

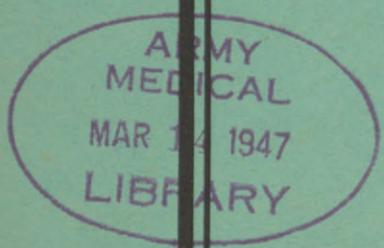
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NUTRITION EDUCATION IN HIGH SCHOOLS

Suggestions for Improving
Food Habits



BULLETIN NUMBER 336

Published by
EUGENE B. ELLIOTT
Superintendent of Public Instruction
Lansing, Michigan
1945

Michigan
STATE OF MICHIGAN
DEPARTMENT OF PUBLIC INSTRUCTION

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FOREWORD

Many prevailing diseases and physical defects have been traced directly to a deficient diet. The newer scientific knowledge of nutrition has taught what is required to nourish the human body, how to attain a higher level of mental and physical vigor, and how to prolong the active productive span of life.

Health defects due to malnutrition are found among all age groups and at all economic levels. The role of the schools in this regard is obviously one of bringing to the pupils lessons of good nutrition; lessons which will help pupils to learn which foods are necessary; and lessons in how to make the best possible use of available foods and to form favorable attitudes toward a wide variety of foods. Learning to eat the right foods at appropriate intervals and in required amounts is a goal for which to strive.

This bulletin has been prepared as an aid to school administrators and teachers in high schools who wish to make nutrition education a part of the total curriculum and for all pupils. It makes suggestions for extending into home living the nutrition values learned in the school. It contemplates a long-time program which will develop interests and attitudes strong enough to influence actions throughout adult life.

This bulletin was drafted by the Nutrition and the Schools Committee, a sub-committee of the Michigan Nutrition Committee. To them I express my gratitude for initiating this timely study and for giving so generously of their information and effort. Special acknowledgment is due the following for reviewing portions of the manuscript and making suggestions for improvement: Adelia Beeuwkes, School of Public Health, University of Michigan; Marie Dye, School of Home Economics, Michigan State College; Mary Lee Hurt, Home Economics Education Division, Michigan State College; and Alice Smith, Michigan Department of Health.

I wish also to express my sincere thanks to the committee of the Department of Public Instruction which edited and documented the manuscript and especially to Miss Mabel E. Rugen who gave extensively of her time and counsel.

Eugene B. Elliott

Superintendent of Public Instruction

NUTRITION EDUCATION IN HIGH SCHOOLS

Over forty per cent of the population of the United States is malnourished. Evidence from dozens of surveys conducted during the past ten years indicates poor nutrition as one of the major health problems in all ages, in various economic groups, and in all sections of the country. When the diets are evaluated in terms of whether they contain certain foods essential to good nutrition it has been found that over fifty per cent of them are inadequate.¹

Many reasons may be found for these nutritional deficiencies. In the first place, the science of nutrition is young. It is only recently that sound evidence indicating the nature and extent of these deficiencies has become available. In the second place, many of the dietary deficiencies are not apparent to the casual observer. They are hidden within the tissues of the body. Hence accumulative results do not appear until years later. Physicians tell us that many of the so-called degenerative diseases of older age are related to inadequate nutrition. Third, food habits are difficult to change. There are many superstitions and misconceptions regarding the values of certain foods and food combinations in our diets. Fourth, educational groups, including the school, have not given sufficient attention to the development of practices and understandings to promote better food habits.

What we eat is an important factor in what we are. High school boys and girls are being asked to assume increasing responsibility not only for the selection of their own diets but for the purchasing and preparing of meals for younger children and other members of the family. A large percentage of boys and girls are carrying part-time jobs. The problem of selecting adequate meals, particularly at noon and night, is a pressing one for them. Many parents look to the older children in their families to assume the responsibility for planning the meals for the entire family. The assumption of this responsibility by adolescents may be a good functional experience provided there is proper guidance from the schools. We want adolescents to assume adult responsibilities as soon as they are able. In order to do this, however, they need to know how to keep themselves, as well as members of their families in good health. The school therefore has a distinct responsibility for helping boys and girls to acquire these skills.

Purposes of the Bulletin

The major aim of the bulletin is to provide school administrators and teachers with suggestions for helping high school boys and girls assume the increasing responsibilities which they have for good food habits. More specific purposes may be listed as follows:

¹*Inadequate Diets and Nutritional Deficiencies in the United States: Their Prevalence and Significance.* Washington, D. C.: National Research Council, National Academy of Sciences. Bulletin 109, November 1943

To offer suggestions to teachers for initiating and improving the relation of food to health education in the school program

To indicate how teachers of science, homemaking, social studies, physical education, guidance, counseling, and others can contribute to the improvement of food habits

To help high school students to understand the relationships between good food habits and health

To help them assume their share of the responsibility for eating meals that will keep them in good health

To help them assume their responsibility for selecting and preparing foods for younger children and other members of their families

To interest them in changing food problems faced by their families, their community, their country, and other countries

Point of View

Everyone is interested in food and eating. Selection of proper foods and the development of proper eating practices are an important part of health education programs. Adequate nutrition is basic to the development of sound physical fitness. It is an essential for healthful living. Schools have a responsibility for helping children improve their understandings of basic food facts and eating practices. School lunch is only one aspect of this total program.

In the utilization of the suggestions which follow it is urged that each school re-examine its program, facilities, and materials that have to do with nutrition education. It is hoped that teachers using this bulletin will recognize it as an aid.

ADMINISTRATIVE LEADERSHIP AND TEACHER PLANNING FOR AN INTEGRATED SCHOOL NUTRITION PROGRAM

Administrators are interested in improving the health program in their schools. They are concerned, too, about having this program contribute to the improved food habits of young people. Recent publications of the American Association of School Administrators have helped arouse interest of superintendents and principals not only in Michigan but in other states as well. These publications point out the importance of administrative leadership in the improvement of the curriculum for health education.

In discussing the lessons we should have learned from the past, the 1945 Report¹ points out three particular weaknesses of administration regarding health education:

1. Mere knowledge of health does not result in acceptable health habits. Unfortunately, the teaching of health commonly called "hygiene" has become the dumping ground for almost every desirable objective in the field of social behavior. In

¹*Paths to Better Schools*. 23rd Yearbook, American Association of School Administrators. Washington, D. C.: National Education Association. 1945

generally accepted hygiene textbooks, children have been admonished to sit properly at the table, to be cheerful and polite, to be considerate of others, to be friendly toward other children, to refrain from quarreling, to be kind to animals, to return lost property, to be prompt, contented, self-controlled, and thorough. Thus hygiene teaching has degenerated into pedagogical teacher and parental admonitions regarding the whole cross section of conduct.¹

2. The opportunities of the laboratory—the school itself—for the development of fitness, have been largely neglected. . . . Many of our school situations violate the basic rules of health and fitness. Food in the cafeteria often is not tasty or well balanced; candy, in some instances, is substituted for money in making change; carbonated soda drinks are sold; drinking fountains have been too few and not clean . . .²
3. The schools have not brought the parents sufficiently into the picture, and, hence, deal with only a small cross section of the child's life.³

This bulletin is designed to make use of the school as a laboratory for teaching good food habits. Suggested activities and projects based upon school life and school environment are given.

Where high school boys and girls are expected to assume responsibility for family needs they need help; where parents assume the responsibility, school cooperation to allow for greater participation is indicated. This presents a distinct challenge to administrators. Experiences have served to show that schools and parents working together can make significant improvement in the food habits of children.

Nutrition education as a phase of the health education or physical fitness program in the secondary schools can and should be coordinated with the physical education courses, the home economics courses, the biology and chemistry courses, and with certain units of the social sciences, particularly those dealing with consumer problems.

