HEALTH EDUCATION FOR 4TH, 5TH, 6TH, GRADE CHILDREN

Thesis for the Degree of M. S.

Sara Coolidge

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A Thesis Presented for the

Degree of Master of Science

By

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Introduction:

During the last ten years the ideals concerning the need for health teaching have changed markedly. This is due, in part, to the large number of men who were found physically unfit for service when recruits were examined for the army for the World War and also to the large number of underweight children discovered by surveys made in the public schools. Heretofore, the schools have assumed little responsibility for the health of their children. While some health work with children has been done by dispensary clinics and other social organizations, the more logical place for health teaching is in the schools, because all the children can be reached.

With these facts in view, the present study was made. The aims are (1) to make a critical survey of the various programs now used in health education, (2) to study the present health knowledge, (3) from these to outline a course of study that can be used in the upper primary grades, i.e., 4, 5, and 6. While this course is planned primarily for the schools of East Lansing, the outline is intended to be flexible enough so that it can be adjusted to the needs of each particular group of pupils, for as Oberteuffer has said, "Health content is

valuable when it is directly tied up and related to the life interest of the particular student." To test the value of such a course, instruction, according to it, was given to a group of children in East Lansing. At the same time a comparison of the growth in height and weight of these children was made with that of another group of like social standing receiving no health instruction.

Review of Literature.

Purpose

It should be the goal of all school health programs to help produce normal, robust children, free from physical defects and disease, with wholesome ideals and healthful habits, developed and established in their early years. It should not only be desired that good health be obtained during school life but that the result should be young men and women of sound bodies and sound minds so that they can contribute the most to the future of the nation. Motives and practices of health should influence the whole school life and work. It should be so presented that the child actually lives the health rules he is taught and weaves them into his very fabric. (1) To further this ideal, it is the opinion of men and women prominent in health work that a substantial program of health education extending through the grades become a part of the curriculum of every school.

Subj.Matter

Methods used

A great deal of work has been done already in outlining programs for health education. In order to develop a course that may contain only material that is necessary

and that will be of value to the pupils, certain methods of procedure have been used. Some of these are: (1) the questionnaire method in which inquiries are sent to teachers, physicians and nurses for them to check what they think should be taught in the schools: (2) a survey of health conditions of children at the beginning of the year, the result of which will indicate the needs of the group: (3) Health knowledge tests given to children.(2)

Prepared by whom

In the majority of states the courses of study in health instruction have been prepared under the Department of Education with no indication that persons who are especially trained in the health work were employed for this purpose. (3) Harman and Clark of the United States Public Health Service have made a study of this problem and found that in only twelve out of forty eight states were the outlines prepared by health or physical education directors. Very often it is true that physical education directors have had very little, if any training in child health work. The ideal way of preparing a course of study for health

education is to have a group of educators who are especially trained in that subject, as Physicians, Nurses, Nutrition specialists, Physical Education Instructors and Teachers, having as their chairman a person trained in child health work, make the necessary investigations and from this information formulate a health program.

Contents

While about ten years ago a health program consisted mainly in lessons on anatomy, now it has grown and includes many other elements. For example, in one state it consists of the following subjects: physiology, personal hygiene, community hygiene, hygiene of the school, hygiene of the home, safety first, first aid, baby care and mental hygiene. In a few instances instruction in industrial and sex hygiene are given also. In the majority of the states the subjects most frequently taught are: physiology, personal hygiene and community hygiene. Much of the instruction in physiology, outlined in many of the state courses of study, involves the memorizing of unimportant details of anatomy, such as the number of bones and the names of all the muscles in the body. In personal hygiene, certain

health rules are memorized but since these are not worked out by the children themselves, the reasons for following them are not clear. Thus the children's interest in the rules is not lasting and the desired results are not obtained. In community hygiene a great deal of stress is placed on the symptoms and causes of disease but not so much on prevention which is, of course, most important. (3) These subjects are all valuable but by no means cover all the phases of health and, in fact, omit some of the most important ones which should be taught in the schools.

The advisory committee on health education of the National Child Health Counsel report that training in health habits, acquisition of health knowledge and formation of ideals and attitudes tending to promote personal and community health should be given to all school children.

Miss Roberts of the University of Chicago says, "There has been a tendency in the newer nutrition movement to carry the policy outlined for the primary grades through-

out the school: that is, to have no systematic instruction in subject matter but to make habit formation by repetition in interest the sole aim of the work. Illustrative of this method was the initial work of the Child Health Organization with its "Rules of the Game" and its health stories, health posters, health plays, health games, health clowns and other attractive devices to interest children in carrying out health practices. This emphasis on doing rather than learning was a natural reaction against the old regime of teaching health facts with no relation to conduct, and it has served its purpose. There is now, however, a consensus of opinion among health educators that it is time for a return of the pendulum to somewhere between the two extremes. Doctor Winslow, at the Mohonk Conference, expressed the views of many others as well as of himself when he stated:

'Habit formation should no doubt be our first aim, but it is by no means our only aim. We must also lay a sound basis of knowledge if the child is to be something more

than an automaton--if it is not only to learn certain tricks but is also to acquire intelligence which will enable it to modify its habits to meet the changing conditions of its after life.

If as a citizen he will be able to deal competently with health problems, he must have something more than that he was taught in school to brush his hair in the morning, to operate the tooth-brush with a rotary motion, to eat carrots, and to drink milk----I believe----a program of school hygiene should include not merely the formation of health habits immediately necessary to the child, but also the acquisition of a certain basic body of knowledge which will be necessary for the continuance of healthy living in the future.' "

The health lessons in Miss Robert's classes cover the important health habits and the selection of food. A list of topics usually included in the series given in her health classes, which are suitable for the intermediate grades, are the following: (1) Milk; (2) Sleep; (3) Vegetables; (4) Body's need of fuel

(5) Calories;(6) Cereals;(7) Bread and potatoes; (8) Breakfast;(9) Dinner;(10) Supper;(11) Fruits; (12) Candy;and other sweets;(13) Between meal eating;(14) Eggs and meat;(15) Exercise and Rest;(16) Fresh air and ventilation;(17) Teeth; (18) Iron in foods;(19) Regular toilet habits; (20) Weight;(21) Good and bad posture;(22) Self-control. (4)

Dr. Thomas D. Wood, (5) adviser in health education, Columbia University, states that the health education program should emphasize the health habits in all the grades, but in the upper primary grades there should be, in addition, increasing emphasis on the study of community health. Important topics for discussion are:

1. Food builds the body.
2. Food is fuel.
3. Certain foods keep body in running order.
4. Different classes of food supply different materials to the body.
5. Cost of foods.
6. Selection of diet.
7. It is necessary to make foods safe to eat.
8. Food habits.

9. Foods to be eaten every day.

10. Plan meals.

Carolyn Hoefer (2) of the Elizabeth McCormick Memorial Fund, says that the following health principles should be taught in the first six grades--first grades--(1) going to bed at 7:00 or 8:00 o'clock depending on age, (2) drinking milk three times a day, (3) brushing teeth every night, (4) drinking a glass of water before breakfast, (5) eating cooked cereal every morning. Second and third grades--(1) eating fruit once a day, (2) eating each day one vegetable in addition to potatoes, (3) no tea or coffee. Fourth and fifth grades, (1) eating no sweets between meals and reducing amount of sweets eaten at meals, (2) eating meat only once a day, (3) having fresh air at all times, especially at night. Sixth grade--(1) cleanliness, (2) necessity of having breakfast every morning, (3) thorough mastication of food.

The most common defects of the courses of study in health education found by Harmon and Clark (3) are very well summarized in the following:

(a) Overcrowding with subject matter, or not enough subject matter.

(b) Including information not within range of child's experience.

(c) Including unessential and impractical information which often fails to function in the lives of the pupils.

(d) Misinterpreting scientific facts.

Amount

The amount of subject matter varies greatly in different states. In some cases only a suggestion of the main topic is given and the teacher is left to decide what should be taught. If this teacher happens to be well trained in all phases of health education this type of course of study would, perhaps, suffice, but how many teachers of this kind are there? A typical example of such a course of study is the following: (3)

(1) Health habits are briefly outlined for grades 1 to 4. As,

Eat three good meals.

