

Nutrition



in School



and Community

ACKNOWLEDGMENT

To the personnel of Southside Latin-American School, one of the demonstration schools for Southwest Texas State Teachers College, San Marcos, Texas, the writer gratefully extends recognition and appreciation. The administrators, teachers, pupils, and parents have participated cheerfully and willingly in the nutrition education program referred to in this booklet.

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- II Art Activities for Latin-American Children in Elementary Grades.
- III Building Better School-Community Relations in Latin-American Communities.
- IV Music Activities for Latin-American Children in Elementary Grades.
- V Nutrition Education in School and Community.

Until the present printing is exhausted, these booklets may be obtained free of charge by writing to the Director of Public Service, S.W.T.T.C., San Marcos, Texas.

PREFACE

This booklet has been written primarily for teachers of Latin-American elementary schools; however, its use is not limited to this group. A school administrator, club leader, or anyone interested in improving community nutrition will find the material usable.

There are two important reasons why nutrition education is the responsibility of elementary teachers. First, sound nutrition at this stage has a more far-reaching effect than if established later, since children of elementary school age are developing at a rapid rate. Second, elementary teachers reach a larger proportion of the young population than do any other of our organized social groups. Although active responsibility for nutrition education is assumed by elementary teachers, there should be no failure to recognize the part home and community play in influencing child nutrition. Failure to recognize these influences results in seeing only a part of the problem involved in developing sound nutrition education programs.

It is not the purpose in this booklet to suggest procedures for scientific studies. Such studies require trained technicians and special equipment unobtainable in the average school. Only such methods will be described as lend themselves to use in the average school with little or no special equipment and with little or no skilled assistance. Teachers who are working in more favorable situations can easily make adaptations in applying the suggestions of this booklet to the needs in their own communities. Any teacher can function in a nutrition education program. Any school program can be enlivened by the introduction of nutrition activities.

Even though she is not trained in nutrition, the average elementary teacher is in a position of greater influence in changing the nutritional habits of children than any other one group of educators, including nutritionists themselves.

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NUTRITION EDUCATION IN SCHOOL AND COMMUNITY

Chapter I

STUDYING LOCAL NEEDS FOR A PROGRAM OF IMPROVED NUTRITION

San Marcos, Texas, during peace time, has a population of about six thousand people. Some two thousand of them are Latin-American, living in the south part of town. The school which their children attend is called the Southside School. This booklet tells how the Southside School and the community round about the school developed a program for the improvement of nutrition.

A. Southside Community Where the Nutrition Program Was Developed^{1*}

Nearly all of the children in the community are United States citizens of Latin American descent; 98 per cent of them were born in this country. About 37 per cent of the parents were born here. An additional 7 per cent of the parents have become citizens. The families have been in this country an average of 22 years. The population is fairly stable; only 17 per cent migrate, taking less than half their family members along and staying an average of three months of the year. There are few indigents. Types of employment vary widely, following no set pattern. Half the families have children who work. The average income is \$90 a month, with an average of 7.2 persons per family. Forty-seven per cent of the families own their own homes, which are usually neat and well cared for, although small. The average house has 3.3 rooms. The average rent is \$6.83 per month.

Poor attendance at Southside School drew the attention of teachers and other civic minded persons. They felt that this might be caused to some extent by obvious nutrition lacks among the pupils, and were prompted to initiate a school and community program for improvement of nutrition. Casual observation showed that among the food available to the com-

*Numbers refer to quoted references given in Appendix, Section III.

munity, there was inadequate use of milk, butter, green and yellow vegetables, and fruit. Only 15 per cent of the families raise the vegetables they need, and only twice that number raise chickens and eggs. Little food preservation is practiced. The consumption of milk per family is far below recognized nutritional requirements.

Although the teachers themselves were convinced of the importance of the contemplated program, they realized that they would need the cooperation of the community to make it effective and that the best way of securing this was to acquaint parents with their children's needs. So they planned for informal examinations of the children's health conditions and studied community factors in nutrition. They also planned a program of education for parents that would meet community needs and be integrated with the school program. The following pages contain suggestions drawn from the experiences of the Southside School and community, and may be useful to teachers and community leaders in building similar programs elsewhere.