The Administrative Approach

The administrator who would exert leadership in the use of the material in this bulletin may:

1. Read it carefully, become thoroughly familiar with its contents and learn to distinguish useful teaching material regarding nutrition from vaguely related material regarding social behavior, and thereby be of help in recognizing the areas of his curriculum where the material will be of value to his teachers.
2. Analyze the life in his school to determine where his school or school system is a laboratory for nutrition habit formation.

¹*Paths to Better Schools.* Op. Cit. p. 56

²*Ibid.* p. 56

³*Ibid.* p. 62

Unless he is familiar with the teaching material he may be overlooking natural and ideal outlets for habit forming activity in his own school environment.

3. Use the bulletin to bring parents and teachers together to plan a cooperative control of food habits of children. In many communities nutrition councils which include parents exist. The school administrator can become the pivot person in the formation of parent-teacher nutrition councils.
4. Use it in in-service planning by teachers of specialized departments in planning coordinated units of nutrition. This is a particularly important function of the administrator in secondary education.

How Administrators and Teachers Have Worked Together

The suggestions given above have been applied by some administrators in various types of schools. Their accounts are included here as helpful illustrations to other administrators.

1. *The administrator analyzes his school system as a laboratory for nutrition habit formation.* The simplest and surest way to carry out such an analysis after he is aware of the meaning of nutrition and health practice is to question his teachers or principals as to just what they are now doing to teach nutrition.

One such analysis in a suburban school system gave indication of the alertness of the teachers by its comprehensiveness. The analysis revealed numerous ways in which, without reorganizing the program, nutrition material could be utilized by teachers. Many of the teachers appeared to be making earnest effort to create good nutrition understandings and habits; they appreciated the stimulating and enthusiastic endorsement of the administrator.

2. *The administrator stimulates the specialized departments in planning coordinated units of nutrition.* The major responsibility for the teaching of nutrition in secondary education has usually been delegated to the home economics classes as a specialization, thereby limiting it chiefly to the girls and in cases where home economics is elective, to only a limited number of the girls. How can a subject which is universally important be taught to all the children? The administrator must, of course, examine here the grade levels and subjects in which the material of the unit is most adaptable and would be most universal. One school system, after examining the material, reported that they were able to reach every student in their science classes in the junior high school because they "spiraled" the required and elective science courses up from 7A to 8A to 9B.

Likewise, instruction on foods may be related to physical education. Selected units may be included in biology, chemistry, social studies, and classes in consumer economics. Homemaking

and agriculture classes, of course, have much to contribute. Not only the teaching of nutrition, but the total health instructional program in the school, may be improved when teachers plan cooperatively. The administrator is the key person to give leadership in this planning.

3. *The administrator brings teachers and parents together to plan cooperative influence on food habits.* To avoid the dangers pointed out and the weaknesses exposed by the American Association of School Administrators regarding purely pedagogical and parental admonitions, it is important for the administrator to cooperate in seeing that the actual eating practices of children are controlled by good principles and understandings of nutrition.

There is probably no better laboratory for bringing parents and school together in the study of health habits of children than the cafeteria or school lunchroom. Administrators who are actually trying to affect the eating habits of children are becoming increasingly aware of this connecting link between school and home.

One superintendent reported that he had formed a community-wide health committee to bring the school and community together for planning to influence health habits. The committee consisted of the city superintendent of recreation, the city nurse, the city health director, the head of the physical education department, an elementary principal, a secondary principal, the home economics teacher, and the school nurse. This committee advised with small groups of teachers engaged in curriculum revision, carried on public speaking classes to carry needed advice to homes, and made use of the local newspaper in coordinating the school and home in health habits.

4. *The administrator influences nutrition in the community through food production and preservation.* Never before has the opportunity for the school administrator been so challenging as at present for securing community interest and support for the teaching of nutrition. This is true because of the food consciousness of the nation due to rationing, price control, lend-lease and food deficiencies. In a recent survey made by the victory garden committees of the county and municipal Defense Councils of the Office of Civilian Defense, it was shown that the goal in Michigan in 1944 was 792,000 gardens, but that the people of our state actually grew an estimated 1,032,882 gardens. In these gardens there was produced an estimated 22,000,000 bushels of vegetables. Probably from two to three people worked on each of these gardens during the year. This would mean that over three million people in Michigan were engaged in producing food for their families in victory gardens. More than forty per cent of the families growing gardens were preserving and canning foods.

No field offers the challenge to creative school administration in our times more than the great field of health; there are few

avenues to the practical building of good health in the community that are more adaptable to the educational process than nutrition.

5. *The administrator encourages and facilitates teacher-pupil planning.* Regardless of whether nutritional experiences are planned as an integral part of different courses, or included in a separate health course, teacher-pupil planning is necessary. Since much of the information in the field of nutrition may be new to the teacher, this study provides an opportunity for the pupils and teacher to learn together. Part of the time the pupils will need to plan as a group, but frequently they will need to work in smaller committees.

The democratic attitude of teachers and pupils learning together should be emphasized when the class is organized. The pupils should all feel that they can contribute to the group from their observations, their readings, and from the radio programs they may be able to follow. The problems taken up by the teacher and pupils should vary with the interests and needs of the group.

The use of questionnaires, check lists, exploratory trips, etc., may help both the teacher and the pupils locate the problems important to the group.¹

During the planning period the teacher will want to learn as much about the health of the students and their home problems as possible. In turn, the pupils' obligations are to identify their own food problems and to select those on which they will work together as a class. The problems of individual pupils need not be neglected, as periodically throughout the course or unit, time may be set aside for this work.²

SUGGESTIONS FOR TOTAL SCHOOL PARTICIPATION IN THE IMPROVEMENT OF EATING HABITS

Many administrators and teachers believe that integrated programs in a school will help students solve health problems in a more complete way. Various areas such as social studies, science, physical education, English, speech, art, commercial education, as well as agriculture and homemaking, may contribute. Cooperative planning on the part of teachers with students may lead to general school activities related to improved eating programs, not only in the school but in the community. Making good health practices the thing to do is basic to the success of any health program at the secondary school level. This requires an awareness on the part of the total school faculty and student body of common health problems. Good selection of food is one of the essentials in healthful living; it likewise is one of the major health problems of the average high school student.

One situation which offers rich opportunities for providing an integrated project for the entire school is the school lunch. Such a

¹Suggested teaching procedures, and sources are included in Appendix, p. 31

²Samples are included in Appendix, p. 37

project might include participation of children from the lower grades and all areas of the secondary program. Following is an example of such an integrated project planned primarily to teach nutrition through participation of many departments of a secondary school. The goals of such a program might be to provide a school lunch that offers opportunities for learning throughout the entire school program, that meets nutrition standards, and that operates under safe, healthful, and sanitary conditions.

Basic Principles for Setting Up Program

1. It is the responsibility of the school and the parents of the community to make available a nourishing meal for every child who must stay at school over the noon hour.
2. Every teacher in the school has a specific contribution to make to the school lunch.
3. The general educational program of the school should provide for educating the child to select nutritious foods. Such a program should include the parents.
4. Foods must be well prepared and made attractive in appearance so that they will appeal to persons of any age.
5. Suitable space and equipment should be provided.
6. High standards of sanitation for food handling, personnel, and equipment should be maintained.

A Plan for Organization

The plan for organization of this project might include a working committee consisting of such people as the school administrator, as chairman, the homemaking teacher as co-chairman and adviser to the program; with representatives from such groups as social science, mathematics, English, agriculture, physical education, science, and guidance. It would be well to include on this committee a member of the school board, parents, local nutrition committee, and representative students from the student council, homemaking club, and Future Farmers of America.

The responsibilities of this committee would be to formulate an organization for a school lunch program and to plan ways of working out a correlated educational program. Suggested problems and activities for such a program follow:

Opportunities for Nutrition Education Through the School Lunch and Contributions of Various Departments of the School¹

(These suggestions are given to stimulate thinking using many departments of the school in relation to the school lunch program.)

