
20	Development of Teeth	24	2	19	45
21	Fads and Superstitions	21	12	11	44
22	Prevention of Infection	17	5	22	44
23	Disease and Good Condition	20	8	16	44
24	Public Sanitation	20	9	13	42
25	Nature and Cause of Epidemics	17	13	9	39
26	Body Resistance and Disease	20	3	16	39
27	Where to Obtain Medical Advice	14	4	16	34
28	Public Health Agencies	13	6	14	33
29	Types of Dental Correction	13	1	16	30
30	Recent Medical Developments	11	5	11	27
31	Effect of Headache Remedies	12	14	5	21
32	Effect of Sleeping Tablets	10	2	3	15

Fifty-three teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all reported teaching. Where the aggregate is over fifty-three overlapping of teaching is indicated. Scores under fifty-three do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXIII

GROUP IV PRIMARY
SAFETY AND FIRST AID
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Safety at Home	14.2
2	Care of Minor Injuries	14.2
3	Care of Major Injuries	14.2
4	Safety to and from School	9.5
5	Fire Safety	9.5
6	Water Safety	9.5
7	Accident and What to Do	9.5
8	Safety on the School Grounds	4.8
9	Bicycle Safety	4.8
10	Safety in the School Building	4.8
11	Automobile Safety	4.8
12	Waiting on the Sick	4.8
13	Symptoms and Various Injuries	4.8
14	Usual Signs of Illness	0.0
15	Procedures in Sudden Illness	0.0
16	Preparing Food for the Sick	0.0
17	Taking Temperature and Pulse	0.0
18	Industrial Safety	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXIV

GROUP IV PRIMARY
SAFETY AND FIRST AID
TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Safety To and From School	76.5
2	Safety on the School Grounds	71.4
3	Safety at Home	71.4
4	Bicycle Safety	66.6
5	Fire Safety	66.6
6	Safety in the School Building	61.9
7	Automobile Safety	54.7
8	Water Safety	42.8
9	Care of Minor Injuries	23.8
10	Accident and What to Do	19.0
11	Care of Major Injuries	14.2
12	Waiting on the Sick	4.8
13	Procedures in Sudden Illness	4.8
14	Symptoms and Various Injuries	0.0
15	Usual Signs of Illness	0.0
16	Preparing Food for the Sick	0.0
17	Taking Temperature and Pulse	0.0
18	Industrial Safety	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXV

GROUP IV PRIMARY
SAFETY AND FIRST AID
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Safety To and From School	54.7
2	Safety on the School Grounds	52.3
3	Bicycle Safety	52.3
4	Safety at Home	38.0
5	Fire Safety	38.0
6	Safety in the School Building	38.0
7	Automobile Safety	38.0
8	Care of Minor Injuries	38.0
9	Water Safety	33.3
10	Accident and What to Do	19.0
11	Usual Signs of Illness	9.5
12	Symptoms and Various Injuries	4.8
13	Care of Major Injuries	0.0
14	Waiting on the Sick	0.0
15	Procedures in Sudden Illness	0.0
16	Preparing Food for the Sick	0.0
17	Taking Temperature and Pulse	0.0
18	Industrial Safety	0.0

The column on the right gives the percentage of the twenty-one teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXVI

GROUP IV PRIMARY
SAFETY AND FIRST AID
TAUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Safety To and From School	2	16	12	30
2	Safety on the School Grounds	1	15	11	27
3	Bicycle Safety	1	14	11	26
4	Safety at Home	3	15	8	26
5	Fire Safety	2	14	8	24
6	Safety in the School Building	1	13	8	22
7	Automobile Safety	1	12	8	21
8	Water Safety	2	9	7	18
9	Care of Minor Injuries	3	5	8	16
10	Accident and What to Do	2	4	4	10
11	Care of Major Injuries	3	3	0	6
12	Waiting on the Sick	1	1	0	2
13	Symptoms and Various Injuries	1	0	1	2
14	Usual Signs of Illness	0	0	2	2
15	Procedures in Sudden Illness	0	1	0	1
16	Preparing Food for the Sick	0	0	0	0
17	Taking Temperature and Pulse	0	0	0	0
18	Industrial Safety	0	0	0	0

Twenty-one teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all indicated teaching. Where the aggregate is over twenty-one overlapping of teaching is indicated. Scores under twenty-one do not necessarily denote inadequate coverage.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXVII

GROUP II INTERMEDIATE
SAFETY AND FIRST AID
TAUGHT IN SCIENCE

Rank	Topics	Percentages
1	Care of Minor Injuries	54.7
2	Accident and What to Do	41.5
3	Safety To and From School	39.6
4	Safety on the School Grounds	35.8
5	Safety at Home	39.5
6	Safety in the School Buildings	37.7
7	Bicycle Safety	37.7
8	Fire Safety	35.8
9	Water Safety	35.8
10	Automobile Safety	26.4
11	Care of Major Injuries	26.4
12	Usual Signs of Illness	24.5
13	Symptoms of Various Injuries	20.8
14	Procedures in Sudden Illness	18.8
15	Preparing Food for the Sick	15.1
16	Taking Temperature and Pulse	15.1
17	Waiting on the Sick	11.3
18	Industrial Safety	9.5

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in science classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XXXVIII

GROUP IV INTERMEDIATE
SAFETY AND FIRST AID
TAUGHT IN SOCIAL STUDIES

Rank	Topics	Percentages
1	Safety To and From School	39.6
2	Safety in the School Building	39.6
3	Safety on the School Grounds	35.8
4	Bicycle Safety	32.0
5	Safety at Home	30.1
6	Fire Safety	28.3
7	Automobile Safety	28.3
8	Water Safety	24.5
9	Industrial Safety	11.3
10	Accident and What to Do	9.5
11	Care of Minor Injuries	7.6
12	Usual Signs of Illness	7.6
13	Care of Major Injuries	5.7
14	Waiting on the Sick	5.7
15	Symptoms of Various Injuries	1.9
16	Procedures in Sudden Illness	1.9
17	Preparing Food for the Sick	1.9
18	Taking Temperature and Pulse	1.9

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in social studies classes.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XIX

GROUP IV INTERMEDIATE
SAFETY AND FIRST AID
TAUGHT IN OTHER AREAS

Rank	Topics	Percentages
1	Safety on the School Grounds	86.8
2	Safety To and From School	84.9
3	Bicycle Safety	75.5
4	Safety in the School Building	71.7
5	Safety at Home	69.0
6	Fire Safety	69.8
7	Automobile Safety	62.2
8	Water Safety	60.4
9	Care of Minor Injuries	50.4
10	Accident and What to Do	37.7
11	Care of Major Injuries	28.3
12	Industrial Safety	24.5
13	Symptoms of Various Injuries	20.8
14	Usual Signs of Illness	18.8
15	Waiting on the Sick	13.2
16	Procedures in Sudden Illness	11.3
17	Preparing Food for the Sick	11.3
18	Taking Temperature and Pulse	7.6

The column on the right gives the percentage of the fifty-three teachers who reported that this group of topics was covered in areas other than science or social studies.

GRADE AND SUBJECT PLACEMENT OF TOPICS

TABLE XL

GROUP IV INTERMEDIATE
SAFETY AND FIRST AID
THUGHT IN ALL AREAS

Rank	Topics	Science	Social Studies	Other Areas	Total All Areas
1	Safety To and From School	21	21	45	87
2	Safety on the School Grounds	21	19	46	86
3	Safety in the School Building	20	21	38	79
4	Bicycle Safety	20	17	40	77
5	Safety at Home	21	16	37	74
6	Fire Safety	19	15	37	71
7	Water Safety	19	13	32	64
8	Automobile Safety	14	15	33	62
9	Care of Minor Injuries	29	4	27	60
10	Accident and What to Do	22	5	20	47
11	Care of Major Injuries	14	3	15	32
12	Industrial Safety	5	6	13	24
13	Usual Signs of Illness	13	4	10	27
14	Symptoms of Various Injuries	11	1	11	23
15	Procedures in Sudden Illness	10	1	6	17
16	Waiting on the Sick	6	3	7	16
17	Preparing Food for the Sick	8	1	6	15
18	Taking Temperature and Pulse	8	1	4	14

Fifty-three teachers returned questionnaires. The first three columns on the right give the number of teachers checking topics as being taught in areas indicated at the top of columns. The last column is the aggregate of all reported teaching. Where the aggregate is over fifty-three overlapping of teaching is indicated. Scores under fifty-three do not necessarily denote inadequate coverage.