Eat every day fruit, vegetables and whole grain cereals.

Drink milk, no coffee or tea.

Drink four glasses of water.

Sleep long hours with windows open.

Play out of doors.

Brush teeth.

Full bath at least once a week.

Wash hands before eating.

How to cough or sneeze.

(2) First aid given main emphasis in grade 5. No outline of subject matter but teacher is referred to a suggested text for grades 5 to 8.

(3) Community hygiene--grade 6. Study of diseases, especially the symptoms and causes.

In contrast with the sparsity of subject matter in this outline is the broad course of study in the following outline:

Health habits are outlined as above for grades 2, 3, and 4.

(1) The teeth - grade 4. Structure, formation and number.

(2) Food and Drink - grades 4 and 6. Use of food for power and warmth. Study of rations, overeating, frequency of eating, vegetarianism, and proper use

of condiments. Need of variety of food. Classification of food.

(3) Digestion - grade 6. Salivary, gastric and intestinal digestion to be taken up in considerable detail. Diseases of mouth and throat, tonsilitis, diphtheria, and mumps.

(4) Circulatory system - grades 5 and 6. Blood, its function and composition. Its diseases. Blood poisoning. Heart-location, internal anatomy, and regulation. Arteries and veins.

(5) Respiration - grade 6. Parts of the system, sense of smell. Mechanism and chemistry of respiration. Diseases of respiratory organs.

(6) The nervous system - grades 5 and 7. Taken up in greatest detail in grade 7. Central nervous system. Sympathetic nervous system as to ganglia plexuses. Structure of brain and spinal cord. Functions of its different parts. Cranial nerves, location and function. Reflex action. Diseases of the nervous system--insanity, paralysis, and nervous prostration.

(7) Skeleton and muscles. Number of bones, composition, setting broken bones, muscles as to formation, attachment, exercise.

(8) Fermentation and germ diseases. Ferments, organized and unorganized. Bacteria, size, multiplication, beneficial and harmful. Immunity, natural and artificial.

Methods

The methods of presenting the health lessons are also often open to question. A comparison of the methods used by Miss Roberts with those suggested by Andress and Bragg will make this clear.

Miss Roberts (6) treats each lesson as a problem the solution of which is of vital interest to each member of the class. Training in habit formation is stressed in all grades but the aim in the upper primary grades is to have habits founded on knowledge. The child has reached the age of intelligence and desires and deserves to know the reasons for what he is asked to do. The aim of each lesson throughout the series is not merely to teach the children what is "good to be done" but to

send them out with a desire to live its teaching because they understand its worth. For instance, the lesson on vegetables aims to leave the children with a desire and a determination to like and to eat vegetables, because they have found out that they help build good blood. The sleep lesson aims to send the children to bed at the hour that they themselves had decided on as wise, in order to grow and be strong, healthy boys and girls. The lesson on milk aims to cause the immediate increase in the consumption of this food, showing that the children want it because they have discovered that it makes them grow and builds good bones and teeth.

In the program for health teaching by Andress and Bragg (7) a suggestive outline is given. The method of presenting this material seems to be an enlarging upon the "Rules of the Game". Posters, rhymes and songs are used to emphasize the health habits. These help a great deal in holding the interest of the child and thus are very beneficial but do not give very much health knowledge. The children are given the health habit to live up to and are not asked to work it out for themselves.

A sample of their Outline follows:

Routine class work.

First meeting:

Height measured.

Average weight for age calculated.

Charts made.

Each successive meeting:

Weight taken and recorded on charts.

Exhibit and study of individual charts.

Health talk.

One good food habit.

One other health habit.

Conferences with mothers present.

Follow up work in homes.

Experimental Work

Plan of Experiment

The following course of study was planned for the 4, 5 and 6 grades of the schools in East Lansing. In order to discover how much these children knew about the general principles of healthful living, a health knowledge test was given to them. A test of this kind will indicate the phases of health that need the greatest emphasis in this particular group. The following is the health knowledge test that was organized and given to these children:

Health Knowledge Test.

1. Just before meal time the most important thing to do is
   - Brush out clothes.
   - Wash hands and face.
   - Come to the table just as we are.

2. The best food to eat every day is
   - Candy
   - Vegetables
   - Pie

3. Of the following the most healthful drink is
   - Tea
   - Coffee
   - Orange juice

4. It is usually best for boys and girls to eat
   - 3 regular meals
   - Whenever they want to
   - No breakfast

5. The best time to eat candy is
   - Before dinner
   - At recess
   - After supper

6. At meal time we should
   - Eat quickly
   - Take a sandwich and run out and play
   - Sit down at the table and eat slowly

7. Fruits and vegetables are good for us because they
   - Help keep us well
   - Taste good
   - Are a pretty color

8. The food that builds red blood is
   - Candy
   - Bread and butter
   - Spinach

9. The food that helps to build good teeth is
   - Milk
   - Chocolate cake
   - Beef steak

10. The cereal that is best for children to eat is
    - Cornflakes
    - Oatmeal
    - Puffed rice

11. A child who wants to gain weight should
    - Eat a big dinner whether he is hungry or not
    - Exercise a great deal
    - Eat a large amount of candy

12. A child should drink daily
    1 cup of milk
    4 " " "
    8 " " "

13. If a boy wants to gain in weight the best games for him to play after school are
    Football
    Baseball
    Marbles

14. If a girl wants to gain in weight the games for her to play are
    Tag
    Jacks
    Basketball

15. While eating it is a good thing to
    Talk about your troubles
    Study your lessons
    Feel comfortable and happy

16. The largest amount of food is needed for fuel when a person
    Swims
    Studies
    Washes dishes

17. We should have fresh air
    All the time
    In the day but not at night
    In the summer but not in the winter

18. After school boys and girls should spend 2-3 hours in
    Studying tomorrow's lessons.
    Playing in the attic
    Playing out doors in the sunshine and fresh air

19. Breathing through the mouth is harmful because it
    Does not look well
    Is rude
    Carries cold uncleaned air into the lungs

20. We should try to make sure that sunlight
    Does not shine on and fade the carpets
    Getsinto every room in the house
    Is kept out of school rooms

21. We get the best air to breathe
    From a hot air furnace
    By being out doors in the sun
    By keeping the night air out

22. We should sit
    As tall as is comfortable with feet flat on floor
    On one foot
    With back curved in as far as possible

23. In order to sleep well we should
    Sleep with windows closed
    Go to bed in dark quiet room
    Play exciting games just before bed time

24. Boys and girls should go to bed at
    8
    10
    11

25. Boys and girls should sleep every night
    8 hours
    11 "
    6 "

26. Should boys and girls spend the evening by
    Going to the movies
    Staying home
    Listening to the radio until 11:00 o'clock

27. The neatest children
    Leave the bathtub and wash bowl for others to clean
    Wipe their shoes when coming in doors
    Don't care if hair is not brushed

28. Children should take a bath
    Once a month
    In summer but not in winter
    At least twice a week

29. Fingernails should be
    Cleaned every day
    Bitten short
    Cleaned once a month

30. Keeping desks and floor neat and clean should be done by the
    Teacher
    Janitor
    Pupils

31. Every day a child should drink
    About 1 cup of water
    At least 4 cups of water
    Almost 2 cups of water

32. We should visit a dentist
    Only when we have a tooth ache
    Regularly twice a year
    Every two or three years

33. The most important time to clean the teeth well is
    When you get up in the morning
    After lunch
    Before going to bed

34. You are safer if you
    Carry pins in your mouth

Run while carrying scissors or knives
Never put anything in your mouth except a tooth brush and things to eat and drink

35. Clean body and clothes
Take more time than they are worth
Aid health and are pleasant
Are wasteful for school children

36. We shall probably have fewer colds if we
Eat plenty of pie and candy
Do not go out in the cold
Live as the rules of health tell us to live

37. A good sportsman
Cheers only for his own team
Plays fair no matter who is winning
Does not care whether he wins or loses

38. Which is the better for breakfast, A or B

A.-------Pancakes		Coffee
	Bacon	Apple sauce
	Bread & butter	
B.-------Orange		Toast & butter
	Oatmeal	Milk

39. Which is the better dinner, A or B

A.-------Fried potatoes		Bread & butter
	Steak	Jam
	Rice pudding	
B.-------Baked potatoes		Cabbage
	Steak	Milk
	Graham bread and butter	
	Baked apple	

40. Which is the better supper A or B

A.-------Soup		Graham bread
	Milk	Escalloped tomatoes
	Custard pudding	
B.-------Potatoes		Bread & butter
	Baked beans	Tea

A study of the results of this test show very clearly that certain phases of health need more emphasis than others. Questions 11, 13, 14 and 16 which deal with exercise, were missed by the greatest number, showing that children know very little about the amount and kind of exercise that they should have. The most important time for brushing teeth is another point that needs to be stressed. The results show, also, that a large number of the children do not realize the importance of having sunshine. Several of the questions on foods, numbers 5, 8 and 9, were missed by a majority of the children. The results are given in table 1.