Problem	Department	Activities
I. How may menus be planned which are adequate nutritionally, and suitable to the locality and budget?	Homemaking	<ol style="list-style-type: none"> 1. All classes take turns planning menus at times during the year when they are especially studying foods. Plan and prepare menus for the school lunches. 2. Experiment with various dishes suitable for the lunch menus. 3. Try ways to use leftovers most common in the hot lunch. 4. Figure out quantity recipes.
II. How may food be selected from the markets or provided for the lunch?	Commercial Chemistry or Biology Biology Social Studies	Make copies of menus for distribution. Plan various sets of menus and figure caloric value, vitamin content, etc. Plan sets of menus to include all the foods needed during the day. Make a study of wise selection of foods, checking markets, etc. and do the marketing for the lunch for a period of time. Make a study of food advertising and check marketing for lunch against false propaganda.

¹Adopted from a report prepared by a committee of graduate students in home economics under the direction of Mrs. Merle D. Byers, Home Economics Education Department, Michigan State College, East Lansing

Problem	Department	Activities
<p>II. How may food be selected from the markets or provided for the lunch? (Continued)</p>	<p>Agriculture</p>	<ol style="list-style-type: none"> 1. Plan, with cooperation of entire school and community, a school lunch garden. 2. Survey the community in the fall to find all excess food which might be used for the lunch. 3. Sponsor an educational campaign encouraging people to have gardens and provide some foods for the school lunch.
<p>III. How may food for the lunch be prepared so it is appetizing and nutritious?</p>	<p>Commercial</p>	<p>In <i>Consumer Unit</i> study best buys for the school lunch.</p>
<p>III. How may food for the lunch be prepared so it is appetizing and nutritious?</p>	<p>Homemaking</p>	<ol style="list-style-type: none"> 1. Pupils in classes take turns in assisting with preparation of the lunch. 2. Study the arrangement of the lunch kitchen to make it most convenient for preparation, etc. of the lunch. 3. Experiment with various dishes to make them more appetizing and nutritious.
<p>III. How may food for the lunch be prepared so it is appetizing and nutritious?</p>	<p>Chemistry</p>	<p>Observe preparation of food in school lunch to determine loss of food value. Make recommendations for improvement.</p>
<p>III. How may food for the lunch be prepared so it is appetizing and nutritious?</p>	<p>Physics</p>	<p>Make a study to determine best times to add salt in preparing food.</p>

Problem	Department	Activities
IV. How may the serving of the lunch be done so it is most efficient, sanitary, etc.?	Homemaking Art Science Student Council	<ol style="list-style-type: none"> 1. Girls in classes take turns in serving after study of the problem. 2. Girls teach and supervise others who may assist with serving. Make price cards, instruction posters, etc. to help make serving more efficient. Check the ones who are serving for sanitary habits in handling food.
V. How may the clean-up be most efficient and sanitary?	Chemistry Homemaking Social Studies	<ol style="list-style-type: none"> 1. Make a plan for students to follow in being served, returning dirty dishes, and leaving the lunchroom. 2. Appoint students to put up and take down tables and chairs. <ol style="list-style-type: none"> 1. Appoint members of the class to take turns supervising the sanitation of the clean-up. 2. Test the chemical action of various soaps and soap powders used in dish washing. <ol style="list-style-type: none"> 1. Plan the routing of the clean-up to be the most efficient. 2. Take turns helping with the clean-up or planning for others to help. Check on milk regulations, etc. to be followed.

Problem	Department	Activities
VI. How may the finances be handled?	Commercial	<ol style="list-style-type: none"> 1. Work out a bookkeeping system for handling accounts and records. 2. Train students to take charge of accounts, records, and payment of bills. 3. Print tickets and manage distribution.
VII. How may the equipment be provided and cared for?	Mathematics Shop	<p>Figure food costs.</p> <ol style="list-style-type: none"> 1. Make tables, benches, etc. if needed or supervise their construction. 2. Make holders for price cards, napkin holders, storage equipment, etc. 3. Sharpen knives, repair equipment, etc.
VIII. How may the school lunch teach maximum improvement in eating habits?	Homemaking Social Studies Science or Homemaking English	<p>Classes study best buys in equipment and help to purchase them.</p> <ol style="list-style-type: none"> 1. Make surveys of school to find numbers having various types of noon lunches. 2. Have small panel discussions, debates, etc. on the need for a good school lunch. <p>Perform rat experiments to show differences in effects of good and poor lunches. Publicize results for entire school.</p> <p>Prepare feature articles for school publications and public address system.</p>

Problem	Department	Activities
<p>VIII. How may the school lunch teach maximum improvement in eating habits? (Continued)</p>	<p>Homemaking</p> <p>English and Speech</p> <p>Physical Education</p>	<ol style="list-style-type: none"> 1. Sponsor "Good Lunch," "Clean Plate," etc. campaigns. 2. Study the nutritional status of the students and their eating habits. 3. Set patterns for good lunches for other departments to use. 4. Act as a consultation center on "Whys of a Good Lunch." <p>Put on skits, plays, write articles for local papers and school publications on values of a good noon lunch.</p> <p>Students keep records of what they eat as a part of their general health survey, analyze weaknesses and improvements, especially through the noon lunch. Study the relation of caloric intake to physical activity.</p> <p>Help students who are undernourished to select a good lunch.</p>
<p>IX. How may the community be educated in regard to a good noon lunch?</p>	<p>Guidance</p> <p>English and Speech</p> <p>Commercial</p> <p>Art</p> <p>Homemaking</p>	<p>Write letters to parents, articles for newspapers, give talks at public gatherings, etc.</p> <p>Make copies of letters, notices, etc. to be sent to parents.</p> <ol style="list-style-type: none"> 1. Make posters to use at public gatherings or in public places on values of a good lunch. 2. Arrange exhibits to show a good lunch program. <p>Check to be sure the noon lunch program is the best possible and see that changes are made when necessary.</p>

Additional Activities

Other activities that provide opportunity for similar integration include: garden surveys in the community; studies of eating practices; study of eating places in the community; and the relation of nutrition to good physical fitness. The following brief accounts are from schools conducting such activities:

1. "We made a garden survey of an entire community. We noted a greater variety in the gardens this year. Greater quantities of green vegetables are now being used. Where gardens in normal times had 5 or 6 varieties of vegetables they now average 15 or 17. Nutrition instruction and teaching people how to use new foods is really a success here."
2. "A survey was made of the eating habits of junior and senior boys. Many were found to be lacking the important foods. We stressed the value of vegetables, fruit, and milk in our classes. A penny milk program was established to provide milk for those who did not have it at home."
3. "The advanced home economics students in our school studied the eating habits of the grade school children and then conducted demonstrations and classes to show these children that food is important in order to grow and be healthy. We expect to continue this kind of work next year."
4. "After our students had heard the talk on 'Nutrition and Physical Fitness', they decided to check on themselves. They used score sheets and found their lowest scores were on milk, fruit, and vegetables. It was decided that we include some nutrition lessons for all students to be taught by the home economics teacher, but the biology, science, and physical education teachers also stressed the value of foods in their classes. The boys in the agriculture course became interested in gardens. Next year we plan to have a lunch program for high school students as well as for the grade school children."
5. "Acting upon a suggestion of the head of the home economics department, a class in tenth grade English, agreed to devote some time to a study of the foods we eat. The activity was developed in the following manner.

"One class period was devoted to discussion about the importance of food in our daily living. We talked about the supply of food, the manner in which it is produced, food shortages, surpluses, food preservation, changes in diet that have been made possible through scientific research, pure food laws, food price control, army rations, in fact every way that food enters into normal living. Every person in the class was participating in some way, relating experiences on a farm, a trip through a meat-packing house, victory gardening, canning, and so forth.