COMPARISON OF INTEREST WITH TEACHING RANK AND GRADE PLACEMENT

TABLE XLI
SUMMARY OF TABLES I TO X
GROUP I PERSONAL AND GROUP HYGIENE

Topics	Interest		Teaching							
	Interest Rank Primary Grades	Interest Rank Intermediate Grades	Teaching Rank Primary - All Areas	Teaching Rank Inter- mediate - All Areas	Teaching Rank in Primary Science	Teaching Rank in Intermediate Science	Teaching Rank in Primary Social Studies	Teaching Rank in Inter- mediate Social Studies	Teaching Rank in Other Primary Areas	Teaching Rank in Other Intermediate Areas
Personal Cleanliness	1	1	1	1	1	1	3	2	2	8
Use of Handkerchief	2	4	11	12	5	7	17	13	5	12
Getting Along with Contemporaries	3	5	3	3	11	18	2	1	4	3
Care of Eyes, Ears and Nose	4	15	8	13	2	2	12	17	10	21
Public Sanitary Practices	5	9	9	9	6	8	8	7	11	13
Eating Manners	6	17	4	11	9	12	5	11	6	10
Good Grooming	7	2	13	10	13	13	10	9	12	7
Developing Wide Interests	8	10	7	4	4	11	11	5	9	4
Rising and Bed Time Procedures	9	22	2	16	10	10	1	16	3	16
Correct Clothing	10	7	12	8	7	9	6	8	16	9
Regard for Others	11	12	6	5	12	17	4	6	8	5
Getting Along with Adults	12	13	14	7	17	21	7	4	13	2
Poise and Self Confidence	13	6	10	2	16	15	9	3	7	1
Family Adjustments	14	25	17	23	22	27	15	19	20	20
Seeking the Advice of Elders	15	14	15	15	20	23	13	10	14	11
Facilities for Group Recreation	16	3	19	18	23	26	18	12	21	14
Importance of Good Posture	17	11	5	6	3	3	16	14	1	6
Care of Normal Skin	18	18	18	14	14	5	19	18	17	19
Public Health Services	19	8	16	17	21	16	14	15	15	17
How Life Begins	20	20	22	22	8	6	23	22	23	24
Care of Skin Disturbances	21	19	21	19	15	14	22	21	19	18
Boy-Girl Relations	22	16	20	21	18	19	20	20	18	15
Studying Human Growth	23	21	23	20	19	4	21	24	22	23
Use of Cosmetics	24	24	24	25	24	24	24	23	24	25
Menstruation	25	26	25	27	25	25	25	27	25	26
Adolescent Changes	26	27	26	24	26	22	26	26	26	22
Average Longevity	27	23	27	26	27	20	27	25	27	27

Black Figures - Primary Grades

Red Figures - Intermediate Grades

-- No Interest

--- No Teaching

COMPARISON OF INTEREST WITH TEACHING RANK AND GRADE PLACEMENT

TABLE XLII
SUMMARY OF TABLES XI TO XX
GROUP II GROWTH AND DEVELOPMENT

Topics	Interest		Teaching							
	Interest Rank Primary Grades	Interest Rank Intermediate Grades	Teaching Rank Primary - All Areas	Teaching Rank Inter- mediate - All Areas	Teaching Rank in Primary Science	Teaching Rank in Intermediate Science	Teaching Rank in Primary Social Studies	Teaching Rank in Inter- mediate Social Studies	Teaching Rank in Other Primary Areas	Teaching Rank in Other Intermediate Areas
Exercise and Growth and Development	1	2	2	3	4	8	6	6	1	4
Right Amount of Sleep	2	5	1	1	1	4	1	3	2	3
Regular Sleeping Habits	3	4	4	2	3	7	4	5	4	6
Rest and Growth and Development	4	12	3	6	2	9	3	4	3	9
Joy of Feeling Fit	5	6	7	8	8	11	7	7	7	2
Change of Activity Gives Rest	6	7	6	11	6	13	5	2	8	7
Hobbies, Recreation and Relaxation	7	3	5	4	5	12	2	1	5	1
Variation in Growth	8	10	8	17	7	18	8	8	10	17
Athletic Training	9	1	10	14	15	17	13	13	6	5
Body Function	10	9	16	7	16	1	11	14	16	15
Twins	11	18	11	20	10	20	10	20	13	19
Technique of Relaxation	12	15	9	13	9	14	9	12	9	8
Parts of the Body	13	8	19	9	19	3	19	15	19	16
Body Structure	14	11	13	5	12	2	15	11	12	10
Fatigue and Nervous Habits	15	17	15	16	14	15	17	9	15	12
Laws of Heredity	16	20	20	19	20	19	20	19	20	20
Family Resemblance	17	18	17	18	17	16	12	10	17	18
Circulatory System	18	13	18	10	18	5	18	16	18	14
Respiratory System	19	14	14	12	13	6	16	17	14	13
Function of Physical Examination	20	16	12	15	11	10	14	18	11	11

Black Figures - Primary Grades Red Figures - Intermediate Grades
 -- No Interest --- No Teaching

COMPARISON OF INTEREST WITH TEACHING RANK AND GRADE PLACEMENT

TABLE XLIII
SUMMARY OF TABLES XXI TO XXX
GROUP III PROTECTION AND CONTROL OF DISEASE

Topics	Interest		Teaching							
	Interest Rank Primary Grades	Interest Rank Intermediate Grades	Teaching Rank Primary - All Areas	Teaching Rank Inter- mediate - All Areas	Teaching Rank in Primary Science	Teaching Rank in Intermediate Science	Teaching Rank in Primary Social Studies	Teaching Rank in Inter- mediate Social Studies	Teaching Rank in Other Primary Areas	Teaching Rank in Other Inter. Areas
Care of Teeth and Gums	1	1	1	1	1	3	1	17	1	2
Drinking Plenty of Water	2	2	3	7	2	8	3	18	4	5
Regular Visits to Dentist	3	5	7	4	8	14	11	24	3	3
Vaccination and Immunization	4	4	11	15	19	19	12	16	8	6
Prevention of Colds	5	3	5	3	4	18	5	9	6	1
Eating Habits	6	6	2	2	6	4	2	4	2	7
Necessity for Chewing Well	7	16	6	10	7	7	7	14	7	11
Effect of Food on Body	8	14	10	8	9	2	9	19	11	20
Prevention of Disease	9	9	12	13	12	15	15	15	12	27
Choice of Foods	10	13	4	16	3	11	4	20	5	21
Basic Foods	11	7	9	6	10	1	8	13	9	7
Rest and Quiet as Digestive Aids	12	22	13	19	20	16	10	28	13	10
Disease and Filth	13	11	8	12	5	13	6	8	10	18
Public Health Agencies	14	22	23	28	29	28	14	21	16	22
Prevention of Infection	15	8	16	22	14	25	24	22	14	4
Disease and Good Condition	16	17	15	23	13	22	16	12	20	13
Public Sanitation	17	27	14	24	21	23	13	7	17	26
Where to Obtain Medical Advice	18	15	21	17	24	27	19	25	18	15
Conquest of Disease	19	12	20	5	17	12	25	1	23	19
Control of Disease	20	21	17	16	15	20	17	6	21	12
Nature and Cause of Epidemics	21	29	25	25	19	26	28	2	25	30
Tooth Structure	22	18	22	18	18	15	27	27	19	9
Development of Teeth	23	19	19	20	22	17	26	30	15	8
Effects of Tea, Coffee, Cola	24	23	26	14	25	10	21	11	26	25
Effects of Tobacco	25	24	27	11	26	9	22	5	27	24
Effects of Alcohol	26	25	28	9	27	6	23	10	30	23
Body Resistance and Disease	27	26	24	26	23	24	20	29	24	14
Types of Dental Correction	28	28	29	29	30	29	29	32	28	16
Fads and Superstitions	29	10	18	21	16	21	18	3	22	28
Recent Medical Developments	30	30	30	30	28	31	30	23	31	29
Effect of Headache Remedies	31	32	31	31	31	30	31	26	29	31
Effects of Sleeping Tablets	32	31	32	32	32	32	32	31	32	32