B. Indications of Good and Poor Nutrition

In the first place, teachers at Southside observed the general conditions of the children's health with respect to nutrition or malnutrition, noting indications of good health and some of the symptoms of malnutrition, trying to keep in mind that mere symptoms of malnutrition, such as knock knees or bow legs or dull rough hair, may be due to other causes than inadequate diet or to individual characteristics, the cause of which can be determined only by nutrition specialists or by physicians, if at all. The lists which follow suggest some of the items included in the teachers' observations of general health conditions.²

Symptoms of Good Nutrition

Well developed body.

Weight about average for height.

Muscles well developed and firm.

Skin firm and of healthy color.

Symptoms of Malnutrition

Body may be undersized, show poor development, or physical defects.

Weight below average (but in some cases may be average or overweight), body fat and flabby.

Muscles small and flabby.

Skin loose and pale, waxy, or sallow.

Symptoms of Good Nutrition

(Continued)

Mucous membranes of eyelids and mouth reddish pink.

Hair smooth and glossy.

Eyes clear and without circles under them.

Facial expression alert but without strain.

Good posture, head erect, chest up, shoulders flat, abdomen in.

Good nature; animation.

Sound sleep.

Good digestion and elimination.

Good appetite.

Excellent general health.

Symptoms of Malnutrition

(Continued)

Mucous membranes pale.

Hair often rough and without luster.

Dark hollows or blue circles under eyes.

Facial expression drawn, worried, old; or animated but strained.

Fatigue posture, head thrust forward, chest narrow and flat, shoulders rounded, abdomen protruding.

Irritability, overactivity; or listlessness, lack of concentration.

Sleep restless, spasmodic.

Nervous indigestion and constipation.

Food habits "finicky."

Lack of endurance and vigor; susceptibility to infection.

It should be emphasized that these symptoms may point toward physical maladjustments other than malnutrition, but in any event, they afford a basis for further study and attention in order to ferret out the underlying causes.

Room teachers in Southside School examined their pupils informally on the items in the above list and on others, and recorded these in order that they might be considered in the development of the nutritional program. Other symptoms of malnutrition are included with various basic foods in the Appendix, Section II.

In Southside School, study was also made of the children's weight and of the relation of children's weight to age, height, and sex. There is danger in relying upon the comparison of a child's weight with a table of "averages" to indicate that the child's weight is, or is not, "normal." It should be clearly understood that height-weight-age tables merely show **average** weights instead of **normal** weights. If a child's body is well covered with firm muscle tissue and he looks healthy, his weight is probably "normal," and it may or may not be aver-

age when compared with height-weight-age tables. It is pitiful to see a little fellow disappointed when he learns that his weight is not the same as the table shows for his height and age, especially when we know that he can be in good physical condition and his weight be considerably less than the average, depending on basal metabolism, inherited tendencies, and general body build. It is far better to interest the child in increasing his weight by competing with his own weight record than by competing with his classmates or with the standard of averages. Copies of standard height-weight-age tables for boys and girls can be found in the Appendix, Section I. The tables should be used with caution and the children and parents helped to interpret the results wisely. During childhood it is advantageous for one to weigh slightly more than the average.

For recording height-weight-age data, the following form was used at Southside:

Date	Name	Age	Ht.	Wt.	Average Wt.	Per cent below av.	Per cent above av.
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The average layman does not know enough about food to prescribe the particular food element, such as Vitamin A, for a deficiency which he notes in any child. The best a teacher can do when she observes indications of malnutrition is to look into the child's diet and, keeping in mind the kinds of food necessary to provide balanced menus for his whole day's meals, help him have additional foods which seem to be required to balance the diet. The best she can do for a community is to help children and parents know the basic foods required for good health and to develop the practice of including them in daily diets. In the appendix are the groups of foods now considered necessary for good nutrition.

If we keep in mind that the main purpose of studying nutritional conditions in any one locality is to furnish an incentive for developing a program to improve the situation, then we realize that a cursory investigation may suffice. We should not become so involved and engrossed with establishing facts that

we exhaust time, energy, and enthusiasm for developing and practicing a program that will be effective in improving the conditions that these facts reveal.