"The teacher presented the problem in summarizing the discussion. 'Would you be interested in finding more information on these subjects and presenting your findings in a form that ap-

peals to you, an essay, a story, rhymes, or cartoons?" Enough enthusiasm had been stirred up that by the time a list of subjects had been compiled, every person in the class had chosen the topic which interested him the most.

"A few days later a stack of back issues of the *Reader's Guide* was passed out to the class with instructions to find articles that were listed on these topics. This gave the teacher an opportunity to work with individual pupils who were having difficulty finding materials. A few pupils were excused to go to the library to look for pamphlets and books. The amazing part of the assignment was the manner in which some of the people who prior to this time had done little or no work were beginning to feel a responsibility for doing something.

"Another day was devoted to the organizing of material in the form of an outline. It was assumed that previous training in the making of an outline would enable most of the class to do this part of the project individually.

"The results are interesting. Practically every member of the class was ready on the assigned day. Some of the essays were read aloud, and again the class discussed the topic, disagreeing with some points, agreeing with others, making suggestions for improvement of the composition, and analyzing critically the work done.

"It should be recognized that this class is in no way exceptional. It is in fact rather uninspired on most occasions. While the quality of composition is far from excellent, the general information received through this group activity is good evidence, it would seem, that it is possible to work with a department of the school which reaches such a limited number of students as the home economics department in an area in which all people should be informed."

6. The following problems were used in a 7B arithmetic class:

- a. There are 16 T in a cup. How many T are there in $\frac{1}{4}$ cup?
- b. You should have 4 glasses of milk a day. If you have $1\frac{1}{2}$ glasses for breakfast and $\frac{3}{4}$ of a glass for lunch, how many more should you have that day?
- c. 1 Florida orange contains 3 ounces of juice. 1 California orange contains 1 ounce of juice. How much more juice do you get from 3 Florida oranges?
- d. Mary bought her lunch in school. She paid 8 cents for chicken soup, 15 cents for potato salad, 5 cents for milk, and 8 cents for coke. How much did she spend? What proportion of her money was spent for coke? For milk?
- e. 1 glass of milk contains 170 calories. How many calories are there in $3\frac{1}{4}$ glasses?
- f. You should have one quarter of your daily food requirements for breakfast. You should have 3000 units of vitamin A in a day. How many should you have for breakfast?

- g. How many oz. are there in a lb. of butter?
- h. How much will $2\frac{1}{2}$ pecks of potatoes cost at 27 cents a peck?
- i. There are 50 calories in 1T of sugar. How many calories are there in 1-3 T?
- j. If you should drink 4 glasses of milk a day, how many should you drink in a week?
- k. A quart of tomato juice was divided into 4 equal glasses. How much does each glass contain?
- l. You should eat 2 servings of fruit a day. How many should you eat in 3 weeks?
- m. There are 3t in 1T. How many are there in $2\frac{2}{3}$ T?

FURTHER SUGGESTIONS FOR TEACHING HIGH SCHOOL STUDENTS THE IMPORTANCE OF EATING GOOD MEALS

Some of the problems listed below are fairly simple and would require but a short time for study. The development of others might take several weeks. Some students are interested in their own problems, others learn through observing the food choices of people about them.

In every high school there will be a group of students who learn best through working out simple laboratory experiments to discover for themselves the importance of protective foods.

A variety of activities is listed in order that the students and the teacher may select those most valuable to the group. The teacher may use the suggestions in this bulletin merely as a means of stimulating students to locate their own problems and develop their own activities.

Problem I. Time for Team Work in the Family

- A. How can I adjust my eating habits to irregular hours due to my job or to my family working in shifts?
 1. What foods should be in a good day's meals for people of my age and activity?
 2. What foods should I have at noon if I miss the night meal at home?
 3. Would it be better for my health to eat a heavier meal at noon in the school cafeteria or have a late dinner at home after work?
 4. Would a snack-bar at high school give me a better start on the after-school job?
- B. Some suggested activities
 1. Form a committee of the students who work after school (and thus miss the dinner meal at home) to plan better meals for themselves.
 2. Find out where the best mid-afternoon lunches can be bought and how much they cost.

3. Find out where the best evening meal can be bought, while on the job, for a specified sum of money.
4. Ask the mothers of the students to help with the planning so that the young people get enough of the right foods to eat.
5. Find out whether it would be cheaper and better to eat dinner at the cafeteria at noon and a lunch at night while on the job.

Problem II. What to Feed the Crowd

- A. How can my Scout troop eat out on hiking and camping trips?
 1. What foods are high in food value?
 2. How much food do we need for the trip?
 3. What is a reasonable budget for the food?
 4. What foods make the best meals and the lightest packs to carry?
- B. I want to entertain my friends at home. What can I serve?
 1. What supper dishes are cheap?
 2. What foods go together, are attractive, and good to eat?
 3. What main dishes and desserts can be prepared early in the day?
- C. Some suggested activities
 1. Collect recipes and ideas for good camp meals.
 2. Plan meals for a hiking trip for Scouts. Buy the food and figure the cost per person. Pack the food for the hike. Find out whether the weight is too much for the Scouts to carry.
 3. Prepare meals under camping conditions.
 4. Find out about the safety of drinking water in the areas used for camping.
 5. Try out dehydrated products on the local market that would help make nutritious meals.
 6. Get samples of the special rations used in the armed forces.
 7. Collect recipes of main dishes that are easy to prepare for parties at home.
 8. Experiment with foods to get combinations for parties that are attractive, well balanced, and good to eat.
 9. Plan and prepare company suppers that students can use when entertaining at home. Try some meals where the food is prepared early, and some meals where the guests help during the party.
 10. Collect or prepare recipes for quantity cooking. Plan amounts required for quantity purchasing.
 11. Have a students' report on how they used ideas from the class in entertaining at home.
 12. Have the class demonstrate what they have been learning before some of the high school girls' organizations who would be interested in the project.

Problem III. The "Basic Seven" as a Guide to Good Eating

- A. Do I score "seven-up" on the "Basic Seven"?
1. What are the foods people should eat every day?
 2. What is my daily score?
 3. How shall I improve my eating score?
- B. How can I eat the "Basic Seven" the year around?
1. How many of the important foods are raised in Michigan?
 2. How can people have fresh fruits and vegetables in winter?
 3. How much does it cost to eat good meals?
- C. How can I help other people eat better meals?
1. Do other people make the same mistakes in eating as high school students and teachers?
 2. Would it cost too much to eat better meals?
 3. How long does it take to change eating habits?
- D. Some suggested activities
1. Use as a guide the "Basic Seven" score chart¹ listed in this bulletin; arrange an exhibit of the food groups needed in good meals for the day.
 2. Using the same score chart students and teachers can discover whether they are eating well-balanced meals.
 3. Observe the eating habits of people of different ages and occupations. Analyze the records to see which of the food groups in the "Basic Seven" are most commonly eaten and which are frequently omitted.
 4. Work out posters, exhibits, demonstrations, newspaper publicity, and radio broadcasts to inform people about the need for eating some of all the protective foods each day. Emphasize especially those food groups frequently omitted. Suggest good recipes to use in preparing these foods.
 5. Using the *Seasonal Chart for Michigan Foods*² show how people can eat the "Basic Seven" during all four seasons of the year.
 6. Through displays in grocery stores, public libraries, banks, and schools feature the season's best buys on the market. Show how these foods can contribute to eating the "Basic Seven." Suggest interesting ways of preparing these foods.
 7. Find out how much packed lunches can contribute to the "Basic Seven." Prepare several different good lunches. Exhibit them where they can be studied by the students bringing packed lunches. Prepare some colorful leaflets with helps for making packed lunches attractive and good eating.
 8. Find out how much the noon lunch at the school can contribute to the "Basic Seven."