Black Figures - Primary Grades
-- No Interest

Red Figures - Intermediate Grades
--- No Teaching

COMPARISON OF INTEREST WITH TEACHING RANK AND GRADE PLACEMENT

TABLE XLIV
SUMMARY OF TABLES XXXI TO XL
GROUP IV SAFETY AND FIRST AID

Topics	Interest		Teaching							
	Interest Rank Primary Grades	Interest Rank Intermediate Grades	Teaching Rank Primary - All Areas	Teaching Rank Inter- mediate - All Areas	Teaching Rank in Primary Science	Teaching Rank in Intermediate Science	Teaching Rank in Primary Social Studies	Teaching Rank in Inter- mediate Social Studies	Teaching Rank in Other Primary Areas	Teaching Rank in Other Intermediate Areas
Safety To and From School	1	1	1	1	4	3	1	1	1	2
Bicycle Safety	2	5	3	4	9	7	4	4	3	3
Safety in School Building	3	3	6	3	10	6	6	2	6	4
Safety on School Grounds	4	2	2	2	8	4	2	3	2	1
Fire Safety	5	4	5	6	5	8	5	6	5	6
Safety at Home	6	7	4	5	1	5	3	5	4	5
Care of Minor Injuries	7	6	9	9	2	1	9	11	3	9
Automobile Safety	8	9	7	8	11	10	7	7	7	7
Water Safety	9	8	8	7	6	9	8	8	9	8
Accident and What to Do	10	10	10	10	7	2	10	10	10	10
Care of Major Injuries	11	11	11	11	3	11	11	13	13	11
Usual Signs of Illness	12	13	14	13	14	12	15	12	11	14
Waiting on the Sick	13	17	12	16	12	17	12	14	14	15
Procedures in Sudden Illness	14	16	15	15	15	14	13	16	15	16
Symptoms of Various Injuries	15	12	13	14	13	13	14	15	12	13
Preparing Food for the Sick	16	18	16	17	16	15	16	17	16	17
Taking Temperature and Pulse	17	15	17	18	17	16	17	18	17	18
Industrial Safety	18	14	18	12	18	18	18	9	18	12

Black Figures - Primary Grades

Red Figures - Intermediate Grades

-- No Interest

--- No Teaching

CHAPTER VI

ANALYSIS OF INTEREST AS COMPARED TO TEACHING

In studying the data analytically it is noticed that there are only four out of the twenty-seven topics in Group I that are of no interest to the pupils in the primary grades. All topics in this group are of some interest to the intermediate grade pupils. The data also shows that the topics which are of no interest are not given teaching consideration in any teaching area in the primary grades while all topics are given some consideration in all teaching areas covered in the intermediate grades.

If we compare the interest rank of the first nine (the first one-third) of these topics with their teaching ranks we will notice that seven of them rank ninth or better in total teaching, six of the nine rank between first and ninth in science teaching, and five have similar rank in both social studies teaching and in other teaching areas. By similar comparison as we consider the last one-third, or the lowest ranking nine, of these topics and compare interest rank with teaching rank we find that eight out of the nine lowest in interest are also in the lowest one third in total teaching. Continuing the comparison we find that six of the same nine topics in the area of science teaching, seven in social studies and seven in other teaching

areas rank similarly. The same general pattern is true in the middle one-third of the topics.

By comparing these same topics in like manner at the intermediate grade level we find that in total teaching four out of nine topics rank in the upper one third, four in the middle one third and eight in the lower one third of the rankings under total teaching.

In science teaching there are four topics in the upper, two in the middle and five in the lower one third.

In social studies the score is five, four and eight and in other subject areas four, three and six.

This shows that in Group I approximately sixty-eight per cent of the teaching closely follows interest rank in the primary grades. Similarly fifty and nine-tenths per cent of the teaching in the intermediate grades closely follows interest rank.

These percentages are determined by dividing the number of topics which rank between one and nine (within the upper one third) in each of the three teaching area columns and the total teaching column by thirty-six (the total number of topics in the upper one third of the four columns). The same procedure is followed for the middle and lower thirds, thus giving percentages by thirds of the topics. These percentages are averaged to give the final percentage by which teaching in a given area follows interest.

In comparing teaching and interest rank in Group II the group of twenty topics is divided into the upper ten and lower ten. Of the topics ranking one to ten in interest to primary pupils we find nine in total teaching,

eight in science teaching, eight in social studies teaching and eight in other teaching areas ranking between one and ten. Of the topics ranking one to ten in interest to the intermediate pupils we find seven in total teaching, five in science teaching and seven each in social studies and in other subject teaching areas ranking between first and tenth.

The situation is exactly the same in the second ten items. This shows that in Group II eighty-two and one half per cent of the primary teaching follows the interest pattern and the same holds true for sixty-five per cent of the teaching in the intermediate grades for this group.

By dividing the topics in Group III into thirds and figuring interest as related to teaching we find that the primary teaching follows interest by approximately eighty-two per cent and intermediate grade teaching follows intermediate grade interest by about seventy-six per cent.

A similar comparison of the items in Group IV shows that both primary and intermediate teaching follow interest ranking by ninety-four per cent.

By computing the average for the four groups it is seen that overall primary teaching follows evidences of interest by about ten per cent more closely than does intermediate teaching, the average percentages being eighty-one and six tenths per cent and seventy-one and five tenths per cent respectively.

CHAPTER VII

CONCLUSION

A study of the charts for all four groups will show that teaching rank tends to follow rather generally the interest rank. There are a few major discrepancies that should be noted before any concerted effort is made toward revision of curriculum.

As long as interest rank and total teaching rank fall within corresponding thirds of their respective ranks there is evidence that the topic has been satisfactorily covered in one or more of the teaching areas. There are a few instances where teaching and interest rank vary widely. For example, in Group I the Importance of Good Posture ranks seventeenth in primary grade interest yet fifth in total teaching. The variation is great enough to offer food for thought. Any topic out of a list of twenty-seven in the health instruction curriculum which ranks as low as seventeenth in interest and as high as an average of about sixth should be investigated. The topic Facilities for Group Recreation, by the same token, should have some attention on the intermediate level as it shows third in interest yet eighteenth in total teaching rank and it seems that a subject which ranks that high in interest should have a more prominent place in teaching.

In Groups II, III and IV the primary teaching rank follows so closely the interest rank that no comment seems advisable. The same pattern is traceable in Groups II and IV for the intermediate grades but Group III shows a few variations in interest and teaching rank. These variations appear in Vaccination and Immunization and Prevention of Infection where interest rank is fourth and eighth and total teaching rank is fifteenth and twenty-second respectively. There seems to be no definite reason for such a variation. In the two topics Effect of Tobacco and Effect of Alcohol the interest is low and the teaching comparatively high. The reason for this variation is apparent when we understand that the teaching of these two subjects is required by the California Education Code.¹

¹ Supra pp. 3 f.

CHAPTER VIII

SUMMARY

The purpose of this study as stated is to determine the status of health teaching in the elementary schools of the Stockton Unified School District.