C. Community Influences in Children's Nutrition

Circumstances in the whole community influence the nutrition of the children. Consider quality of food. Suppose we find, upon examination, that a number of school children show evidences of a lack of calcium in their diets. Inquiry into their eating habits might show that they are eating too little of the foods that contain calcium. A study of community resources for foods rich in calcium would be the next step. Investigation might show that large amounts of food rich in calcium are produced, but that most of it is exported, thus robbing the home community of foods essential to satisfy minimum health requirements. In this case people need to be informed in order that they may cultivate a home market. Further investigation might reveal that depleted soil was causing foods raised in the vicinity to be low in certain minerals. In this latter case, to attack the problem at its source might suggest a program in soil enrichment and conservation, which would be an undertaking for the agricultural agency rather than the school.

The availability of food in the local community influences its use, regardless of other conditions. Availability is determined by the types of food produced locally, storage facilities, transportation, distribution, demand for exportation and the degree of purchasing power represented in the community.

Economic standards affect what people eat, yet malnutrition is found at all levels; it is no respecter of pocketbooks. Knowledge of the part food plays in our well-being influences our eating habits, as do personal likes and dislikes, customs, and idiosyncracies. The way foods are treated in the preparation for human consumption affects their nutritive value.

Regardless of all other factors, nutrition is influenced by the health of the individual. The state of one's health predetermines the digestion and assimilation of one's food intake; thus all conditions in the community which affect health have an indirect relation to nutrition. Such conditions as composition and sanitation of the water supply, drainage, waste disposal,

and types and prevalence of disease suggest areas for needed investigation. All of the conditions mentioned above offer a logical basis upon which to build the program for improvement.

D. Getting Facts

There are many ways of securing information. The most direct way is by observation. If the community is small and the teacher is well acquainted with the homes in the locality, her continued observation over a period of time can provide her with a fairly accurate picture of conditions. On the other hand, if the community is large, or if the teacher is new, this method of determining conditions would need to be supplemented with various other ways of obtaining information.

The use of questionnaires is a very common way of securing data. These may be extremely simple or very complicated, depending upon circumstances. They may be filled in by the child, the parents, the teacher, or by the teacher in conference with the child or parent. To be of greatest benefit at the local level, a questionnaire should be made to fit the situation being considered.

In the formulation of directions and statements for South-side community, such items as the following were considered:

1. Are the directions for using the form sheet so clearly expressed that the reader is in no doubt when following them?
2. Is the purpose clear? Can the reader recognize the importance of the information called for?
3. Do the words used in the form correspond to the understanding of those who are to read it?
4. Can the questions or requests be answered easily, as by checking or by using "yes" or "no"?
5. Are the questions free from implying that a negative answer is undesirable? For example: "Are you helping the war effort by planting a victory garden? Yes— No—." A better question would be: "Do you have a garden at home? Yes— No." Questionnaires are to secure information, not to teach.
6. Is the material called for free from items of a personal nature that would cause embarrassment or chagrin to those concerned?
7. Can the form be filled in quickly?
8. Will the completed form really tell you what you are attempting to find out?

Questions should be made to fit local circumstances. For example, in Form I, the purpose was to find out what foods were home-grown, and to what extent, in relation to the use of these foods by Southside families.

FORM I

Name..... Address

Date..... School..... Grade

Directions: Check in the appropriate spaces below if these foods are raised by your family:

	None	Small amount	All family needs	For sale
Chickens
Eggs
Milk
Butter
Pigs
Vegetables
Fruits
Other Foods

One might wish to list separately the vegetables and fruits that are commonly raised in the specific locality. Likewise, any or several of the items listed might be omitted because the teacher knows that it is not practical to ask the question. Forms calling for impersonal data should always provide space for identification, such as name, address, date, grade, school, and other pertinent material that might be useful.

For information concerning eating habits, Form II is suggestive. It was used in a community in Iowa.³

FORM II

Name..... Address..... Date.....

School..... Grade..... Teacher.....

Directions: Read the statement carefully and place a check (x) in the proper space.