¹See Appendix, p. 38

²See Appendix, p. 39

Establish a Training Table for students and teachers, who may, for various reasons need help with their eating habits. If necessary, get the services of a trained dietitian for special diets.

9. Find out where the best noon meals can be bought in the area near the high school. Compare these meals with those served in the school cafeteria. Post these comparisons where students can see them. Write up the study for the school paper.
10. Promote an all-school campaign for better breakfasts if students find people are eating too few whole grained cereals and eggs.
11. Help with the health examinations of younger children in the kindergarten. Tabulate the results of the examinations so that the teacher can talk with the parents at the P.T.A. meeting. Prepare a sample cafeteria for the kindergarten teacher to use with her children to learn about their food habits. Help her analyze her records. Figure out how much it would cost to buy all the foods needed for good meals for a kindergarten child for a week.
12. Study the value of milk in the adolescent's diet.
 - a. Make an exhibit showing the nutritive value of three glasses of milk.
 - b. Compare the calcium value of other milk products with that of one glass of milk.
 - c. Prepare different milk dishes and make an exhibit showing how much calcium they contain per serving. Plan menus using some of these milk dishes in the day's meals.
 - d. Set up a milk bar and sell milk drinks. Keep a record of the most popular choices and publish them in the local newspapers.
 - e. Try out some new milk dishes in the school cafeteria. In advance of the special project conduct an educational campaign to enlist the interest of the students in selecting the milk dishes.
 - f. Prepare soups, salads, cereals, and desserts with milk and milk products and without. Compare them for differences in food values.

Problem IV. Using the Science Laboratory to Learn About the Importance of Good Food and Good Eating

- A. What do foods contain that help keep us in good health?
- B. How can we raise and care for foods so they will be good eating?
- C. Are all of the food groups in the "Basic Seven" necessary?
- D. What can the science laboratory tell us about good buys in food?

- E. In what ways has science aided in the shipment of foods?
1. What new methods of transportation are being used?
 2. What are the new methods of preparing foods for shipment?
 3. What is the modern way of protecting foods from moisture, extreme heat, and cold?

F. Some suggested activities

1. Bring to the laboratory different foods such as fruits, vegetables, cereals, fats, starch, sugar, milk, eggs, cheese, found in the "Basic Seven."
Study them for likenesses and differences in composition of water, cellulose, fat, protein, etc.
2. Make slides of different plants. Examine under microscope for cell structures. Try different tests to see what food materials are contained in these cells such as starch, fat, and protein.
3. Dry out different plants and other foods. Figure the approximate amount of water in them.
4. Make an exhibit showing the constituents of milk such as volume of water, weight of fat, protein, lactose, and total minerals. Show the vitamins as per cents of daily needs of high school students.
5. Perform experiments on methods of processing and storing foods in relation to bacterial count, appearance, flavor, and losses from spoilage.
6. Analyze the correlation between the nutritive value of foods and seed selection, soil composition, and climatic conditions.
7. From the point of view of minerals and vitamins, find out what vegetables are the most valuable to plant in family gardens.
8. Relate the nitrogen cycle of the soil to providing for the protein needs of people.
9. Apply the law of Conservation of Energy to the food needs of people.
10. Study the caloric or energy value of different foods eaten in a good diet. Plan a good gaining diet and a good diet on which to reduce.
11. Calculate the basal energy needs of different members of the class. Set up a day's good meals and see how far through the meals the student would have to go to eat enough calories to meet basal energy needs.
12. Compare the energy expenditure of students during one hour of active sports with that during one hour of a lecture class. Set out the foods required to provide energy sufficient for one hour of basketball practice versus one hour of reading or school assembly.

13. Write to the State Department of Health for maps of Michigan showing the iodine content of water in different parts of the state. Read about the incidence of goiter in Michigan. Find out how many stores in your community sell iodized salt and how many families use it. Try to find out why Michigan is in the goiter belt.
14. Set up comparisons of methods of food preparation and storage, that will tend to conserve the vitamins in natural foods versus those that will tend to reduce the amounts of vitamins.
15. Find out how vitamin D milk is prepared for your locality. Compare the grocery store, the dairy, and the farmers' market with the drug store sources of vitamin D.
16. Make an exhibit showing the amounts of foods needed in a good diet to give the amount of calcium in one glass of milk.
17. Compare the food value of bread made of white flour when enriched with that not enriched.
18. Perform an experiment to find out why the Chinese cut up meats quite fine, leave the bones in the pot, and add acid to the meat as it stews.

Problem V. Using Animal Experiments to Learn About the Importance of Good Food and Good Growth

- A. What happens if some of the protective foods are not fed?
- B. What happens if too little food is eaten?
- C. Why are fresh raw foods valuable for good health?
- D. Some suggested activities
 1. Conduct animal feeding experiments to learn the relationship between energy foods and good growth.
 2. Construct a small room calorimeter in which can be placed a small animal. Observe the evidence of oxidation of foods in the animal's body.
 3. Feed baby rats, after they are weaned, on milk diets versus diets of mixed foods high in iron. Watch for signs of anemia. Figure out what would be the best foods to add to a young child's diet. Check with pediatricians' recommendations.
 4. Clean, scrape, and mount the skeletons of rats. Observe the difference between those fed on poor diets and those fed on good diets.
 5. Work out an experiment with animals to show that they grow best when provided with an adequate amount of all the nutrients needed for growth.
 6. Work out an experiment with plants to show the same relation of balanced food to growth.

7. Work out an experiment with animals to show the effect of having an optimum menu at each meal versus one to two meals poor and third meal optimum.
8. Get from the butcher some long bones of several different animals. Cut the bones in two, lengthwise. Study for signs of good mineral storage. Study the differences between the bones of young animals versus mature ones.
9. Set up an experiment to test the value of direct sunlight, ultra violet irradiation, and vitamin D preparation upon the growth of animals. Notice how many different tissues of the body are affected by lack of this vitamin.
10. Feed a guinea pig fresh lettuce as a source of vitamin C. Feed another some that has been dried. Compare the growth and health of these two animals.

The activities suggested under the foregoing problems were selected so as to require the equipment usually found in high school classrooms. An examination of the problems and activities will indicate the possibilities for teaching nutrition in the various courses offered in high schools. Problems one, two, and three might be developed in homeroom classes or in some of the interest groups sponsored by the school. Biology and science classes provide many opportunities for nutrition projects. A few suggestions have been offered in the two concluding problems for these classes.

While a fairly generous bibliography of teaching materials is included in the Appendix, teachers may need further help in locating just the information they need for their class work. Foods and nutrition departments in the different colleges about the state should be contacted. The Michigan Department of Health, Lansing can be called on for such special services.

BIBLIOGRAPHY

Books on General Nutrition

- *1. American Medical Association; Council of Foods. *Accepted Foods and their Nutritional Significance*. Chicago: American Medical Association. 1940. 492 pp. \$2.00
- *2. Bogert, Jean L. *Nutrition and Physical Fitness*, 4th Edition. Philadelphia: The W. B. Saunders Co. 1943. 602 pp. \$3.00
3. Bowes & Church, *Food Values of Portions Commonly Used*, 5th Edition. Philadelphia, 311 S. Juniper Street: Child Health Society. \$1.50
- *4. Chaney, Margaret S. and Ahlborn, Margaret. *Nutrition*. 2nd Edition. Chicago: Houghton-Mifflin Company. 1943. 429 pp. \$3.25
5. Davis, Adele, *Vitality Through Planned Nutrition*. New York: Macmillan Company. 1942. \$2.20
- *6. Rose, Mary S. and Taylor, Clara. *Foundation of Nutrition*, 4th Edition. New York: Macmillan Company. 1943. 480 pp. \$3.75
- *7. Silver, Fern. *Foods and Nutrition*. New York: Appleton-Century Co. 1941. \$1.72
8. Taylor, Clara M. *Food Values in Shares and Weights*. New York: Macmillan Company. 1942. 92 pp. \$1.50
- *9. Sherman, H. C. and Lanford, C. S. *Essentials of Nutrition*. New York: Macmillan Company. 1943. 424 pp. \$3.50

*Available through the Michigan State Library, Lansing

Books on the Food Habits of People: Historical, social-economic, and health implications are featured.