Table I.

Results of Health Knowledge Test

Grade 4		Grade 5		Grade 6		Grades 4, 5, & 6.
No. that took test--34		No. that took test--27		No. that took test--27		
No. of question:	Children that missed questions, Percent		Children that missed questions, Percent		Children that missed questions, Percent	Average of total percent of children who missed Percent
1	0		0		0	0
2	1		0		0	0
3	6		2		2	3
4	6		2		0	3
5	37		33		37	36
6	3		0		0	1
7	10		2		0	4
8	36		22		22	27
9	15		13		16	15
10	24		11		16	17
11	52		63		59	58
12	13		7		11	10
13	74		74		79	76
14	79		77		83	80
15	12		2		2	5
16	41		44		46	44
17	10		5		2	6
18	13		7		5	8
19	7		4		3	5
20	51		15		11	26
21	10		2		2	5
22	15		5		2	7
23	16		14		18	16
24	4		2		4	3
25	18		17		7	14
26	15		5		0	7
27	10		7		13	10
28	1		2		0	1
29	9		2		0	4
30	13		9		9	10
31	19		7		9	12
32	28		7		5	13
33	55		54		67	59
34	6		2		0	3
35	24		9		3	12
36	13		9		2	15
37	21		10		16	16
38	21		8		3	11
39	21		13		9	14
40	18		12		4	11
Total no. questions missed-280		Total no. questions missed-158		Total no. questions missed-155		

From suggestions received, from these results, and from the literature on health courses of study, together with experience gained from conducting child health classes, this course of study was planned. The project method is used throughout. A suggested number of lessons is given for each project but this may be increased or decreased according to the particular need. Forty lessons are planned for each grade--the approximate number needed for one lesson a week for one year. Thirty minutes is the time allotted for each lesson.

During the first health lesson the height and age of the children are taken so that their average weight can be computed. For this information, "The Baldwin & Wood Ht. & Wt. Tables",(8) are used. At the next lesson, the children are weighed. Then the percentage underweight or overweight of each child is determined, preferably by the child. The third lesson is used for making charts. Each child has his own chart to keep so he can see how much he gains in weight. A copy of an individual chart is included. The children are weighed once a month and measured three times a year--at the beginning, middle and end. In this way the teacher and children can see how much the

children gain in both height and weight. Thus, out of the forty lessons, ten are to be used for weighing, three for measuring and from two to five for making and discussing charts, depending on the grade.

The title of each project is brief but comprehensive. It is not stated in the form of a problem so that the teacher may formulate it to suit her own particular group. For instance, project 1 of grade 4 on good breakfast, might be presented as follows: "What kind of breakfast should I eat in order to grow big and strong", or "What is the best breakfast for me?"

Grade IV.

I. Project Good Breakfast

Main Topics for Discussion		Illustrative Material
No. of Lessons 3	Milk - How is it of value to body.	
	Promotes Growth	Picture of 2 rats-one having had milk, the other not.
	Builds Bones & Teeth	Picture of good and bad bones and teeth.
	Importance of Lime and Phosphorus, amount needed each day.	Have milk contest. Learn milk song.
Cereals		
No. of Lessons 3	What are cereals and how are they of value?	Whole grains of wheat etc.
	Two main classes, those made of whole grain & those made of inside.	Break grains and note different parts.
	Value of dark cereals Minerals Furnish bulk	
	Relation of cereals to bread	Make a cereal poster
	Best kind to eat	
Fruit - What is the value of Fruit?		
No. of Lessons 2	Kinds - dried & fresh. Examples of each.	
	Value to body Furnish minerals & Vitamines.	
	Why eat fruit in morning, Appetite	Fruit contest Large fruit poster, give stars for eating fruit in the morning

	Plan Breakfast-	
	What constitutes a good breakfast?	
No.of Lessons 4	What did you have for breakfast?	Several write their breakfasts on board.
	What should you have for breakfast?	Food models
	Why is it necessary to have a big breakfast.	Breakfast poster Breakfast contest
	Plan big breakfasts	

II. Project — Cleanliness

No. of Lessons		
2	Care of the hands Value of clean hands Danger of dirty hands Putting things in mouth	Contest on keeping fingers, pencils etc. out of mouth
	When to clean hands Before meals	Clean hand poster
	Care of finger nails	

III. Project — Exercise and Rest

No. of Lessons		
5	(a) Exercise - Play Value of Fresh air and sunshine Kinds of play and exercise How much	 Poster Comparison of body with Engine
	(b) Rest - Value of - Necessity for under weight children	
	Sleep - Value of - How much, class decide amount needed Hour for going to bed Kinds - Restful and unrestful Conditions - Weight of Bed covers Fresh air-ventilation Air bed - sunshine	 Clock poster Contest on going to bed at certain time. Contest for getting correct amount of sleep.

IV. Project — Posture

No. of Lessons		
3	What is correct posture Sitting, standing and walking. How to correct poor posture	Illustrations of good posture Posters Cooperate with physical education teacher
	Practice Care of feet Correct shoes Bathing of feet	

Grade V.

I. Project Trip Through Healthland.

Children are always interested in taking a trip. During this trip through Healthland the past year's work may be reviewed in an interesting manner and new material may be given. By placing a goal, such as a gain of one-half pound per month for those that are underweight, that must be reached in order to leave one station for another, great interest can be aroused in gaining in weight. As the children are taken from one station to another points of interest and importance at the particular stations are discussed.

Materials for this trip may be purchased from the American Child Health Association, or the children may make their own map, tickets, and folders.

No. of Lessons		
	Bathtubville - Why start out from here.	Map of Healthland
2	Cleanliness of Body, Clothing, Homes and Schools.	
2	East Tooth Brush Structure of teeth Foods for building teeth Why clean teeth What causes decay	Diagram of tooth
	How often and when to clean teeth	Teeth cleaning contest
1	Drinkwater Value of water to body Amount to drink daily	Water drinking contest if there is need for it
1	Orange Valley Kinds of fruit Value of fruit to body	Make fruit poster
1	Oatmealo Value of cereals Review Big Breakfasts	Breakfast Contest
1	Hot Soup Springs Value of Soup - appetite Classes of vegetables 1. Those grown underground 2. Those grown on top of ground Give examples of each class Value of those grown under Fuel value Minerals	Vegetable Lessons may be worked in with Geography lessons
3	Spinach Greens Value of vegetables grown on top of ground-examples	If Spring make garden of vegetables at home.