According to the returns received on the questionnaires it is apparent that health teaching generally follows rather closely pupil interest and that teachers are attempting to bring about satisfactory health knowledge, habits and attitudes. This point is made clear by the fact that all but one of the ninety-seven topics are covered in some degree in the intermediate grades and only four out of the total topics are omitted from primary teaching. Wherever omission of teaching occurs there is lack of pupil interest due to the relationship between the topic title and the growth and development of children. This is understandable when it is noted that the four topics in which teaching is omitted are the "use of cosmetics," "menstruation," "adolescent changes" and "average longevity," all of which are topics that do not offer health problems to the age group found in the first six grades.

Further evidence of attempts to cover all topics is apparent by the degree of overlapping in the teaching of many of the topics. The ranking of topics as recorded in

charts XLI, XLII, XLIII and XLIV indicates some duplication of teaching by both grade and teaching area. For example, in chart XLI "personal cleanliness" is ranked first, second or third in teaching in three out of four areas. In chart XLIII "care of teeth and gums" ranks similarly. In the majority of the topics whether their rank is high or low there appears to be a considerable degree of overlapping and duplication of teaching.

This condition may be educationally sound and it may also create disinterest and dislike for any topics resembling health instruction. If repetition and overlapping are offered in review only or only as health instruction is related to the teaching unit being covered a great deal of sound teaching should result. On the other hand if health topics are completely covered and re-covered in several teaching areas children rapidly lose interest and the full value of the teaching is lost. It is the purpose of this study to report existing practices and the data shows that teaching occurs in most of the desirable health topics.

The report on text and supplementary books shows that the schools are adequately supplied with the State Series of health books and that supplementary texts are adequate for grades five and six. Supplementary books for the first four grades are inadequate and teachers are forced to use books from other teaching areas for available health instruction materials.

The results of the spot check on health knowledge offered only a minor sampling of the entire elementary school population and should only be interpreted as an indication of the effectiveness of present health teaching.

As a result of this study the following recommendations are offered:

1. That additional studies as to the effectiveness of health teaching be conducted.
2. That large variations in health interest and teaching be studied and properly adjusted.
3. That ways and means of bringing the health knowledge of Stockton Elementary children up to the established national norms be studied.
4. That supplementary health instruction books be provided for grades one through four.
5. That health instruction in the elementary schools be coordinated with that of the high schools and the high school instruction with that of the college.
6. That effort be directed toward the development of a teaching guide that would tend to eliminate the apparent duplication of health teaching in the elementary schools of the Stockton Unified School District.

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Smith, Helen N., and Helen L. Coops, Physical and Health Education. San Francisco: American Book Company, 1938. 323 pp.

Strang, Ruth, Subject Matter in Health Education. New York: Teachers College, Columbia University, 1926. 108 pp.

Strang, Ruth, and Dean F. Smiley, The Role of the Teacher in Health Education. New York: The MacMillan Company, 1941. 359 pp.

Turner, C. E., School Health and Health Education. St. Louis: C. V. Mosby, 1947. 457 pp.

Twentieth Yearbook, American Association of School Administrators, Health in Schools. Washington, D. C.: National Education Association, 1942. 544 pp.

APPENDIX I

STOCKTON UNIFIED SCHOOL DISTRICT
Elementary Schools

A STUDY OF THE STATUS OF HEALTH TEACHING

At the request of the Deputy Superintendent's office, the Department of Health, Physical Education and Recreation is conducting a study to determine the present status of health instruction in the Elementary Schools of the Stockton Unified School District. Your kind indulgence and cooperation is therefore asked in filling out the attached check list.

In giving consideration to the various items, please consider each in the light of your total years of experience in the Stockton system. Your answers will be considered as coming from a member of an accredited professional jury.

The results of the study will be used as a step toward the coordination and improvement of health teaching on all grade levels in our system.

When the study is complete, a copy of the summary will be made available to you through the Central Library.

Health Interest and Teaching Check List
(For Teachers)

School _____

Grade _____

INSTRUCTIONS:

- A. Directions For Pupil Interest Inventory: Fill in the spaces for school and grade. In column 1 check only those items in which you have observed a large number of instances of pupil interest. In column 2 check only those items about which you are uncertain as to customary pupil interest or dislike. In column 3 check only those items in which you have observed a large number of instances of pupil dislike. In columns 1 and 3, if items are of interest or dislike only to boys, write a B beside your check mark (✓B); if of interest or dislike only to girls, write a G beside your check mark (✓G).
- B. Direction For Location of Health Content Inventory: In column 4 check those items that are taught in science classes. In column 5 check those items that are taught in social studies classes. In column 6 list any other subject classes in which items are taught (such as art, music, etc.)

Evidences of Interest			Area in which Taught		
Posi- tive	Uncer- tain	Nega- tive	Sci- ence	Soc. St.	Other i.e.art, music, etc.

DEVELOPMENT OF PERSONALITY

1	2	3	4	5	6
		Poise and Self- Confidence			
		Getting Along with Contemporaries			
		Getting Along with Adults			
		Seeking the Advice of Elders			
		Developing Wide Interests			

KEEPING FIT

		Exercise and Growth and Development			
		Athletic Training			
		Joys of Feeling Fit			
		Circulatory System			
		Respiratory System			
		Function of Physical Examinations			

SOCIAL HEALTH

		Menstruation			
		Adolescent Changes			
		Boy-Girl Relationships			
		Regard for Others			
		Family Adjustments			
		How Life Begins			
		Studying Human Growth			
		Average Longevity			

Evidences of Interest			Area in which Taught		
Posi- tive	Uncer- tain	Nega- tive	Sci- ence	Soc. St.	Other i.e.art, music, etc.

HEREDITY AND EUGENCIS

1	2	3		4	5	6
			Family Resemblances			
			Laws of Heredity			
			Twins			

REST AND RELAXATION

			Technique of Relaxation			
			Change of Activity Gives Rest			
			Hobbies, Recreation and Relaxation			
			Fatigue and Nervous Habits			
			Right Amount of Sleep			
			Regular Sleeping Habits			
			Rest and Growth and Development			

DENTAL HYGIENE

			Care of Teeth and Gums			
			Tooth Structure Development of Teeth			
			Regular Visits to Dentist			
			Types of Correction			

Evidences of Interest

Posi- tive	Uncer- tain	Nega- tive
---------------	----------------	---------------

Area in which Taught

Sci- ence	Soc. St.	Other i.e.art, music, etc.
--------------	-------------	-------------------------------

NUTRITION

1	2	3		4	5	6
			Eating Habits			
			Necessity for Chewing Well			
			Drinking Plenty of Water			
			Rest and Quiet as Digestive Aids			
			Basic Foods			
			Choice of Foods			
			Effect of Food on the Body			

STIMULANTS AND NARCOTICS

			Effects of Tobacco			
			Effects of Alcohol			
			Effects of Tea, Coffee, Cola, etc.			
			Effect of Headache Remedies			
			Effect of Sleeping Tablets			

HOME NURSING

			Waiting on the Sick			
			Preparing Food for the Sick			
			Usual Signs of Illness			
			Taking Temperature and Pulse			
			Procedures in Sudden Illness			

Evidences of Interest			Area in which Taught		
Posi- tive	Uncer- tain	Nega- tive.	Sci- ence	Soc. St.	Other i.e.art, music, etc.

FIRST AID

1	2	3		4	5	6
			Care of Minor Injuries			
			Care of Major Injuries			
			Accident and What to Do			
			Symptoms and Various Injuries			

SAFETY

			Safety To and From School			
			Safety at Home			
			Safety in the School Building			
			Safety on the School Ground			
			Bicycle Safety			
			Automobile Safety			
			Water Safety			
			Fire Safety			
			Industrial Safety			

TEXT BOOKS

1. Are rooms adequately supplied with the State Health Series, according to reading ability?

(At least 1 for every 2 pupils) yes_____ no_____

2. Is the State Series Used? (Circle one)

- a. Often (Eight or more times per year)
- b. Occasionally (Three to seven times per year)
- c. Seldom (Once or twice per year)
- d. Never

3. List available supplementary health books

- 1.
- 2.
- 3.
- 4.
- 5.