1. Do you eat breakfast? Yes—— No——.

a. If you do, check the foods you usually eat:

___ Biscuits	___ Orange	___ Eggs	___ Cookies
___ Toast	___ Grapefruit	___ Milk	___ Potatoes
___ Cold Cereal	___ Fruit Juice	___ Pancakes	___ Sweet Rolls
___ Hot Cereal	___ Tomato Juice	___ Coffee	___ Cocoa
___ Other bread	___ Other Fruit	___ Other Drink	___ Meat (kind)

b. If you do not eat breakfast, check the reasons listed below.

___ No time ___ Not hungry ___ Breakfast not ready
 Other reasons _____ Do not like breakfast

In determining the amount of milk each child is getting per day a form may be used similar to Form III, which was used in Iowa.³ Such a record might show the wisdom of introducing a mid-morning milk-drinking program in the school room. It should be explained to the child that we use milk in other ways besides drinking it in its natural state. Otherwise, a small child may not understand that milk made into other drinks, as cocoa, is still milk.

FORM III

Name _____ Address _____ Date _____

School _____ Grade _____ Teacher _____

Directions: Read the statements carefully and place a check (x) in the proper space.

Do you use milk each day? Yes _____ No _____

If you use milk, show how much you use each day.

1 glass _____ 1 cup cocoa made with milk _____

2 glasses _____ 1 serving ice cream made with milk _____

3 glasses _____ 4 glasses _____

If you do not use milk, why? Check reason.

Not served _____ Do not like it _____ Other reasons _____

Consulting records offers still another way of getting information concerning conditions which affect nutrition. Many schools may have records that give certain health information for the individual child, such as personal data on weight, height, immunization or diseases. State and County Health Department records offer a source of information. These will be sent upon request. If you do not know the individual in charge, write to the State Health Department, Austin, Texas. The mortality rate and causes of death as reported by the attending physician might show prevalence of certain diseases that are materially influenced, and even caused, by malnutrition. If there is a lunchroom in the school, records of the menus served, the number of children eating, the number paying for their lunches, the number eating free, and the amount charged per meal could offer a basis for study.

Extension service offices will have records pertaining to soil fertility, food production, and conservation. An example of a study of consumption practices for Texas in general shows:⁴

A high consumption of starches and sugars that interferes with consumption of other foods.

Inadequate intake of high quality protein.

Low consumption of milk.

Low consumption of fresh fruits and vegetables.

Since, as has been illustrated, there are different ways by which one may find out the conditions affecting nutrition, one should choose the method, or methods, best adapted to the community and to local facilities. In making this choice, these questions might be helpful:

How much time will this method require?

How many people will be reached by this method?

Is there any money cost?

Who is going to pay for it?

Does this method require the assistance of others? If so, how will it be secured?

Is the information of confidential nature? If so, how is it to be obtained? What use will be made of it? How may it be kept confidential?

E. Evaluation of Information

The most common source of information is the people themselves; their economic standards; their living conditions and customs; their health habits, particularly their eating habits; their likes and dislikes; their understanding of the importance of good nutrition and their interest in the problem—all offer valuable information to anyone concerned with a study of community nutrition.

There are a few people in any locality who are in key positions which enable them to give opinions based on wider observations than most others have the opportunity of making. A mother might comment on what wholesome lunches she and the next door neighbor prepare for their children to take to school; the teacher, on the other hand, who sees children from all the homes represented in her room, may comment on the poor quality of lunches the majority of children bring from home. The principal of one school in a community may conclude that a contagious disease epidemic is on the decline, while it may only be starting in other schools in other parts of town. Doctors, nurses and even druggists can report on such matters with far more accuracy than can other individuals. If your neighborhood is served by only one grocery store, then the grocery store manager has an index to the buying habits of people in that locality. In larger centers the wholesale grocers can tell you much concerning the food choices of people, as can dairymen, market managers, millers, and traveling food salesmen. People in such positions have an over-all view difficult to obtain from any other source unless a detailed study is undertaken, and even then they should be called upon to supply data. The representatives of various state and national service agencies can give information of a reliable and scientific nature, since they make surveys, keep records, initiate programs, and evaluate progress.

One must realize that information obtained from the people themselves reflects subjective thinking plus personal prejudices and opinions which color interpretation and cause facts to be distorted. People at large are inclined to be over-influenced by a few personal experiences and to offer them as evidence of a conclusion that needs to be supported by a wide sampling of cases.