No. of Lessons		
	Minerals Vitamines	
	Learn to like all vegetables	Vegetable contest
	Plan good dinners	Food Models
	Play Meadows	
1	Value of play Kinds How much Value of rest How much	
1	**Baked Potato Hills**	
	Review of value of vegetables	
	Preparation of vegetables Compare baking with boiling	
4	**Milky Way**	
	Value of milk	Promote interest if necessary by making milk cups and having a contest
	Plan good suppers	Food Models Make good supper posters
	Correct habits of eating Chew foods thoroughly Rest before and after eating Happy at meal time Digestion	
	Eating between meals When to eat candy	Poster or contest on eating candy between meals
1	**Long Sleep Mountain**	
	Value of sleep How much is needed	Sleep contest if needed

II. Project Colds

No. of Lessons 3

Prevention of Colds
- Keep body up to weight and in good condition
- Plenty of Fresh Air and Sunshine
  - Exercise and Rest
- Avoid spreading germs
  - Use of handkerchief

III. Project Mental Hygiene

No. of Lessons 1 - 2

Mental Hygiene
- How to acquire good mental habits
  1. Learn to be happy by liking to do what has to be done. Find reason for liking to do the task
  2. Learn to do things accurately and thoroughly. Give whole hearted attention
  3. Learn to be prompt by keeping appointments
- Dependency
- Play Fair in games - Self-control

IV. Project Health Practices

No. of Lessons 2

Develop health practices from year's work

Work these habits into life of each student

Make poster illustrating these

Grade VI.

I. Project — Wise Choice of Food

No. of Lessons	Main Topics for Discussion	Illustrative Material
10	What Foods should be eaten every day	
	Why should we know anything about our food	
	Our food builds our bodies	
	How does our food build our bodies?	
	What are the different parts of our body	Let each child feel of his own body to tell the different parts
	Bones	
	Muscle	
	Blood	Start Health Book
	Teeth, Nails, etc.	
	In order to know how to build all these different parts we have to know of what they are made	
	Bones - Of what are they made	
	What is needed to build good bones?	Illustrate health books with foods that contain these substances
	Teeth - Of what are they made?	Have children look it up
	What foods are needed to build good sound teeth?	Illustrate in Health Book, Have a milk contest
	Blood - Of what is blood composed?	Children look it up at home
	How can we build good, red blood?	
	List of foods that contain iron	Illustrate

Muscles -	
Of what is muscle composed?	Look it up at home
What kind of foods build good muscles	Illustrate these in Health Book
Formulate from these foods a list of foods needed every day	Have this list in Health Book and check diet each day. Give star for perfect week.
	Experiment with rats giving one a good diet and other a poor diet

III. Project Health Preservation

No. of Lessons		
	Best health	
4	Aim to keep body in perfect physical condition	Pictures of well nourished, healthy children and compare with the opposite type
	Up to weight for height	
	Care of eyes, ears, nose, and throat.	
	Cleanliness	
	Body, clothing, houses, yards, etc.	Cleanliness contest
	What are germs?	
	How are they spread?	
	Interest in Community Health	
	Prevent spread of disease germs	Make poster
	Investigate sanitation of Dairy, Bakery, stores	Write about trips to these places in Health Book
	Water supply	

III. Project Calories

No. of Lessons	How much food should be eaten every day	
6	How is food measured? Calorie	Table of calorie value of foods
	Some foods give more calories than others Compute number of calories eaten. How many calories are required?	Keep a list of foods and amount eaten for 2 days
	Activity How does it effect requirement? Kinds of activity for under wt. and over wt. children	
	Plan meals containing correct number of calories and food principles.	Use food models Make good meal posters-Breakfast, Dinner & Supper.

IV. Project Safety

No. of Lessons	Safety -	
3	Why prevent accidents?	Give a little data on number of accidents
	How can we prevent accidents Form safety first habits and write in Health Book	Have children work them out. Habits in Health Book Make Safety posters

V. Project Health Play

No. of Lessons	
3	A Health Play is very beneficial but must be used with discretion. It should never be given at night nor should children who are very much underweight have very active parts. This could be correlated with language work very easily.

A Typical Lesson Plan

Grade 4

Lesson 1 of Project I. What must I eat for breakfast in order to grow big and strong.

Topic of Lesson:

Why milk should be included in the breakfast.

Teacher's Aim: General

To teach the children what kind of breakfasts they should eat.

Specific

To teach the children why we should drink milk for breakfast.

Pupil's problems:

Why should I drink milk for breakfast?
How much milk should I drink?

Teaching Points:

We must have big breakfasts in order to grow into strong, healthy boys and girls.

Milk is one essential for breakfast because it makes us grow.

The amount of milk required.

Subject Matter	Method
	We have all decided that we want to grow to be big, strong, healthy boys and girls.
	Now in order to grow to be big, strong boys and girls, we must have a good, well chosen breakfast.
It must have the foods in it that will make us grow into strong, healthy boys and girls.	What do we mean by a good, well chosen breakfast?
	Now let's see if we can figure out one very essential of a breakfast.
Milk	Yes milk is very important and should always be included for breakfast.
	Why do you suppose milk is such an important food? Let's see if we can find out today.
Size, hair, eyes, pep.	Can you all see this picture of these two rats? What are the chief differences in these two rats?
I. Steak Potatoes Other veg. Bread II. Steak Potatoes Other veg. Bread Milk	Now why do you suppose they are different? I'll write what each one had to eat, on the board.
Milk - Yes it was. It made it grow.	Now what made the difference? Was milk necessary in this case?
Milk	How many have ever had a little kitten?
	What did you feed it when it was real little?
Milk makes kittens grow.	Did milk make it grow?
	How many have a little baby in their home?
Milk.	What does it live on chiefly?

Milk makes the baby grow.

He gets bigger and stronger.
Also mother weighs and measures it and knows it grows.

All boys and girls should drink milk.
Milk makes boys and girls grow into strong, healthy young men and women.

Boys and girls should drink at least 4 glasses of milk a day in order to be big, strong boys and girls.

Does the baby grow?

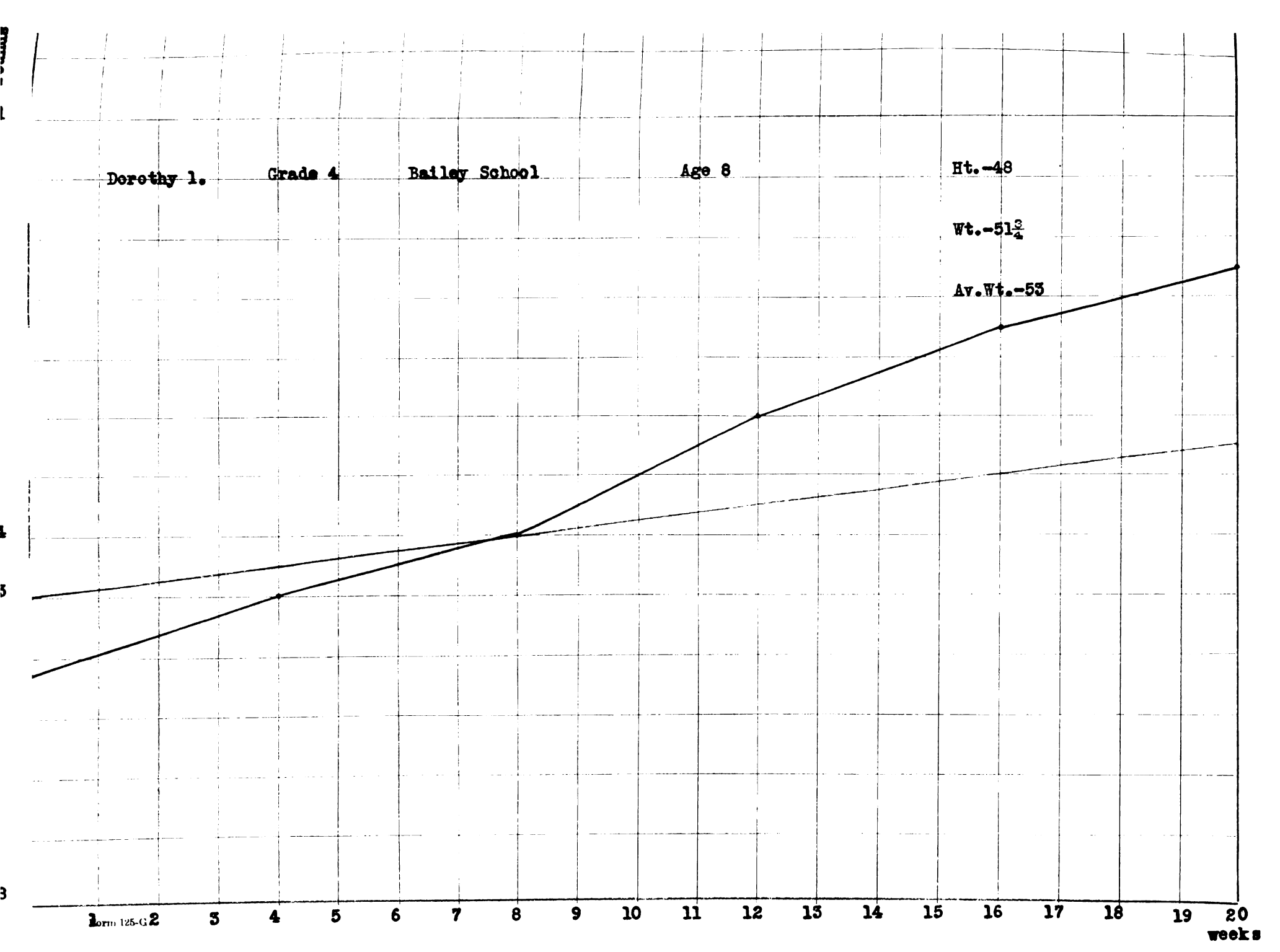
How do you know the baby grows?