4. Are supplementary health books adequate?

(5 or more per room) yes_____ no_____

5. Are supplementary health books used? (Circle one)

- a. Often (Eight or more times per year)
- b. Occasionally (Three to seven times per year)
- c. Seldom (Once or twice per year)
- d. Never

6. List other available books from which usable health teaching materials may be obtained (such as social studies, science, readers, etc.)

- 1.
- 2.
- 3.
- 4.
- 5.

APPENDIX II

APPENDIX

Available supplementary health books for primary grades listed on two or more questionnaires.

Charters, W. W., and others, "Health and Growth Series," Living Healthfully. 8 volumes, New York: The MacMillan Company, 1936. Book 4.

Towse, Anna B., and William S. Graw, Health Stories, Book 1. Chicago: Reilly and Lee Company, 1933. 144 pp.

Whitcomb, Charlotte T., and others, My Health Habits, 4 volumes. Chicago: Rank McNally Company, 1932.

Twenty-two miscellaneous health book titles were listed once for primary grades.

Other available books listed on two or more questionnaires from which usable health teaching materials may be obtained for primary grades.

Andreas, J. M., and others, Spic and Span. San Francisco: Ginn and Company, 1945. 98 pp.

Crabtree, Eunice K., Under the Roof. Sacramento, California: State Department of Education, 1946. 256 pp.

Stone, George, and Doris Noble, Wonderworld Readiness. New York: Charles Scribner's Sons, 1948. 96 pp.

Twenty-four miscellaneous titles were listed as other usable material for primary grades.

Available supplementary health books for intermediate grades listed on two or more questionnaires.

Andreas, John M., The Healthy Home and Community. 8 volumes, San Francisco: Ginn and Company, 1939.

Beauchamp, Wilbur L., and others, Discovering Our World. 3 volumes, Chicago: Scott, Foresman Company, 1947.

Frazier, G. W., and others, How and Why Club. New York: The L. W. Singer Company, Inc., 1949. 352 pp.

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Frazier, G. W., and others, How and Why Experiments. New York: The L. W. Singer Company, 1949. 384 pp.

Frazier, G. W., and others, The Seasons Pass. New York: The L. W. Singer Company, 1949. 288 pp.

Frazier, G. W., and others, Winter Comes and Goes. New York: The L. W. Singer Company, 1949. 224 pp.

Knox, Warren, and others, Wonderworld of Science. 5 volumes. New York: Charles Scribner's Sons, 1940.

Shacter, Helen, and W. W. Bauer, You. Chicago: Scott, Foresman Company, 1948. 288 pp.

Ninety miscellaneous health book titles were listed once.

Other available books, listed on two or more questionnaires, from which usable health teaching materials may be obtained for intermediate grades.

Almack, John C., A Clear Case. Palo Alto: Pacific Books, 1939. 156 pp.

Andreas, James M., "Safe and Healthy Living," Helping the Body in Its Work. Volume 7, 8 volumes, San Francisco: Ginn and Company, 1939.

Baruch, Dorothy, and Elizabeth Montgomery, The Girl Next Door. Chicago: Scott, Foresman Company, 1946. 256 pp.

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- Fowlkes, John C., and others, Healthy Growing. Philadelphia: John C. Winston Company, 1936. 216 pp.
- Leaf, Munro, Health Can Be Fun. Philadelphia: J. B. Lippincott Company, 1943. 55 pp.
- Leaf, Munro, Safety Can Be Fun. Toronto: McClelland and Company, 1928. 156 pp.
- Newmayer, S. Wier, Health Habits. New York: American Book Company, 1928. 156 pp.
- Turner, C. E., and George E. Collins, Health and Cleanliness. Boston: D. C. Heath and Company, 1932. 368 pp.

Seventy-eight miscellaneous titles were listed as other usable material for intermediate grades.

APPENDIX III

Manual of Directions*

GATES-STRANG HEALTH KNOWLEDGE TESTS

For Elementary Tests (Grades 3 to 8), Forms A, B, C

For Advanced Tests (Grades 7 to 12), Forms D, E, F

By ARTHUR I. GATES and RUTH STRANG

Published by Bureau of Publications, Teachers College
Columbia University, New York

THE Gates-Strang Health Knowledge Test in its revised form (1938) is designed for elementary school and high school. There are three forms (A, B, and C) of the Elementary Tests for Grades 3 to 8, and three forms (D, E, and F) of the Advanced Tests for Grades 7 to 12. Either the Elementary Tests or the Advanced Tests may be used in the junior high school grades, depending on the ability and health achievement of the particular group. If, in these grades, an emphasis on the less technical aspects of health knowledge is desired, the Elementary Tests would be the more appropriate. These tests, each comprising 60 questions of the five-options type, are closely equal in difficulty and make possible the repeated testing of health knowledge.

The items selected are based on extensive curriculum research involving an analysis of mortality, morbidity, and accident statistics, popular health sources, interests and needs of children of different ages, and courses of study and textbooks. Items from the original form of the test and a previous study of about five hundred exercises were incorporated in the present tests.

RELIABILITY OF THE TESTS

The three forms of the Elementary Tests were administered to the same pupils in grades 3 to 8 in a large city system and in a suburb. The coefficients of correlation based on 811 cases were:

Form A and B80
Form A and C76
Form B and C84

* The authors here acknowledge the invaluable assistance of Dr. Ella Woodyard, Research Associate, Institute of Educational Research, Teachers College, Columbia University.

The three forms of the Advanced Tests were administered to the same pupils in grades 7 to 12 in a large city system and in a suburb. The coefficients of correlation based on 888 cases were:

Form D and E74
Form D and F76
Form E and F86

The reliability coefficients (corrected by Spearman attenuation formula) based on 150 cases, 25 in each grade, are: Form A, .83; Form B, .89; Form C, .74; Form D, .82; Form E, .76; Form F, .74.

HOW TO ADMINISTER THE TESTS

Supplies needed by examiner are: extra pencils; a watch that reads accurately to seconds. Supplies for pupils are a test blank and pencil for each pupil.

The examiner's manner should be firm, interested, businesslike, and calm. Knowing exactly how to give the test is probably the best way to avoid tension and the wasting of time. The date should be written on the board before the directions are given. The voice should be just loud enough to be plainly heard in all parts of the room. The examiner may increase rapport with the pupils, without in any way interfering with the standardized directions, by giving them insight into the purpose of the testing and its value to them. The directions should then be followed in the order given:

1. See that each child has a sharpened pencil. Hold up some pencils, saying that if any one breaks his pencil point during the test he may exchange it for a sharpened one.
2. Tell children to keep the booklets closed until told to begin.

3. Distribute test booklets with front page up, repeating, if necessary, the directions to keep booklets closed until told to begin.

4. Give directions for writing name, sex, date, age, grade, school, and city.

5. Read aloud, clearly and not rapidly, the directions on the first page of the test booklet. Pause for the children's responses to the answers of each sample. Be sure each child has marked the exercise correctly.

6. Then say, "Now when I say *Ready*, turn the page and begin with number one. Mark only the one best answer. Do not stop until you have finished all questions. Do not skip any. If you finish before the time is up, look over your answers to be sure they are right. *Ready. Begin.*" Note the exact time when the children begin.

7. If children ask any questions about the meaning of questions say only, "Do the best you can."

8. Maintain quiet in the room throughout the period. If necessary for the examiner to move about, do so quietly in order not to disturb any child who is working on the test.