- *1. Annals of the American Academy of Political and Social Science. *Nutrition and Food Supply; The War and After*. Vol. 225. Philadelphia: The Academy. January 1943. 279 pp. \$1.00
- *2. Black, J. D. *Food Enough*. Lancaster, Pa.: Jacques Cattell Press. 1943. 269 pp. \$2.50
- *3. Cummings, R. O. *The American and His Food. A History of Food Habits in the United States*. Chicago: University of Chicago Press. 1940. 267 pp. \$2.50
4. Drummond, J. C. *The Englishman's Food. A History of Five Centuries of English Diet*. London: J. Cape. 1939. 574 pp.
- *5. Graubard, Mark. *Man's Food: Its Rhyme or Reason*. New York: Macmillan Company. 1943. \$2.50
6. Jacob, H. E. *Six Thousand Years of Bread*. New York: Doubleday. 1944. \$4.50
- *7. Martin, Edgar W. *The Standards of Living in 1860. American Consumption Levels on the Eve of the Civil War*. Chicago: University of Chicago Press. 1942. 451 pp. \$4.50
8. Woodburg, R. M. *Food Consumption and Dietary Surveys in the Americas (North and South America)*. Montreal: International Labor Office. 1942. 64 pp. \$0.35

Materials Describing Experiments for the Science Laboratory and Methods of Teaching

1. The American National Red Cross. *The Red Cross Nutrition Course in Secondary Schools: Teacher's Manual*. Washington, D. C.: The American Red Cross. 1944
2. Bingham, N. E. *Teaching Nutrition in Biology Classes*. New York: Columbia University Press. 1939. 117 pp. \$1.25
3. Todhunter, E. Neige, and Andes, Mabel L. *Nutrition Experiments for Classroom Teaching: A handbook for teachers*. Pullman, Washington: College of Home Economics, State College of Washington. 1940. \$0.25

Periodicals

1. *Agricultural Situation*. A publication of the United States Department of Agriculture, Washington, D. C. Issued monthly. Order from the Superintendent of Documents. \$0.50 per year
2. *Consumer's Guide*. A publication of the Department of Agriculture, Washington, D. C. Issued monthly. \$0.50 per year
3. *Consumer Education Service*. A publication of the American Home Economics Association. Issued monthly. 620 Mills Building, Washington, D. C.: The Association. \$1.00 per year
Note: The April 1943 number is given over to reports of successful teaching projects in consumer education.
4. *Hygeia*. A publication of the American Medical Association. Issued monthly. Chicago, Illinois. \$2.50 per year
5. *Michigan Department of Health*. A monthly bulletin. The Department, Lansing, Michigan. Free
6. *Nutrition Reviews*. Published monthly. Chrysler Bldg., New York, New York: Nutrition Foundation, Inc. \$2.00 per year
7. *Journal of Home Economics*: A monthly publication. 620 Mills Bldg., Washington, D. C.: American Home Economics Association. \$2.50 per year
8. *Journal of American Dietetic Association*. Published monthly. 620 N. Michigan Avenue, Chicago, Ill.: American Dietetic Association. \$3.00 per year

Bulletins on General Nutrition

1. National Research Council, The Committee on Cereals, Food and Nutrition Board. *The Facts About Enrichment of Flour and Bread*. Washington, D. C.: National Research Council. 1944. 15 pp. Free

2. Philadelphia Child Health Society. *Family Nutrition*. Philadelphia: The Society. 1942. 105 pp. Free
3. Rowntree, Jennie I. *This Problem of Food*. 30 Rockefeller Plaza, New York: Public Affairs Committee, Inc. 1942. 32 pp. 10 cents
4. Stone, Harriet. *The Meaning of Nutrition*. Boston: D. C. Heath and Company. 1943. 50 cents
5. U. S. Department of Agriculture. *Principles of Nutrition and Nutritive Value of Foods*. Washington, D. C.: The U. S. Dept. of Agriculture. Miscellaneous Publication No. 546. 1944. 40 pp. Single copies free
6. U. S. Department of Agriculture. *Are We Well Fed? A Report on the Diets of Families in the United States*. Washington, D. C.: Supt. of Documents, Miscellaneous Publication No. 430. 1941. 28 pp. 15 cents
7. National Research Council, report of committee on food habits, 1941-1943. Bulletin No. 108, Oct. 1943. *The Problem of Changing Food Habits*. 2101 Constitution Avenue, Washington, D. C.: National Research Council. 177 pp.
8. National Research Council, Bulletin No. 109, Nov. 1943. *Inadequate Diets and Nutritional Deficiencies in the United States*. 2101 Constitution Avenue, Washington, D. C.: National Research Council. 56 pp.
9. Department of State, Publication 1948, Conference Series. *United Nations Conference on Food and Agriculture*, Hot Springs, Virginia. Washington, D. C.: U. S. Government Printing Office. May 18-June 3, 1943. (Final Act and Section Reports.) 61 pp.
10. United States Department of Agriculture, Washington, D. C. *Human Nutrition*. Yearbook Separate No. 1668. A reprint of Part 1 of the yearbook of Agriculture. Washington, D. C.: Superintendent of Documents. 1939. 307 pp. 40 cents
11. United States Department of Agriculture, Washington, D. C. *Family Food Consumption in the United States*. Washington, D. C.: Superintendent of Documents, Spring, 1942. Misc. Pub. No. 550, 1944. 157 pp. 20 cents

Bulletins on the Nutrition and Feeding of Children

1. Loewenberg, Miriam E. *Food for Young Children in Group Care*. Washington, D. C.: Supt. of Documents, U. S. Dept. of Labor, Children's Bureau Publication No. 285. 1942. 34 pp. 10 cents
2. Roberts, Lydia J. and members of the U. S. Children's Bureau Staff. *The Road to Good Nutrition*. Washington, D. C.: Superintendent of Documents, U. S. Dept. of Labor, Children's Bureau Publication No. 270. 1942. 53 pp. 15 cents
3. Sweeney, Mary E. and Eichelberger, Marietta. *One Meal for All*. 307 N. Michigan, Chicago: Evaporated Milk Association. 1944. 16 pp. Single copies free

Bulletins on the School Lunch

1. Girl Scouts Incorporated. *Woodland Cookery*. 155 E. 44th Street, New York: The Girl Scout Office. 35 cents
2. Michigan State College Extension Division. *School Lunch*. 4-H Club, Bulletin 12, The Bulletin Room, Michigan State College, East Lansing. 1941. 30 pp. Single copies free
3. United States Office of Education, Washington, D. C., Supt. of Documents
 - a. *Food for Thought: The School's Responsibility in Nutrition Education*. Education and National Defense Series, Pamphlet No. 22. 1942. 32 pp. 15 cents
 - b. *School Lunch Management*: Nutrition Education Series, Pamphlet No. 3. 1944. 31 pp. 10 cents
 - c. *A Yardstick for School Lunches*. Nutrition Education Series, Pamphlet No. 4. 1944. 30 pp. 10 cents
 - d. *Making School Lunches Educational*. Nutrition Education Series Pamphlet No. 2, 1944. 10 cents