Chapter II

EDUCATIONAL ACTIVITIES IN NUTRITION IN SOUTHSIDE SCHOOL

By the time children reach school age, and later, they have begun to question many food and other health practices that have either been urged upon them or that have come under their observation and curiosity. Such questions as these indicate a child's interest. "Why do I have to drink milk?" "Why does spinach make Popeye strong?" "Why can't I go to school without my breakfast?" "Why do I have to eat my vegetables before you will let me have my ice cream?" In seeking to develop understanding which would enable the children to answer such questions as these, the teachers at Southside School began introducing nutrition activities. Accounts of these activities will be given from time to time throughout the remaining chapters of the booklet. At Southside we considered that the child's interest was the criterion for initiating nutrition activities. His abilities and needs were guides in the selection of content. We made the school the center of our community program.

Scopes of interest commonly accepted at the following levels of learning are:

Primary grades, interested in self and family.

Intermediate grades, interested in self, family, close associates, but beginning to be interested in community life.

Upper Elementary grades, interested in self, family associates, and beginning to assume community responsibilities.

Parent groups, interested in the well-being of their families, and actively assuming responsibility for community, state, and national welfare.

Understandings which the school should try to have the child develop at these levels would be similar to the following:

Primary grades, foods make us grow; they help make us strong.

Intermediate grades, foods make us grow; they help make us strong; our choice of food influences our growth; our health habits influence our growth.

Upper Elementary grades, foods make us grow; they give us strength and health; we have choices in what we eat; certain types of foods do certain things for us; we can influence the use of foods in our bodies by our health habits; foods consume a large part of the family income; we owe it to ourselves and to our community to be healthy and to help our families to be healthy, at the lowest practicable cost.

Parent groups, food is basic to health; it is the first economic need in the family; wise consumption is a moral obligation; the world's food sources are of international importance.

Considering these understandings, a number of activities and projects at each level were used successfully at Southside. The placement here given was arbitrary. Interests and needs of the pupils in the local community were the final determiners; they might be different in another community.

The teachers' main concern at Southside was the development of sound habits in nutrition. It was the desire of the staff to have a practical program. In many instances far too much nutrition information is given in a purely academic manner. For example, earlier observation in a fifth grade health lesson in Southside School revealed the children's reading a paragraph each on the need of the body for minerals. The children read that calcium is needed for good bone and teeth development. So what? Not one thing was being done to make the information impressive; not one effort was made to investigate their specific need for this mineral or to help them get more of the foods that supply calcium. In this school, when, one semester later, the health screening tests showed that 127 children out of 222 had large cavities in their teeth with some children having as many as nine of their teeth badly decayed, here was the problem for these children to study!

How can academic teaching be changed into problem-solving activities? At Southside we tried to look for "whys," then we tried to do something constructive about it. If, for example, children are not using adequate amounts of milk for their best health, is it because they do not have an opportunity to use milk? Because they dislike it? Because they satisfy their appetites with other less needed foods? If milk is not available to them, is it because fresh milk is scarce in the community and

the family does not recognize the value of milk in other forms, or is it because of limited buying power in the family? Answers to these and similar questions gave us a basis for some of our activities.

There are probably more suggestions included in this chapter than any teacher would choose to use at any one level. Those that are omitted at one level can be added to the ones for consideration at the next higher level, and so on. Although an activity may have been used previously, with adaptations it can be used at each successive higher level by changing the approach, the emphasis, or the procedure, and enlarging or extending the outcomes expected.

On the other hand, the activities in this chapter are not presented as the only ones possible in a program of school and community nutrition. They are intended merely to be suggestive. Any teacher may think of others that will be more useful in her community. It is hoped, however, that problems and activities developed here will be useful as a guide to school and community cooperation in a program that is adapted to children and adults in any community which is interested in improving its nutrition.

Nutrition education should not be thought of as an extra-subject, nor should extraneous nutrition activities be added to an already full schedule. Both should be a part of the normal school program, fitting in as they occur, continuing as long as there are need and interest, culminating when the objective has been reached, with no thought for definite schedule, time limit, subject, or "course."