9. Be ready to supply a pencil to any child who needs one.

10. *Time—for Elementary Tests:* When exactly forty minutes have passed, say "Stop" and collect papers immediately. If all the class finish before the forty minutes are up, the papers may be collected. The forty-minute time allotment should give the pupils time enough to demonstrate their ability on the test.

Time—for Advanced Tests: Thirty minutes. If all the class finish before the thirty minutes are up, the papers may be collected. The thirty minutes should give the pupils time enough to demonstrate their ability on the test.

HOW TO SCORE THE TESTS

The accompanying answer key indicates in each case the page, number, and letter of the correct answer. For convenience in scoring, the answer key is spaced to correspond exactly with the test. Cut the columns apart if it will facilitate scoring. Lay the key alongside the answers. If the answer is correct, put a *c* beside the exercise; if an incorrect answer or more than one answer in an exercise is marked, put a cross (X) by the exercise; if no answer is marked, put a minus sign (—) by the exercise. *The score is the*

number of correct answers. This score may be quickly checked by counting the total number of wrong answers and omissions, and then subtracting this number from the total number of exercises.

SCORES OBTAINED IN CERTAIN SCHOOL SITUATIONS

It is more valuable to know how the scores of a certain group compare with those of a somewhat similar group than it is to have, as a basis for comparison, the average scores of widely different populations. Accordingly "norms" are reported in terms of three types of situations—large city schools, suburban schools, and small town and rural schools. Since in health education instruction is not standardized, valid national norms are not reasonably fixed.

USE OF THE TESTS

These health tests are useful in curriculum revision as well as in the health guidance of pupils. The total scores reveal superior or inferior health knowledge on the part of individuals and groups. The study of specific errors shows the kinds of health knowledge in which individuals and groups are lacking. With the present lack of uniformity in health instruction the testing of a group in order to ascertain their present status of health knowledge is essential to effective instruction. The repetition of the testing at intervals will show the progress which the pupils make over a period of time.

This is especially true in the junior and senior high school years. All pupils do not take physiology, or biology, or home economics. There are, therefore, gaps in their health knowledge. A boy who has studied physiology will make a high score on the questions relating to the structure and function of the body, but may be extremely deficient in his knowledge of the facts of nutrition.

The following tables giving the distribution of scores in different types of school are to be read thus: In the third grade of a large city system, 109 pupils were tested. The lowest score obtained was 7; the highest 47. Three-fourths of the pupils made a score of 34 or higher; one-fourth a score of 26 or lower. Half made a score higher than 30 and half a score lower than 30. The rest of the table should be read in the same way.

DISTRIBUTION OF SCORES, ELEMENTARY TESTS, GRADES 3-8

LARGE CITY SYSTEM

Grades	3	4	5	6	7	8
Cases	109	97	118	122	153	100
FORM A						
Range	7-47	21-49	21-51	24-48	25-57	26-56
Q3	34	38	41	44	46	47
Median	30	35	38	40	42	44
Q1	26	32	35	37	38	40
FORM B						
Range	6-48	17-47	25-52	27-52	25-54	28-54
Q3	37	38	45	47	49	50
Median	30	35	41	45	46	48
Q1	24	31	38	41	42	44
FORM C						
Range	10-46	21-49	26-50	29-54	24-52	28-54
Q3	36	39	43	45	47	48
Median	29	37	40	43	43	46
Q1	23	32	35	39	39	43

SUBURBAN SCHOOL SYSTEM

Cases	53	84	69	57
FORM A				
Range	4-39	8-48	23-51	23-53
Q3	31	39	43	48
Median	27	36	40	44
Q1	21	30	37	40
FORM B				
Range	13-48	9-49	30-54	34-56
Q3	35	42	48	52
Median	28	36	45	50
Q1	22	27	39	47
FORM C				
Range	11-45	13-50	25-57	34-55
Q3	32	40	50	51
Median	26	36	43	49
Q1	19	26	39	43

RURAL SCHOOLS IN TWO COUNTIES, A AND B

Grades	3		4		5		6		7	
	A	B	A	B	A	B	A	B	A	B
Cases	17	24	31	30	24	20	26	27	24	23
FORM A										
Range	10-37	7-39	9-44	14-40	9-51	17-47	20-52	28-50	28-55	29-48
Median	23	24	30	27	39	35	39	40	43	39
FORM B										
Range	5-35	9-37	9-41	7-40	17-52	15-49	25-54	28-53	35-55	22-52
Median	21	18	31	26	40	35	45	50	48	43
FORM C										
Range	9-34	8-42	9-41	9-41	16-47	18-47	27-52	26-47	33-52	26-50
Median	21	23	30	27	36	34	40	39	44	37

DISTRIBUTION OF SCORES, ADVANCED TESTS, GRADES 7-12

LARGE CITY HIGH SCHOOL

Grades	7	8	9	10	11	12
Cases			115	105	115	69
FORM D						
Range			15-46	23-51	28-52	25-51
Q3			37	41	44	46
Median			32	37	41	42
Q1			28	33	37	38
FORM E						
Range			18-49	21-46	23-50	23-52
Q3			35	37	42	44
Median			32	34	38	40
Q1			28	31	35	36
FORM F						
Range			23-49	18-53	31-56	33-57
Q3			43	47	49	52
Median			38	42	47	47
Q1			33	38	43	42

SUBURBAN HIGH SCHOOL

Grades	7	8	9	10	11	12
Cases	43	68	133	116	112	108
FORM D						
Range	13-43	17-47	17-49	24-51	27-53	26-49
Q3	38	37	39	43	46	45
Median	34	34	35	36	42	42
Q1	28	27	31	36	39	38
FORM E						
Range	18-46	23-45	16-48	26-51	22-50	30-48
Q3	37	37	40	42	43	42
Median	32	34	35	38	40	40
Q1	30	28	31	35	35	37
FORM F						
Range	21-52	23-52	23-54	23-56	32-56	37-57
Q3	44	46	46	50	51	50
Median	40	41	42	46	46	48
Q1	34	36	38	42	42	45

GATES-STRANG HEALTH KNOWLEDGE TEST

*Prepared by Arthur I. Gates and Ruth Strang
Teachers College, Columbia University*

Grades 3-8 Form B

Name..... Boy or Girl..... Date.....

How old are you?..... When is your birthday?..... Grade.....

Name of your school..... Town or city.....

DIRECTIONS: Here are some questions about health. Five answers are given to each question. Read carefully each question and the five answers. Then mark only the ONE best answer. If you do not know which answer is best, mark one anyway. But if you mark more than one answer to a question, all of them will be called wrong.

SAMPLE EXERCISES

1. We should have fresh air

- a. All of the time. a
- b. In the daytime but not at night. b
- c. At night but not during the daytime. c
- d. Especially in summer. d
- e. When we begin to get a headache. e

2. Boys and girls should brush their teeth

- a. Twice a year. a
- b. Once a month. b
- c. Twice a day. c
- d. Once a week. d
- e. Twice a week. e

3. After an outdoor picnic one should

- a. Throw the waste food into a near-by stream. a
- b. Set fire to the papers and leave them to burn up. b
- c. Spread the leftover food on the ground. c
- d. Hide the waste food and papers in the bushes. d
- e. Leave no waste food or papers lying around. e