Bulletins and Leaflets Available Through the Michigan Department of Health

1. *As the Little Child Eats*
2. *Eating Is Important*
3. *Milk—Does Your Family Have Enough?*
4. *Planning and Packing the School Lunch*
5. *Vegetables and Fruits*
6. *Vitamins*
7. *What to Eat Before the Baby Comes*
8. *Wild Greens Are Good*
9. *Your Food*
10. *Your Food and Your Figure*

Bulletins and Leaflets Available Through the Home Economics Extension Department, Michigan State College

1. *Better Breakfasts*
2. *Everyday Meals for Michigan Homes*
3. *Guide to Modern Meals*
4. *Make Your Meals to Measure*
5. *Mealtime for Little Folks*
6. *Milk in Modern Meals*
7. *Money Saving Meals*
8. *Pack a Punch in Every Lunch*
9. *Reducing Food Costs*
10. *Your Meals and Your Manners*

Posters Available Through the Michigan Department of Health

1. *Eating Is Important*
2. *Food Values of Two School Lunches*
3. *Michigan Children Need Iodized Salt*
4. *Wild Greens Are Good*

Motion Picture Films Available Through State Organizations

The Michigan Department of Health, Lansing

1. *America Learns to Fly.* 16 mm. 11 min. Black and white. Sound. 1941. Free
2. *Behind the Smile.* 16 mm. 10 min. Black and white, also color. Sound. 1939. Free
3. *For Health and Happiness.* 16 mm. 1 reel. Black and white. Sound and silent. 1941. Free
4. *More Life in Living.* 16 mm. 12 min. Black and white. Sound. 1939. Free

The University of Michigan Extension Service, Ann Arbor¹

1. *Dinner at School.* 16 mm. 9 min. Black and white. Sound. 1942. Rental \$2.50
2. *Foods and Nutrition.* 16 mm. 10 min. Black and white. Sound. 1940. Rental \$1.50
3. *Fundamentals of Diet.* 16 mm. 11 min. Black and white. Sound. 1944. Rental \$1.50
4. *Vitamins A, B, C, and D.* 16 mm. 4 min. each. Black and white. Sound. 1943. Rental \$0.50 for each
5. *World of Plenty.* 16 mm. 45 min. Black and white. Sound. 1942-43. Rental \$2.50

¹Send to University of Michigan Extension Service for their publication entitled, *A Few Selected Films on Nutrition.*

APPENDIX

Additional Teaching Suggestions and Aids

1. Use picture models of foods. Tape them on poster board to make up posters.
2. In making posters cut out letters and stick on poster board with pins rather than draw and paint.
3. To make teaching materials put out by different organizations serve the interest of the moment:
 - a. Mount on colorful background.
 - b. Cut up and combine differently.
 - c. Use pictures and have students develop new titles and descriptive materials.
4. Ways to manage the supplies for food preparation projects:
 - a. Have students bring the supplies from home and use the prepared dishes for their noon luncheon or take home the prepared products.
 - b. Use supplies purchased for the lunch room at school and serve the prepared foods in the school lunch room.
 - c. Have students prepare the dishes at home after they have had a demonstration lesson at school.
5. Certain articles or parts of books contain information that could be interesting to high school students if simplified. Get the trained nutrition women in the community to help you revamp these materials so that you can use them in your class. There is a local nutrition committee, there are dietitians and home economists in nearly every community who would help you work up these materials. Incidentally there is no better way of interesting these women in the school program than to get them to help with such projects.
6. Keep classified scrapbooks of newspaper clippings. Put clippings in notebooks or folders according to major topics.
7. If available, borrow *Hygeia* and the *Journal of the American Medical Association* at the office of the county health department, local hospital, local physician, or dentist.
8. Write for reprints of articles to be used for several terms.
9. Have the students work on reports in class where they may be helped with selecting important facts, with interpretation, and with working up charts to illustrate their reports.
10. Enlist the aid of English classes in writing up simple reports of some of the more technical readings.
11. Enlist the aid of the art classes and other classes in working up teaching charts.
12. There are many good articles on nutrition appearing in the women's magazines. For use in the boys' classes, cut them out, remount them, and put them in manila folders. The boys will not be self-conscious about reading and discussing these articles.

13. Clippings from newspapers and farm journals help keep the class up-to-date on current problems. Prominent metropolitan Sunday papers carry innumerable articles of nutrition interest.
14. It is very important to plan so that students may report on the articles that they bring to class.
15. The **Vitamingo** game is one device for interesting the students in their own diets.
16. Study local board of health procedures regarding sanitation of eating places and food handling.
17. An easy method of checking the diet is suggested by the attached score sheet and the sheet for graphing results.
18. Make a large graphic chart that could be used in an assembly program, in an exhibit for the school, or in the classroom to show the daily food score of people. A description for such a chart may be found in a bulletin issued by the Iowa Department of Public Instruction entitled, *The Iowa Plan for Nutrition Education in the Elementary Schools*. 1944

Survey of Food Intake

The type of food survey made in Osceola and Sanilac counties¹ in 1940 and 1942 is one means of determining needs in a group of school children. That was a one day study. A survey of at least seven days would be even more valuable. This may be done twice during the school year, in the fall and again in the spring. With suitable forms the problem becomes a relatively simple one. Such forms are illustrated on the following pages. Sample copies may be secured from the Michigan Department of Health.

The value of such a survey and an interpretation of the findings may best be explained by a trained nutritionist. The Michigan Department of Health maintains a staff of nutrition consultants in the Division of Nutrition, Bureau of Maternal and Child Health. Your local health department or school nurse will be glad to make arrangements for such consultation service.

The results of such a survey, when properly interpreted, can be of value to all teachers, students, parents, and groups such as public health and agricultural workers in the community.

¹*Health in Education, Bulletin 829*. Lansing: Department of Public Instruction.

DAILY FOOD RECORD

School County Date

Grade Age Boy or girl

DO NOT SIGN NAME UNLESS YOU WISH TO

Name

Please fill out these questions in detail:

For supper last night I ate and drank

Kind of Food

Amount

_____	_____
_____	_____
_____	_____
_____	_____

For breakfast this morning I ate and drank

Kind of Food

Amount

_____	_____
_____	_____
_____	_____
_____	_____

For lunch today I ate and drank

Kind of Food

Amount

_____	_____
_____	_____
_____	_____
_____	_____

Between meals last night and today I ate and drank

_____	_____
_____	_____
_____	_____
_____	_____

Suggestions for Filling Out Form I.

1. The following information on the type and quantity of each food might be helpful when summarizing the foods eaten:
 - a. Milk—state if plain milk, chocolate milk, cocoa if made with milk, evaporated milk, buttermilk, or skim milk. Include milk used on cereal.
Cheese—state if cottage or American or cheddar type.
 - b. Eggs—how many?
 - c. Meat, fish, poultry, game, etc.—state how cooked—fried, roasted, boiled.
Dried beans and peas—state if baked, boiled, in soup, etc.
 - d. Fruit—give name and how prepared such as raw, canned, stewed, or baked.
 - e. Vegetable—give same type of information as for fruit.
Potatoes—baked, boiled in jacket, fried, mashed, etc.
Whole raw fruit and vegetables may be given in numbers.
 - f. Bread—state if plain white, enriched white, or dark. This also refers to biscuits and rolls.
Breakfast cereals—give name of cereal.
 - g. Butter or margarine—state which is used on bread. If latter, state whether or not it is fortified.
 - h. Other foods—give names in full such as apple pie, rice pudding with raisins, vanilla ice cream, baked custard, oatmeal cookies, milk gravy, apple jelly, peanut butter sandwich on dark bread, fruit salad, etc.
2. The amounts should be given as the number of helpings or servings for all foods. Milk should be recorded as cups or glasses drunk and if used on cereals. Eggs are recorded in numbers eaten.
3. Ask students to record as accurately as they can remember. Put them on their honor. Let them see that this is one way of finding out how they rate and how they can improve upon themselves. Each student will be responsible for himself but the total results of all the students will be interesting to everyone.