The greatest benefit from any activity will be derived if the following steps are clearly planned and provided for: ⁵

One, work toward a definite understanding of the problem. Note the use of the word "understanding" in the place of "interest." The alert teacher can create interest, but the experience and background of her children will determine their understanding.

Two, help the children work out their activities and investigations in a simple, logical way.

Three, guide the children into evaluating the evidence presented by the results. Encourage them to make their own decisions. Their con-

clusions should answer the problem that was recognized in step one.

Four, help the children see how the conclusions drawn from this problem applies to them. It is a further responsibility of the teacher to initiate ways of maintaining their interest in applying this knowledge until it becomes a habit in their daily lives.

A. For Primary Grades

In the primary grades, milk, which is generally acknowledged as an important food for children, is the natural one to consider first. In Southside School, the primary grades began their nutrition study with milk. If, for any reason, however, the teacher has occasion to believe that it would be more effective to introduce another food first, she should do so.

The activities which follow are based on the program in nutrition which was developed in the Southside School of San Marcos. They should not be copied, but may be used for suggestions, and adapted to the needs of other communities.

1. PROVIDING OPPORTUNITIES FOR CHILDREN TO OBSERVE THAT MILK MAKES US GROW.

Basal primary texts contain many references to young animals and their feeding. Pictures of animals or babies getting milk may stimulate interest. Keener interest, however, will result from seeing real, live animals feeding. This might occur on a visit to a farm, to the house of a child who has some pet with babies, or a pet, such as a cat with kittens, brought to school. If the children can see the young animals at regular intervals they can easily note changes in growth. If it is not practical for all the groups to see the kittens or other little animals over period of time, perhaps the child in whose home the pet lives can report on growth and other changes which he sees, make stories about the baby animals and what makes them grow, draw pictures of them, and read stories about them in several other books.

After observing growth in young animals, children will be interested in checking their own weight. It is normal for a young child to gain weight. Checking should not be done so often that no increase can be measured. Once a month is probably often enough. Avoid competition between children. A child should be guided into trying to increase his own weight at a normal rate instead of trying to outweigh a classmate. Although a child may not conform to standards of averages found in height, weight, age tables (see Appendix), he may be normal in weight. There is one principle upon which all child health authorities agree: that all healthy children grow. Each child, however, has its own pathway of development. Failure to gain in weight over a period of one or

two months may not have much significance, but a failure to make a gain for three successive months is nearly always a sign that something is wrong, either because of poor health habits or because of a disease or defect which needs medical attention. ⁶ Weight records should be sent home so that parents can become aware of progress or lack of it.

Interest in milk-drinking programs at school will be heightened as a result of these activities. For discussion of milk-drinking program at Southside, see Chapter III, p. 42.

As a matter of keeping interest alive over a long period, a returned or discharged service man might be invited to visit the class and talk to the children about Uncle Sam's food for his fighting men. A father or brother of one of the children might be available. A little fellow in the class might have a big brother on the football team. He could report that the coach recommends the use of milk for big boys.

If the children are inclined to drink carbonated beverages in the place of milk, an animal-feeding experiment is helpful. Albino rats or mice are very suitable. (See directions for animal-feeding experiments in the section under Intermediate Grades p. 19). At the primary level, have the children use two rats, same litter, sex, and as near the same size as possible. Each should have the same cage diet. In addition, the children should give one carbonated beverage to drink (no water) and the other, milk (no water). Children should be warned not to interfere with the experiment by feeding the rats other things. The experiment should be continued only a few weeks until difference in size is apparent upon observation. When the experiment originates at the primary level, it is not necessary to keep weight records, since the young child's conception of growth will be realized by observing difference in size of the two rats. Children at the higher grade levels may wish to share the experiment, in which case undoubtedly weight records would serve as an additional evidence or proof of the rate of growth. When children are convinced that the rat getting milk is growing faster than the one drinking carbonated beverage, either put both on milk and watch the smaller one gain, or discontinue the experiment.