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1. The safest place to play is usually
 - a. Along a railroad track. a
 - b. In a busy street. b
 - c. On a playground. c
 - d. Where men are building things. d
 - e. On a bridge. e
2. Of these foods, the best for a school child to choose for breakfast is
 - a. Buns. a
 - b. Hot biscuit. b
 - c. Pancakes. c
 - d. Pie. d
 - e. Hot cereal. e
3. There is less danger of your giving a cold to someone else if you
 - a. Cover your nose and mouth whenever you cough or sneeze. a
 - b. Lend him your handkerchief. b
 - c. Exchange pencils with him. c
 - d. Sit close to him. d
 - e. Use the same drinking cup. e
4. Wet clothes and shoes should be removed
 - a. After two hours. a
 - b. When we go to bed. b
 - c. As soon as possible. c
 - d. When we go home from school. d
 - e. Before supper. e
5. We should visit a dentist
 - a. Only when we have a toothache. a
 - b. Every two or three years. b
 - c. Regularly twice a year. c
 - d. Only if our teeth are crooked. d
 - e. Only to have teeth pulled. e
6. The best place to put matches after you use them is
 - a. In the wastepaper basket. a
 - b. On the floor. b
 - c. Out of the window. c
 - d. In a box of rubbish. d
 - e. In a metal dish or glass jar. e
7. It is good for one's health
 - a. To take a short rest at least once during the day. a
 - b. Never to take a nap in the daytime. b
 - c. To work hard every minute of the day. c
 - d. To read or study while eating. d
 - e. Never to rest except on Sunday. e

8. Children should
 - a. Eat whenever they see food. a
 - b. Eat until they feel "full." b
 - c. Eat cold foods quickly. c
 - d. Think about their stomachs all the time. d
 - e. Eat meals at about the same time each day. e
9. Plenty of sleep and a regular time for going to bed
 - a. Help to keep children well and happy. a
 - b. Are necessary only for babies. b
 - c. Make dull children bright. c
 - d. Take too much time away from study and keep children from doing good school work. d
 - e. Are necessary only in case of illness. e
10. If you have a nickel to spend after school, the best thing for you to buy is
 - a. A big piece of chocolate candy. a
 - b. An apple or other fresh fruit. b
 - c. An ice-cream cone. c
 - d. A glass of soda water or ginger ale. d
 - e. Three little cakes. e
11. Cooked meat and cooked vegetables and milk should be kept
 - a. In clean, cool, damp cellars. a
 - b. In the sunlight. b
 - c. Uncovered on the kitchen table. c
 - d. Covered in a clean, cold place. d
 - e. In a warm, dry closet. e
12. Boys and girls should make games safer by
 - a. Never thinking of danger. a
 - b. Obeying all the rules of the game. b
 - c. Paying no attention to where they throw balls or swing bats. c
 - d. Always thinking of accidents. d
 - e. Tripping others for fun. e
13. When you perspire after playing hard, it is best for you to
 - a. Put on a coat or sweater when you sit down. a
 - b. Sit with few clothes in a cool, breezy place. b
 - c. Get an ice-cold drink. c
 - d. Jump into a cold lake or pool for a swim. d
 - e. Lie down on the grass in your play clothes. e

14. We should try to make sure that sunlight
- Gets into every room in the house. a
 - Does not shine on carpets. b
 - Does not fade the wallpaper. c
 - Is kept out of schoolrooms. d
 - Is kept out of the house by curtains. e
15. You should buy food in stores where the
- Storekeeper has flypaper to catch some of the flies that walk over the food. a
 - Food is spread out uncovered so everyone who comes to buy can see it. b
 - Storekeeper wears a white coat that is a little dirty. c
 - Ready-to-eat food is kept covered. d
 - Storekeeper washes his hands once a day. e
16. Milk should be put in cans or bottles that have been
- Washed with cold water. a
 - Put in the sunshine. b
 - Sterilized. c
 - Washed with soda and water. d
 - Filled with water and left to soak two or three hours. e
17. For eating a good meal in the middle of the day, boys and girls should use about
- 5 minutes. a
 - 10 minutes. b
 - 15 minutes. c
 - ½ hour. d
 - 1½ hours. e
18. Stockings should
- Be changed often only if the feet perspire a great deal. a
 - Be rolled up and put in shoes at night. b
 - Fit the foot tightly. c
 - Be changed and washed at least every other day. d
 - Be the same length as the foot. e
19. At noontime schoolboys and schoolgirls usually should
- Eat very quickly and run back to school. a
 - Take a sandwich and run out to play. b
 - Eat in a hurry so that they will have time to play a game of ball. c
 - Sit down and take at least fifteen minutes to eat their lunch. d
 - Play with the knife and fork. e
20. A pleasant, sanitary kitchen has
- Fancy, carved woodwork and furniture. a
 - Walls and woodwork painted a soft, light color. b
 - One small window with dark-colored curtains. c
 - Three or four small pretty rugs on a waxed floor. d
 - Dark walls that will not show the dirt. e
21. Jane knew how to open a window to get good air into a room and let the bad air out. She opened it
- A little at the top. a
 - A little at the bottom. b
 - A few inches at the top and bottom. c
 - All the way from the bottom on very cold days. d
 - Just a little crack. e
22. If you are camping and are not sure the water is safe to drink, the best thing to do is to
- Drink no water at all. a
 - Let it stand in a covered pail overnight before drinking it. b
 - Boil it. c
 - Drink tea instead. d
 - Take a chance, and drink it anyway. e
23. Jack took very good care of his eyes. One wise thing he did was to
- Read in bed before he went to sleep. a
 - Read all the time he was in the streetcar going to school. b
 - Sit in the first or second row at the movies. c
 - Rub his eyes when they began to feel tired. d
 - Make sure when he was reading that the light fell on his book and not in his eyes. e
24. Fingernails can best be kept clean by using
- A washcloth, soap, and hot water. a
 - Soap, water, and a good nail polish. b
 - A small brush, warm water, soap, and a stick of smooth wood. c
 - A small brush, warm water, soap, and a penknife. d
 - A nail file and a good nail polish. e

25. When your friend has a bad cold, the wisest thing for you to do is to
- a. Stay indoors and play games with him. _____ a
 - b. Ask him to go out for a walk with you. _____ b
 - c. Stay to dinner with him to cheer him up. _____ c
 - d. Go to the movies so that you can tell him about them. _____ d
 - e. Write him a jolly note to cheer him up. _____ e

26. The common housefly is usually hatched in
- a. Mud. _____ a
 - b. Still water. _____ b
 - c. Manure. _____ c
 - d. Swampy places. _____ d
 - e. Houses. _____ e

27. A sanitary drinking fountain is one which
- a. Throws the water straight up in the air above the bulb. _____ a
 - b. Has so little water coming out of the bulb that children have to put their lips down on the bulb to drink. _____ b
 - c. Throws the water up to one side. _____ c
 - d. Is the right height for the tallest children in the school. _____ d
 - e. Is used as washbasin as well as drinking fountain. _____ e

28. When a child gets a cinder in his eye, a good thing for him to do first is to
- a. Rub both eyes with his hand or his handkerchief. _____ a
 - b. Wash his eyes with any water that is at hand. _____ b
 - c. Hold the eyelid out from the eye for a few seconds and let the tears wash out the cinder. _____ c
 - d. Go to the nearest candy store for help. _____ d
 - e. Leave the cinder alone until it comes out itself. _____ e

29. Two foods that are a cheap source of energy are
- a. Lettuce and asparagus. _____ a
 - b. Strawberries and cream. _____ b
 - c. Cereals and bread. _____ c
 - d. Meat and fish. _____ d
 - e. Eggs and bacon. _____ e

30. A citizen who considers the health of others
- a. Throws waste papers and fruit skins in a corner of public rooms, not in the center of the floor. _____ a
 - b. Spits on the floor only if it is already dirty. _____ b
 - c. Spits on the sidewalk rather than on the floor of a building. _____ c
 - d. Spits into a paper handkerchief or old cloth that can be burned. _____ d
 - e. Complains about the windows being opened in a large crowded meeting place. _____ e

31. John was out on a walk in the country near the city where he lived. He got very thirsty, but because he wanted to drink only safe water he waited until he could drink water from
- a. An old well. _____ a
 - b. A little, clean-looking stream. _____ b
 - c. A wide river. _____ c
 - d. The city water supply. _____ d
 - e. A pretty brook. _____ e

32. The best thing to use in dusting tables, chairs, and other furniture and wood-work is a
- a. Feather duster or soft brush. _____ a
 - b. Damp cloth or oiled cloth. _____ b
 - c. Large, soft, dry cloth or duster. _____ c
 - d. Very wet cloth or soap and water. _____ d
 - e. Small brush or whisk broom. _____ e