Now then we have found out that milk makes rats, kittens and babies grow.
What about you children?
Should you drink milk?

Why should boys and girls drink milk?

How much milk do we have to drink every day in order to be strong and healthy?
How many drink one glass, two glasses, three glasses, or four glasses a day?
Let's find out which is the best amount.
Dr. Sherman performed an experiment on some children and found that every boy or girl grew better if he had 4 glasses of milk each day.
Now then how many glasses of milk are we all going to drink every day?

This week how many would like to have a milk contest? For each glass of milk that you drink you place a white slip in this little paper milk cup. I have one for each child and they will be pinned up here. Next time we will count the slips and a star will be given for a perfect week.


Dorothy 1. Grade 4 Bailey School Age 8
Ht.-48
Wt.-51¾
Av.Wt.-53
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
weeks

Form 125-G

Before giving any actual lessons in health the height, weight and age of each child in E. Lansing group was taken so that it would be possible to determine the percentage of under or over weight that was present. The same data were obtained for the control group of children. The normal weight was obtained from the "Baldwin Wood Ht. Wt. Age Tables" and the percent over or underweight computed.

This information aids in deciding which phases of health need most emphasis. For instance, if there was a very large percentage of under wt. children, it would be well to start out with lessons that would produce the greatest gains, such as, lessons on rest and amount of food. Actual gaining helps to stimulate interest. The children enjoy watching their actual weight line gradually go above the normal weight line on their charts. Even if the actual weight line is above the normal weight line, or in other words the child is over weight, a continuous gain is desired.

The height and weight of both the E. Lansing and control groups of children were taken at the beginning of the experimental period and at the

end so that the actual gain, during this time could be determined. This actual gain is compared with the expected gain. The expected gain was determined from "Baldwin & Wood Tables" which give the normal gain per month of a boy or girl of a certain age.

The children in the control group (4th, 5th and 6th grades) were weighed and measured March 1st and again June 15, 1926. The East Lansing children of the 6th grade were weighed and measured March 2nd and again June 17, 1926. The 4th and 5th grades were also weighed and measured at this time, but the data include 27 fourth grade and 16 fifth grade children who had been weighed and measured on Nov. 26, 1925. This extra two months naturally, would increase the actual gain in weight of these children, but at the same time it would increase the expected gain, so consequently when the percentage of the expected gain is calculated this difference is eliminated.

In 1927 the control group of 4th, 5th and 6th grade children was weighed and measured March 22nd and May 16th covering a period of two months. The East Lansing children of 4th, 5th and 6th grades were weighed and measured March 17th

and May 17th, an equal period of time.

From the data of both years the actual gains in weight are computed and compared with the expected gains for the same period of time. The percent of expected gain is calculated by dividing the actual gain in weight by the expected gain in weight and multiplying by 100. These results are given in Table II. The Totals and averages of the actual gains, the expected gains and percent of expected gains are calculated and given in this table. The percentage over or under weight is given in column 4 of Table II. These figures show that the percent over weight of some of the children is rather high. In such a case the expected gain may not be attained. The children in both the control and the E. Lansing groups were not given physical examinations, so that they may have had some physical defect which would tend to retard their gaining in weight. It is interesting to note that in the 5th grade, where the smallest gains in weight were made, the subjects discussed in the health class were chiefly cleanliness and community health, subjects which are not particularly conducive to gaining in weight.

Thus there may have been physical defects in either group which may have been a hindrance. However, this condition would probably be the same in both groups.

In table III a comparison of the gains in weight of the E. Lansing and Control groups is given. In grade 4 (1926) of the E. Lansing group the average percent of expected gains in weight is 85 while in the same grade of the control group it is 35, a difference of 50. In the 5th grade of the E. Lansing group the average percentage is 57, while in the control 56. There is no difference in this case due, perhaps, to the type of subjects taught in this grade as mentioned before. In the 6th grades of the two groups, there is a difference of +22 between the expected gains (44% in the E. Lansing and 22% in the controls).

The gains made in 1927 are much better than those made in 1926. This suggests that the longer the work is continued the more effective it becomes. In the fifth grade the average percent of expected gain is 97, while in the fifth grade of the controls it is only 27. The difference is +70. The sixth grade showed the

greatest gain. The average percent is 118, while in the control it is 37, a difference of +73.

It is interesting that the average percent of expected gain in the 5th grade of the E. Lansing group in 1926 is 57, while in 1927 it is 97, a gain of 40. In the 6th grade there is still a greater gain--from 44% to 118 %, a difference of 74. Another interesting point is that the average percent of expected gain of the fifth grade children in 1926 is 57, while that of the same children in 1927 (now 6th grade) is 118, a gain of 61. The total average of these percentages of all grades in both years in the E. Lansing group is 80% while that in the control group is 37%, a difference of +43.

These data point to some of the favorable results that may follow organized health instruction in elementary schools.

Table 11.
Weights of Children

Grade 4

East Lansing 1926 Controls

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
France A.	0	3½	0	-8
William B.	3¾	3½	107%	-7
Ernest B.	¼	2	12½	-3
Junior C.	1¾	3½	50	+.3
Aletha C.	3	3½	85	-2
Sheldon C.	1¾	2	87	+4
Leona D.	1½	3½	42	-14
Virgil D.	4	2½	114	+4
Harold E.	5¾	3½	164	-.6
Dick G.	4¼	3½	121	-3
James H.	2½	3½	71	-.9
Esther H.	¼	2	12½	+3
Dorothy T.	2¾	3½	78	-.9
Harold J.	-¼	3½	0	+2
Helen D.	-⅛	3½	0	-3
Catherine M.	3½	2	175	-6
Robert N.	4½	3½	128	-8
Clarence N.	2¾	3½	78	+6
Jack P.	6⅛	3½	185	---
Marg. R.	2	2	100	+.7
Marie S.	¾	2	37	+11
Robert S.	4¼	2	212	-4

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Barbara S.	1½	2	75	-6
Marian A.	1¼	2	63	-4
Clara S.	2	3	67	-6
Shirley F.	¼	2	12	-11
Eleanor J.	-¾	2	0	-22
Gladys K.	3	2	150	+15
Laurence M.	¾	2	38	-11
Neoma D.	-¾	2	0	-13
Mary B.	¼	2	12	-12
Betty H.	1¾	2	87	+31
Janet C.	-1¾	2	0	-14
Dorothy M.	0	2	0	-13
Marion M.	3½	2	175	---
James P.	2¼	2	112	---
Gerrith G.	¼	2	12	-3
Charles W.	-1	2	0	---
Gertrude W.	-¾	2	0	-1
Frances D.	-1	2	0	-7
Maxine D.	2½	2	125	+7
G.L.B.	1½	2	75	-4
Robert H.	1	2	50	-12
Christine P.	1¾	2	87	-8