FORM II

Date

A. From.....to.....

B. From.....to.....

SUMMARY OF FOOD INTAKE OF AN INDIVIDUAL STUDENT

School.....County.....Age.....Boy.....Girl.....

FOOD	A Per Day Number of Servings								B Per Day Number of Servings										
	M	T	W	T	F	S	S	Tot.	Ave.	M	T	W	T	F	S	S	Tot.	Ave.	
	Milk																		
Cheese																			
Eggs																			
Meat, fish, etc.																			
Dried beans																			
Tomatoes and citrus fruits																			
Leafy, green, yellow vegetables																			
Other fruits and vegetables																			
Potatoes																			
Whole grain or enriched bread																			
Whole grain or enriched cereal																			
Other bread and cereal																			
Baked goods, pancakes, etc.																			
Raw fruit or vegetables ¹																			
Candy, jelly, jam, syrup, etc.																			
Tea, coffee																			
Between meals ²																			

¹Other than tomatoes or citrus. If leafy green or yellow or other include in column so marked.

²These items should have been included in the columns descriptive of the type of food. For example, cookies will be counted in the baked goods column.

SUMMARY OF FOOD INTAKE OF ALL STUDENTS IN A GIVEN SCHOOL OR GRADE

School or Grade.....County.....

Pupil Average from Form II

FOODS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Tot.	Ave.
Milk																		
Cheese																		
Eggs																		
Meat, fish, etc.																		
Dried beans																		
Tomatoes and citrus fruits																		
Leafy, green, yellow vegetables																		
Other fruits and vegetables																		
Potatoes																		
Whole grain or enriched bread																		
Whole grain or enriched cereal																		
Other bread and cereal																		
Baked goods, pancakes, etc.																		
Raw fruit or vegetables ¹																		
Candy, jelly, jam, syrup, etc.																		
Tea, coffee																		
Between meals ²																		

¹Other than tomatoes or citrus. If leafy, green or yellow or other include in column so marked.

²These items should have been included in the columns descriptive of the type of food. For example, cookies will be counted in the baked goods column.

Date.....

PERSONAL FOOD HABIT INVENTORY

School..... Class or Grade..... Boy..... Girl.....

Fill the blanks at top of page

Answer all questions with **Yes** and **No** in space indicated. If you do not know, leave blank vacant. **Do not sign your name.**

- Where do you live? On a farm?..... Small town?..... City?.....
Where do you get your milk? Own cows?..... Buy fresh?..... Buy evaporated?.....
Do you have fruit trees at home?..... Berry bushes?.....
Do you have a vegetable garden at home each year?.....
- Do you like milk?..... Do you drink milk?..... If not, why not?.....
Do you drink pasteurized milk at home?..... At school?.....
Do you like cheese?..... American?..... Cottage?.....
- Do you like eggs?..... meat?..... fish?..... chicken?..... liver?.....
baked beans?..... peanut butter?..... nuts?..... soy beans?.....
- Do you like oranges?..... grapefruit?..... tangerines?..... tomatoes?.....
apples?..... bananas?..... prunes?..... raisins?..... berries?.....
Name the fruits you do not like, if any.....
- Do you like greens?..... carrots?..... squash?..... green beans?.....
rutabagas?..... turnips?..... leaf lettuce?..... cabbage?..... beets?.....
onions?..... potatoes?..... sweet potatoes?.....
Do you like raw vegetables?.....
Name the vegetables you do not like, if any.....
- Do you like whole wheat bread?..... rye bread?..... white bread?..... sweet
rolls?..... plain rolls?.....
Do you eat enriched white bread and rolls at home?..... At school?.....
Do you eat oatmeal?..... Cornmeal mush?..... Whole or cracked wheat?.....
What other cereals do you eat?.....
Name the cereals you do not like, if any.....
- Do you eat between meals?..... Do you have candy or soft drinks or potato chips
practically every day?.....
Are you willing to taste new foods?.....
- Are you well? Do you tire easily?..... Do you have frequent colds?..... Do you
have growing pains?..... Do you have decayed teeth?..... Are you constipated
frequently?.....

Suggestions for Interpreting Information Given on Form IV.

1. The first part may give an idea as to the availability of foods to students.
2. The next six parts should indicate whether the individual's likes and dislikes dominate his eating practices and if they are for the best. For instance, if the student checks all fruit and vegetables listed in part two, his eating habits would be considered very good. If he checked greens, potatoes, and all the fruits, his choices would still be very good. But if he checked only potatoes, apples, and bananas, his likes would be very limited and questionable from the nutrition standpoint, since he does not include green and yellow vegetables nor citrus fruits and tomatoes that are listed in all charts as being excellent sources of vitamin A and vitamin C respectively. The persons checking these sheets will need to be familiar with the foods known as the protective foods in order to interpret them correctly.
3. The last part may give a clue as to whether medical care is indicated. Students checking the items in part 8 should, in a general way, be urged to seek medical advice from their physician or at least report to the nurse who is working in the school.

A "BASIC SEVEN" SCORE CHART FOR HIGH SCHOOL STUDENTS

Eat Some Foods From Each Group Every Day	Keep your Score Good to Excellent			
	Poor Score	Only a Fair Score	Good Score	Excellent Score
(1) Milk to drink, milk foods, and cheese	1 cup or less daily	2 cups daily	1 quart daily	More than 1 quart daily
(2) Green and yellow vegetables	Seldom or never eaten	About 3 servings a week	1 to 2 servings a day	More than 2 servings a day
(3) Oranges, tomatoes, grapefruit, raw cabbage, green salads	Seldom or never eaten	About 3 servings a week	1 to 2 servings a day	More than 2 servings a day
(4) Meat, poultry, fish, eggs	Less than 1 serving a day	1 serving a day	2 servings a day	More than 2 servings a day
(5) Potatoes and other fruits and vegetables not listed in groups 2 and 3	Seldom or never eaten	About 3 servings a week	1 to 2 servings a day	More than 2 servings a day
(6) Bread and cereals. The natural whole grain or enriched or restored	Seldom or never eaten	About 3 servings a week	1 to 2 servings a day	More than 2 servings a day
(7) Butter and other fats containing vitamin A	Seldom or never eaten	Some each week	One serving a day	Some most every meal

MICHIGAN FRUITS AND VEGETABLES AVAILABLE AT DIFFERENT SEASONS OF THE YEAR UNDER ORDINARY STORAGE CONDITIONS¹

Late April Through June	July through Middle October		Late October Through December	January into April
Vegetables Asparagus Beets Chard Lettuce Onions Peas Potatoes Radishes Rhubarb Spinach Turnips	Vegetables Beans, lima Beans, snap Beets Broccoli Brussels sprouts Cabbage Carrots Cauliflower Cantaloupe Celery Chard Chinese cabbage Corn Cucumber Egg plant Endive Kohlrabi Lettuce Onions Parsley Peas Peppers Potatoes Pumpkin Radishes Rutabaga Spinach Squash Tomatoes Turnips Watermelon	Fruits Apples Blackberries Cherries Currants Dewberries Grapes Peaches Pears Plums Raspberries	Vegetables Beets Broccoli Brussels sprouts Cabbage Carrots Cauliflower Cantaloupe Celery Chard Endive Kohlrabi Lettuce Onions Parsley Parsnips Potatoes Pumpkin Radishes Rutabaga Spinach Squash Fruits Apples Grapes Pears	Beets Cabbage Carrots Onions Parsnips Potatoes Pumpkin Rutabaga Squash Apples

¹Dates for fresh vegetables and fruits from the garden during spring and summer are approximate for the southern part of the state. Crops in the northern part of the state ripen about two weeks later.