33. A growing boy should eat roast beef or other meat
- a. More often than he drinks milk. _____ a
 - b. Twice a day. _____ b
 - c. Three times a day. _____ c
 - d. Not more than once a day. _____ d
 - e. More often than he eats potatoes. _____ e

34. If you do not succeed quickly in mending a bicycle, you had better
- a. Give it a good kick. _____ a
 - b. Stop trying and think of something pleasant. _____ b
 - c. Stop and think out the best thing to do. _____ c
 - d. Blame some of the boys for not helping you. _____ d
 - e. Give up trying to mend it. _____ e

35. The most sanitary soda fountain in a drugstore or candy store is one in which
- The used glasses are quickly rinsed in cold water. _____ a
 - The used glasses are all washed in a pail of warm, soapy water. _____ b
 - The flies are kept away from the top of the counter, but gather behind it. _____ c
 - The clerk often has a bad cold. _____ d
 - A fresh paper cup is used for each person. _____ e
36. A person's second or permanent set of teeth usually begins to appear when he is
- Four years old. _____ a
 - Six years old. _____ b
 - Eight years old. _____ c
 - Ten years old. _____ d
 - Twelve years old. _____ e
37. If you are in the house alone and your clothing catches on fire, the best thing to do is to
- Run as fast as you can for help. _____ a
 - Jump up and down and call for help. _____ b
 - Roll yourself in a rug or thick blanket. _____ c
 - Run out to the well to get water. _____ d
 - Open the windows and call the firemen. _____ e
38. If you are too thin and wish to gain in weight, the best way to do so is to
- Take no exercise. _____ a
 - Eat at every meal until you feel "full." _____ b
 - Eat sweets between meals. _____ c
 - Eat bread and sugar every time you feel hungry. _____ d
 - Eat three wholesome meals every day. _____ e
39. Exercise of a kind suited to you
- Improves the circulation. _____ a
 - Raises body temperature. _____ b
 - May cause constipation. _____ c
 - Makes you feel stiff and sore afterward. _____ d
 - Is a strain on the heart. _____ e
40. As a rule, food for people who are sick in bed should be
- Easy to digest. _____ a
 - Sweet. _____ b
 - Highly seasoned. _____ c
 - Just like food for well people. _____ d
 - Always liquid. _____ e
41. Of these five persons, the one who has the best chance to have continued good health is
- John who never uses a public drinking fountain. _____ a
 - Mary who thinks about her health most of the time. _____ b
 - Jim who brushes his hair every day. _____ c
 - Bill who has good habits of eating, playing, and sleeping. _____ d
 - Dorothy who cleans her teeth thoroughly every day. _____ e
42. At average market prices, a housekeeper gets more body-building food for her money when she buys
- Milk. _____ a
 - Oysters. _____ b
 - Chicken. _____ c
 - Cream. _____ d
 - Apples. _____ e
43. The best reason why too much sweet food is bad for children is that it
- Makes them thirsty. _____ a
 - Always makes them gain weight rapidly. _____ b
 - Makes them eat less of foods that help them grow and keep them healthy. _____ c
 - Overheats the body. _____ d
 - Costs more than other food. _____ e
44. If your friend has cut his foot badly and the doctor can not come for an hour, the best thing to do would be to
- Put iodine on the cut and then cover it with a sterile bandage. _____ a
 - Have him sit in the sunshine so that the sun can kill the germs in the cut. _____ b
 - Have him bathe his foot in water and put on his sock again. _____ c
 - Help him to walk to the doctor's as best he can. _____ d
 - Take any cloth that is at hand and wrap it around the cut. _____ e
45. A good sportsman
- Disputes the umpire's decision. _____ a
 - Cheers only for his own team. _____ b
 - Plays fair no matter who is winning. _____ c
 - Does not care whether he wins or loses. _____ d
 - Tries every day to be chosen as leader. _____ e

46. Many epidemics of disease have been caused by
- Lack of sleep. a
 - Night air. b
 - Lack of cleanliness. c
 - Long hours of work. d
 - Too much bathing. e
47. Of the following, the best reason why food should be well chewed is that
- It can be swallowed more quickly. a
 - The saliva begins to digest starchy food. b
 - Less food is needed when it is well chewed. c
 - Animals chew their food. d
 - It is polite to chew one's food well. e
48. One duty of the city Public Health Department is to
- Make places where people can get books to read. a
 - Forbid the publishing of disease conditions in the city. b
 - Provide cars for taking people to the country. c
 - Provide churches in all parts of the city. d
 - See that pure-food laws are kept. e
49. The person having the wisest idea about his own health, or the best attitude toward his health
- Spends most of his time and thought improving his own health. a
 - Never says he is sick. b
 - Worries about his health all the time. c
 - Takes sensible health precautions and then thinks about other things. d
 - Does his work and takes part in games even though he has a cold or fever. e
50. Betsy, who was in the eighth grade, got lunch every day for her five-year-old brother and herself. Because she knew what was best for children's health, she often had
- Sandwiches, coffee, and hot milk. a
 - Fried eggs, cookies, and cocoa. b
 - Cold meat, bread and butter, and rice pudding. c
 - Tomato and lettuce salad and fruit. d
 - Poached egg on toast, lettuce, milk, and applesauce. e
51. Bacteria are most surely and quickly killed by
- Dampness. a
 - Outdoor, direct sunlight. b
 - Cold water. c
 - Sunshine passing through a window-pane. d
 - Cold weather. e
52. The most healthful way to use your organs for breathing is to
- Use only the top part of your lungs. a
 - Breathe through both nose and mouth. b
 - Use the diaphragm as well as the ribs. c
 - Take five deep breaths every morning. d
 - Breathe in and out quickly. e
53. Some kinds of mosquitoes carry the germs that cause
- Yellow fever and malaria. a
 - Typhoid fever and constipation. b
 - Heart and lung trouble. c
 - Tuberculosis and colds. d
 - Diphtheria and scarlet fever. e
54. If you are not popular with other boys and girls, the best thing to do is to
- Spend all your free time worrying about yourself. a
 - Call the other boys and girls snobs. b
 - Imagine yourself popular and attractive. c
 - Do daring things to attract attention. d
 - Work and play with skill and good will and a spirit of helpfulness. e
55. The richest source of iodine is
- Green leafy vegetables. a
 - Sea foods. b
 - Bacon. c
 - Rice. d
 - Oranges. e
56. A person who has had even a small glass of wine, whisky, or other alcoholic beverage
- Acts more quickly than usual. a
 - Thinks more clearly and quickly than usual. b
 - Is slower than usual to make the right move. c
 - Is more careful than usual. d
 - Knows he is thinking less quickly than he usually does. e

57. If you are bothered by poison ivy and have been in a place where poison ivy grows, you should

- a. Apply the lather from cheap laundry soap to your skin two or three times. a
- b. Not let water touch your skin for six hours. b
- c. Keep out of the sunlight for several days. c
- d. Rub the hands with lemon. d
- e. Rub hands and arms with olive oil. e

58. A rise above normal in the temperature of the body is called a

- a. Focus of infection. a
- b. Fever. b
- c. Thermometer. c
- d. Sweat. d
- e. Sunburn. e

59. After working or playing hard, you should rest a while because

- a. During rest oxygen is stored up. a
- b. Rest quiets the muscles. b
- c. During rest the poisons of fatigue are being removed from the muscles. c
- d. During rest the lactic acid in the muscles is increased. d
- e. Rest is the source of energy for work and play. e

60. The body temperature may be lowered most seriously by

- a. Eating cold foods. a
- b. Taking a quick cold bath. b
- c. Skating an hour on a cold day. c
- d. Getting fatigued and being exposed to cold and wet. d
- e. Drinking coffee or other stimulants. e