Table 11
Weights of Children

Grade 4

East Lansing 1926 Controls

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Granger S.	5	3½	142	+6
Myrtle S.	4	3½	114	-3
Jerry S.	2¼	2	112	—
Mary W.	1⅛	3½	42	-4
Wellington	1	2	50	-4
Gerald W.	2¼	2	112	-10
Robert B.	3½	3½	100	-7
Robt. B.	1	2	50	+1
Dennis B.	6½	3½	185	+5
Jane C.	1¾	2	87	-4
Irene D.	-¾	2	0	-4
John F.	-1	3½	0	-2
Josephine G.	.6	3½	171	+6
John G.	2⅛	3½	71	-5
Mary H.	3	2	150	-5
Jackson H.	7	2	350	-.7
Otto H.	0	2	0	
Mary Hess.	3½	2	175	-5
Elaine J.	¾	2	37	-23
Norman K.	4	3½	114	+5
Robt. L.	1	2	50	+6
Jeanette L.	.3	3½	85	+15

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Dorothy K.	-¼	2	0	—
Monta O.	4¾	2	237	-9
Kathryn R.	5¾	2	287	+13
June D.	2	2	100	-1
Pauline K.	-1	2	0	-9
Frances H	¾	2	37	+3
Lois R.	¾	2	37	-17
Betty R.	¼	2	12½	-5
Harold W.	1¾	3	58	-9
Bernice S.	-2	2	0	-10
Reva C.	-2¼	2	0	-14
Vevo C.	¼	2	25	-15
Peggy W.	-¾	2	0	-6
Winslo M.	1⅛	4	37	-4
Billy D.	-3¼	3	0	—
Marg. R.	-¾	2	0	-8
Maurice L.	1¾	3	58	-5
Theo W.	-⅛	2	0	-8
Pauline L.	3½	2	175	-16
Rolland C	1¾	2	63	+16
Dietrick B.	2	2	100	-1
Totals	33	92	2366½	
Total Av.	.76	2.14	55	

Table 11
Weights of Children

Grade 4

East Lansing 1926

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Elsie M.	1½	2	75	-5
Marg. M.	1¼	2	62	-2
Graham P.	2½	3½	71	+23
David P.	2	2	100	+10
Gordon P.	1	2	50	-5
Theron S.	½	2	25	+6
Wilda S.	-¼	2	0	+1
Robt. T.	0	3½	0	-4
Ewand U.	2½	2	125	+4
Don W.	5	3½	145	+11
Maude W.	½	2	25	-6
Roger W.	1½	3½	43	-5
Total	130¾	155½	4777	
Total Av.	2.33	2.77	85%	

Controls

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent

Table 11.
Weights of Children

Grade 5

East Lansing 1926 Controls

Name	Actual gain lb.	Expd. gain lb.	% of Expd. gain Percent	over or under wt. Percent
Barbara B.	2¾	3½	78	-8
Roda C.	-2	2	0	+12
Crist, D.	-½	3	0	-6
Milton E	1	2	50	+1
Elva F.	6¾	3½	193	+12
George G.	-1¼	3½	0	-2
Dawn G.	2	2	100	+7
Beatrice H.	6¼	2	312	+1
Edna H.	-1¼	2	0	-4
Mildred H.	-2½	3	0	-12
Ingersol	-1	2	0	+2
Annis K.	⅛	2	25	+14
Stanley K.	-1	2	0	+1
Carol K.	1	2	50	-19
Virginni L.	1	2	50	-12
Verenna L.	3	3½	85	-2
Althea L.	1⅛	2	75	+8
Donna M.	3½	3½	100	-11
Mercer P.	-1	2	0	-6
Gladys R.	-⅛	2	0	-8
Gerald R.	-1¾	2	0	-10
Joseph R.	4	3½	114	+5

Name	Actual gain lb.	Expd. gain lb.	% of Expd. gain Percent	over or under wt. Percent
Basal T.	1¾	2	87	---
Pauline T.	6¼	2	312	+18
Barbara S.	0	2	0	+27
Monnell S.	1¾	2	87	-2
Robt. B.	½	2	25	+10
Helen A.	-1⅛	2	0	+1
Emil B.	2¼	2	113	-3
Eddie G.	1¼	2	63	+3
James H.	-¾	3	0	-10
Richard R.	-⅛	2	0	-12
Louise D.	3	2	150	+3
Eletus B.	0	2	0	-4
Melvin F.	1¼	2	63	+2
Leoena C.	4¼	2	212	-14
Eliz. A.	4	2	200	-3
Jean B.	1¼	3	41	-6
J.B.H.	¼	2	12	-4
Robert H.	¼	2	12	+9
Maynard G.	-1	2	0	-1
Elsie S.	-⅛	2	0	-12
Lucile G.	-2	2	0	-17
Eliz. H.	2⅛	2	125	+4

Table 11
Weights of Children

Grade 5

East Lansing 1926 Controls

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain	over or under wt.
		Pounds	Percent	Percent
Richard S.	1¼	2	63	-5
Dean W.	-1¾	2	0	+16
Louise W.	7½	2	375	+20
Juanita A.	7¼	3½	207	-3
Dorothy B.	2¼	2	113	+12
Marshal C.	4½	3½	127	-11
Donald D.	-¾	3	0	-2
Miriam D.	3¾	2	187	-4
Clara F.	8	3½	228	-3
Hugo F.	0	3½	0	-5
Martha F.	¼	2	12	-8
Harold F.	1¼	2	63	-2
Mary G.	2¾	2	137	+5
Nita H.	8¼	3½	235	---
David J.	½	2	25	+1
Jerry K.	½	3	17	+6
Phyllis L.	3	2	150	-19
Elgin L.	-½	3	0	+8
Frederick O.	¼	2	12	+1
Clara O.	¼	3½	7	+2
Billy P.	¼	2	12	+3
Arthur R.	3	4	75	+1

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain	over or under wt.
		Pounds	Percent	Percent
Maxine H.	1	2	50	-12
Bertha L.	3¾	3	125	-17
Esther D.	½	2	25	-14
Robert H.	-¾	2	0	---
Henrietta H.	1¼	2	12	-3
Russell K.	0	2	0	-4
Frances M.	-¾	3	0	-10
Esther D.	¼	2	12	+1
Claudia R.	¼	2	12	-10
Eleanor P.	-2¾	2	0	-7
Patrica J.	1	2	50	-5
Edward R.	0	2	0	+5
Lottie L.	-6¾	2	0	-12
Kathleen W.	1½	2	75	-4
Arthur J.	2	2	100	-5
Alice M.	2¼	2	112	+38
Russel T.	1¼	2	63	-3
Marg. S.	2	2	100	+4
Mary W.	-¾	2	0	-16
J.B.W.	3	2	150	-8
Bethany T.	3¼	2	162	-6
Beula M.	0	2	0	+6

Table 11.
Weights of Children

Grade 5

East Lansing 1926

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Fred'k P.	-1½	3	0	-1
Meulo P.	-1½	4	0	-1
Goldie R.	¼	3½	7	-10
Vernon S.	1½	3½	43	+4
Homer S.	1	3½	28	-10
Stewart C.	¼	2	12	-5
John S.	1½	2	75	+6
Mary V.	1	3½	28	-11
Jean W.	3¼	2	162	-4
Joe W.	1	2	50	-3
Totals	80.75	142	3683	
Tot. Av.	1.49	2.63	56.6	

Controls

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Marjorie	-¾	2	0	+3
Audrey P.	5½	2	275	+21
Richard M.	1	2	50	+1
Rose S.	-1½	2	0	-16
Totals	56.50	100	2875	
Tot. Av.	1.17	2.08	56.2%	

Table 11.
Weights of Children

Grade 6

East Lansing 1926

Name	Actual gain lb.	Expt'd gain lb.	% of Expt'd gain Percent	over or under wt. Percent
Barbara B.	¼	3	8	-16
Corydon C.	-5	3	0	-4
Virginna D.	1¾	2	87	+1
Otto D.	-⅛	3	0	-8
Marg. D.	1	4	25	-3
Harold E.	3	2	150	+5
Alvin E.	1½	3	50	+5
Fred'k G.	0	2	0	+3
Lyle G.	-½	3	0	+5
David H.	⅛	3	16	-4
Walter H.	-¾	3	0	-12
Anna J.	5¾	3	191	+6
Ellen L.	2	3	66	-10
Willard K.	-2½	2	0	+4
Jack L.	2	3	66	+3
Beulah M.	-½	3	0	-17
Oscar R.	-1½	3	0	-1
Sade R.	1	3	33	-10
Ruth R.	0	2	0	-14
Irwyn R.	-2	3	0	-7
Donald W.	1	3	33	+17
Roland Y.	2	3	66	-2

Controls

Name	Actual gain lb.	Expt'd gain lb.	% of Expt'd gain Percent	over or under wt. Percent
James G.	2	4	50	-13
Evelyn G.	-¾	3	0	-7
Betty T.	0	3	0	+40
Lillian R.	-¼	3	0	-8
Helen L.	⅛	3	16	-1
Jack M.	2½	3	83	-5
Eunice M.	8¼	3	275	+8
Heather W.	-7	4	0	-9
Eva W.	5¾	4	143	-3
Madaline V.	¾	3	25	-9
Cleo E.	3½	4	87	+8
Ruth D.	2¼	4	56	+22
June T.	2¾	2	137	-6
Harris B.	4	4	100	-8
Kilsig P.	-¾	3	0	-13
Earl P.	4½	4	112	-10
Esther P.	-2¾	3	0	-10
Jack K.	2½	3	83	-3
Helen H.	¾	2	37	-9
Helen K.	⅛	3	16	-2
Alma B.	2¼	3	75	-3
Gertrude B.	1½	3	50	-5

Table 11.
Weights of Children

Grade 6

East Lansing 1926

Name	Actual gain lb.	Expld gain lb.	% of Expld gain Percent	over or under wt. Percent
Julesde B.	3¼	3	108	-13
Betty B.	6	2	300	-1
Ray D.	3	4	75	-.9
Faye D.	3½	4	87	-18
Robert F.	5¼	3	175	+3
Donald G.	.4½	2	225	-1
Margaret H.	-½	2	0	-18
Arthur H.	3	2	150	-8
Edwin J.	¾	3	25	+8
Mag. K.	-¾	3	0	-19
Avon K.	-1¾	3	0	-4
Durwell K.	2¼	3	75	-4
Pauline M.	3⅛	3	116	+6
Jack M.	¾	2	37	----
James M.	½	3	16	-7
Helen M.	5	3	166	+5
Karl N.	0	3	0	-14
Helen O.	-5¼	2	0	+24
Mervym P.	¾	3	25	-3
Elis. P.	2¼	3	75	+8
Harold P.	4¾	3	158	+12

Controls

Name	Actual gain lb.	Expld gain lb.	% of Expld gain Percent	over or under wt. Percent
Robert T.	2⅛	4	62	+4
Robert V.	2	3	66	+9
Joyce K.	4½	4	112	+1
Fred R.	-½	4	0	-4
Dorothy S.	-2	2	0	-8
Helen E.	4¼	3	141	-5
Edna G.	1¾	3	58	+5
Louis S.	-1	3	0	+1
Leana G.	-1	3	0	+10
Eunice W.	-4½	2	0	+2
Orvil T.	-1½	2	0	-1
Marg. W.	-3⅛	3	0	-20
Neil P.	-2	3	0	----
Moleen S.	-1¼	3	0	-9
Virginna	-2¼	3	0	-4
Ruth R.	-3¼	2	0	+8
Irene G.	+1	4	25	+25
Total	26.50	122	1809	
Tot. Av.	.679	3.1	21.9	

Table 11.
Weights of Children

Grade 6

East Lansing 1926 Controls

Name	Actual Gain lb.	Expt'd Gain lb.	% of Expt'd gain	over or under wt.	Name	Actual gain lb.	Expt'd gain lb.	% of Expt'd gain	over or under wt.
			Percent	Percent				Percent	Percent
Lily S.	½	3	16	-19					
Charles S.	¾	3	25	-3					
Frank T.	½	3	16	+9					
Fred W.	6¾	3	225	-3					
Mildred W.	1¾	4	43	-10					
Elsie W.	2¾	4	68	-8					
Totals	62.25	143	2997						
Total Av.	1.27	2.9	43.7						

Table 11.
Weights of Children

Grade 5

East Lansing					1927	Controls				
Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent		Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain Percent	over or under wt. Percent
Robert B.	½	1½	33	-5		Cletus B.	-¼	1½	0	-8
Jerry S.	3¼	1	325	+8		Reva C.	½	1	50	-8
Lysle S.	-¼	1½	0	+2		Veva C.	¼	1	25	-17
Jack P.	-½	1	0	-3		June D.	1¼	1	125	-3
Myrtle S.	-¼	1½	0	—		Clyde F.	-¼	1	0	-4
Wilda S.	¼	1	25	+8		Shirley F.	1	1½	67	-12
Esther H.	¼	1	25	—		Delina F.	½	1	50	+1
Helen W.	¼	1½	16	-2		Maxwell F.	½	1½	33	-4
Betty W.	2¼	1	225	-2		LaVere F.	½	1	50	+18
Aletha C.	0	1½	0	—		Pauline K.	2	1	200	-6
Lucile K.	¼	2	13	-13		Dorothy K.	3	1	300	—
Clarence N.	1½	1½	100	+8		Clifford K.	1	1	100	+6
Virgil D.	-3	1½	0	+6		Maurice L.	-2¾	1½	0	-9
Wellington F.	-1¾	1½	0	—		June L.	-1¼	1½	0	+3
Billy K.	4	1	400	+13		Pauline M.	-½	2	0	-8
Junior C.	1	1½	66	—		Birwood M.	-1½	1	0	+4
Robert S.	1	1	100	-1		Christine P.	3¼	1	325	-5
Gerald W.	¾	1	75	-8		Marthajane Q.	3¾	1½	250	-19
James H.	3¾	1½	250	—		Betty R.	0	1½	0	+3
Frances A.	¾	1½	50	-7		Marg. R.	¾	1½	50	-7
Sheldon C.	-¼	1	0	+4		Kathryn R.	0	1	0	+13

Table 11.
Weights of Children

Grade 5

East Lansing 1927

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain	over or under wt.
			Percent	Percent
Robert N.	1½	1	150	-10
Granger S.	-¼	1	0	+6
Harold E.	¼	1½	16	-6
Ernest B.	1	1	100	-2
Lanette P.	5	2	250	+6
Eliz. T.	1½	1½	100	-13
Nedra K.	2	1	200	-9
Katherine	N.S	1	500	—
Marg. R.	-½	1	0	-1
Grace B.	1	2	50	+3
Leslie G.	¾	1½	50	-2
Mary H.	4¼	1	425	-1
Don P.	5	1½	333	+3
Mary H.	3¼	1	325	-3
Gordon P.	1½	1	150	-5
Gail L.	1¼	1	125	—
Robt. B.	1	1	100	+4
Jimmy A.	¼	1	25	+17
Elsie M.	3	1	300	-4
Maude W.	1½	1	150	-3
Theron S.	2½	1	250	+17
Jane C.	2	1	200	-5

Controls

Name	Actual gain lb.	Exp. gain lb.	% of Exp. gain	over or under wt.
			Percent	Percent
Beatrice R.	-¼	1½	0	-19
Neve R.	1	1	100	-17
Robt. S.	¼	1	25	-2
Betty S.	0	1	0	+4
June T.	¼	1	25	-14
Robt. V.	1	1	100	-2
Billy W.	½	1½	33	-8
Peggy W.	0	1½	0	-8
Theo W.	-2¾	1½	0	-5
Marg. S.	2	1	200	-12
Marion A.	1¾	1	175	+10
G.L.B.	1	1	100	+4
Mary B.	¼	1	25%	-11
Billy D.	-7¼	1½	0	-2
Neomia D.	¾	1	75	-14
Gerrith G.	-1¼	1	0	-4
Gladys K.	2½	1	250	+27
James P.	¼	1	25	+4
Charles W.	½	1½	33	+4
Gertrude W.	1¼	1	125	-3
Totals	13½	49	2916	
Tot. Av.	.32	1.19	27%	

Table 11
Weights of Children

Grade 5

East Lansing				1927	Controls			
Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain Percent	over or under wt. Percent	Name	Actual gain lb.	Expc'd Gain lb.	% of over Expc'd gain Percent	or under wt. Percent
Robt. L.	-¼	1	0	+3					
Marg. G.	2¼	1	225	+6					
David P.	¾	1	75	+9					
Elaine J.	1½	1	150	-20					
Jackson H.	½	1	50	+2					
Jeanette L.	½	1	50	+22					
Marg. A.	1	1½	66	-11					
May G.	3	1	300	+1					
Jeanette S.	-¾	1½	0	-7					
Robt. T.	2½	1½	166	+1					
Donald W.	-1½	1	0	+6					
Roger W.	½	1½	33	-7					
Robt. B.	1¾	1½	116	-8					
John F.	0	1	0	+6					
BeddettaG.	3¼	1½	216	-9					
Minchin T.	2¼	1½	150	+19					
Vivian N.	2	1	200	-12					
Donna L.	1¼	1½	83	-4					
Graham P.	¾	1	75	+17					
John G.	½	1	50	-2					
Norman K.	-1	1	0	+3					

Table 11.
Weights of Children

Grade 5

East Lansing 1927					Controls				
Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain	over or under wt. Percent	Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain	over or under wt. Percent
Dennis B.	-¼	1	0	+18					
Richard D.	1	1	100	-5					
Totals	78	80⅓	7607						
Tot. Av	1.18	1.21	97%						

Table 11.
Weights of Children

Grade 6

East Lansing 1927

Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain Percent	over or under wt. Percent
Dick C.	2	1½	133	+7
Roda C.	4	1½	266	+23
Dyer C.	1¼	1½	83	-4
Mary H	-¾	1½	0	+7
Annis K.	2	1½	133	+11
Stanley	3¾	1½	250	+8
Carol K.	½	1½	33	-21
Virginnia L.	1¼	1½	83	-13
Althea L.	1¼	1½	83	+7
Marguita M.	1¼	1½	83	+16
Mercer P.	½	1½	33	+3
Louise W.	¾	1½	50	+20
Richard S.	-¾	1½	0	-3
Gladys R.	2	1½	133	-5
Gerold R.	1¼	1½	83	-5
Barbara B.	1	1	100	-9
Elva F.	3½	1	350	+20
Clara F.	3½	1½	233	+15
Vierenna L.	¼	1	25	-2
Donna M.	6¾	1½	450	-2
Joseph R.	1¼	1½	83	+7

Controls

Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain Percent	over or under wt. Percent
Kathryn A.	3	1½	200	+6
Junior C.	-¼	1½	0	+4
Claude C.	-1	1½	0	+14
Althea E.	¾	1½	50	+21
Harrietta F.	-2½	1½	0	-2
Melvin F.	¼	1	25	+1
Maynard G.	1¾	1½	117	-4
Bruce H.	¼	1½	17	-6
James H.	0	1	0	-3
Robt. H.	3	1½	200	---
Fred H.	¼	1½	17	+21
John J.	-1¾	2	0	+7
Kenyon V.	-½	1½	0	+4
Leo K.	2	1½	133	+34
Malcohn L.	5	1½	333	+3
Lotie L.	-½	1½	0	+2
Helen L.	1¾	1½	117	---
Gladys L.	4	2	200	---
Alice M.	¾	2	38	+45
Ellen M.	-½	2	0	+38
Audrey P.	2½	1½	167	-27

Table 11
Weights of Children

Grade 6

East Lansing 1927 Controls

Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain	over or under wt.	Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain	over or under wt.
			Percent	Percent				Percent	Percent
Dean W.	1¼	1½	83	+34	Edward R.	0	1½	0	-9
John Y.	1½	1½	100	+4	Elsie S.	5	2	250	---
Juainta A.	4	1½	266	-11	Francis T.	1	2	50	+2
Mary B.	½	1½	33	-4	Basil T.	-¾	1½	25	+4
Jean B.	1	1½	66	-2	Pauline T.	½	2	0	+25
DorothyB.	2⅓	1½	166	+6	Heather W.	1¾	1½	117	+17
Stewart C.	3	1½	200	-5	Elis. B.	1	1½	67	+6
Marshal O.	1¼	1½	83	-12	Jean B.	⅓	2	25	-5
Helen E.	4¼	2	213	-3	Lorna C.	⅓	1½	33	-11
Mildred E.	4½	2	225	-10	Eliz. c.	-¼	1½	0	-8
Harold F.	1¼	1½	83	+4	Eddie G.	0	1½	0	+6
Martha F.	0	1½	0	-4	Irene G.	0	1½	0	+21
Hugo F.	1	1½	66	-6	Henrietta	2¼	1½	150	-5
Mary G.	1¾	1½	116	+3	J.B.H.	-¾	1½	0	---
Nita H.	-¼	1½	0	-2	Maxine H.	0	1½	0	-8
Davis J.	3½	1½	233	+5	Eliz. H.	-½	1	0	+3
Paul K.	-¼	1½	0	+14	Arthur G.	1¼	1½	83	-1
Phyllis L.	¾	2	38	-17	Lois J.	½	2	25	-9
Elgin L.	4	1½	266	+9	Robert N.	1¾	1½	117	+10
Fred O.	4½	1½	300	+6	Eunice M.	2¾	2	138	+10
Arthur P.	2¾	2	138	+5	Jack M.	-1¼	1½	0	-6
Clara P.	-½	2	0	+4	Richard M.	1¾	1½	117	---

Table 11
Weights of Children

Grade 6

East Lansing 1927 Controls

Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain Percent	over or under wt. Percent
Meulo P.	1¼	2	63	+1
John P.	2¾	1½	183	+12
Billy P.	1¼	1½	83	+3
FredP.	3¼	1½	216	---
Ruth P.	½	2	25	-3
Goldin R.	2¼	1½	150	-6
John S.	½	1½	33	---
Homer S.	-¼	1½	0	-8
Theoda S.	¾	1½	50	-7
Marg. T.	2	1½	133	+18
Mary V.	1¾	1½	116	-6
Jean W.	2	1½	133	-6
Totals	96¾	84½	6547	
Av. Tot.	1.81	1.53	118%	

Name	Actual gain lb.	Expc'd gain lb.	% of Expc'd gain Percent	over or under wt. Percent
Lillian R.	-¾	2	0	-10
Esther R.	3¼	1½	217	-3
Claudia R.	-2½	1½	0	-15
Roberta R.	-¼	2	0	+2
Barbara S.	½	1	50	+32
Madaline W.	1¾	1½	117	-8
Eva W.	0	2	o	+5
Kathleen	¼	1½	17	-2
Totals	37	81	3212	
Tot. Av.	.72	1.58	45%	

TABLE 111

Comparison of Gains in Weight

Grade	Date	East Lansing Schools: Act. gain av.	Exp. gain av.	% of exp. gain av.	Controls: Act. gain av.	Exp. gain av.	% of exp. gain av.	Difference in % of exp. gain (av.) in East Lansing and controls
4	1926	2.33	2.77	85%	.76	2.14	35%	+50
5	"	1.49	2.63	57	1.17	2.08	56	+ 1
6	"	1.27	2.9	44	.68	3.1	22	+22
5	1927	1.18	1.21	97	.32	1.19	27	+70
6	"	1.81 ~~1.18~~	1.53	118	.72	1.58	45	+73
	Total	8.08	11.04	401	Totals 3.65	10.09	185	
	Av.	1.62	2.21	80	Av. .73	2.02	37	+43

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