2. TEACHING THE CHILDREN TO USE MILK IN MANY WAYS.

Taking milk apart is an educational activity for the young child.⁷ (One little boy asked his mother if it hurt the cow when you cut her open to get the box of butter out of her!) The children should begin their activity with milk in the form in which they are most accustomed to seeing it. In rural communities it is probably in a bucket; in towns or cities, in a bottle. The children should note its appearance and describe it; taste a small amount. As tasting is going to be suggested in connection with numerous activities, here are some ways that equipment may be available; each child may bring a small bowl, glass, spoon from home (they may be stored in the room); if there is a lunchroom, dishes and other equipment may be borrowed from it. One school under observation has a portable kitchen that any room in the build-

ing may use. It consists of a low kitchen-cabinet on coasters, or rollers, and is equipped with utensils for food preparation and serving. Likewise, a portable hot plate, gas burner, or oil burner may be available.

In helping children separate milk into different parts, allow it to stand in a cool place until at least a day old; note cream; remove it; then have the children taste the cream and also the skimmed milk. Place cream back in a cool place. Allow skimmed milk to remain at room temperature. In a day or so, examine each again. Have the children taste the skimmed milk which is now sour. Let it continue to stand until it clabbers. The children can then pour it into a clean bag made of thin material. A liquid will drip through the bag into a bowl. Teach them that this liquid is mostly water and called whey. When the watery whey stops dripping, a soft thick lump of white material is left in the bag. It is called curd. Have them taste the curd and whey. Recall nursery rhyme about a little girl eating curds and whey. Have the children mix a little salt and cream with curd to produce cottage cheese.

Have the children place the remainder of the cream in a fruit jar and shake it until it turns to butter or use small churn or egg beater. Have them separate butter from buttermilk. To do this, they pat butter into a lump with wooden spoon or spatula and pour buttermilk off into another container. The children should taste each of these. Evaporated milk should be shown and tasted. If dried milk is on the market in the community, it should also be shown and tasted. The children can report in class on the various parts of milk they use in their homes.

Ways in which milk may be used in our homes can be of sufficient interest to warrant activities on the part of the children. Ice cream is a universal favorite. With the teacher's guidance, the boys and girls can make some. Cream soups offer a method of using more milk. These are easy for the children to make. Junket desserts are simple and inexpensive to make. Directions for the teacher's guidance come with the package. If there is a surplus of raw milk in families, cream cheese is practical for the children to make. In each instance that food was prepared in class as a means of increasing its use in Southside community, step-by-step directions, in the children's own words, were charted or described by them to take home to their parents so that preparation could be repeated in their homes.

Here is the story which one class made and took home to their parents:

HOW WE MADE CHEESE

BOYS AND GIRLS LIKE TO EAT CHEESE.
IT IS MADE FROM CREAM AND MILK.
IT HELPS US TO GROW.
THIS IS THE STORY ABOUT OUR CHEESE.

FIRST WE HAD ONE GALLON OF CLABBER.
 WE HEATED THE GALLON OF CLABBER.
 WHEN THE MILK WAS CURDS AND WHEY WE PUT IT INTO A
 SACK TO DRIP.
 THE SACK WAS PLACED OVER A BUCKET.
 WE LET THE MILK DRIP UNTIL ALL THE WHEY WAS OUT
 THEN WE WERE READY TO MAKE THE CHEESE.

Here is the story another class dictated to their teacher. She wrote it out and hectographed copies so that each child had one to take home to his mother.

WE ARE GOING TO WRITE ABOUT MAKING CHEESE.
 THIS IS WHAT WE PUT INTO THE CURDS.
 ONE HALF TEASPOON OF SODA.
 FOUR TEASPOONS OF BUTTER.
 THEN WE COVERED THE CURDS FOR TWO HOURS.
 AFTER TWO HOURS WE FINISHED MAKING THE CHEESE.
 FIRST WE PUT ONE CUP OF SWEET CREAM INTO THE CURDS.
 THEN WE PUT TWO-THIRDS TEASPOON OF SALT.
 WE ALSO PUT A FEW DROPS OF BUTTER COLORING.
 WE PUT THE MILK INTO A PAN ON THE STOVE.
 WE STIRRED THE MILK ALL OF THE TIME.
 WHEN THE MILK WAS THICK WE PUT IT IN A DISH.
 WHEN IT WAS COLD WE HAD GOOD CHEESE.

In some localities, sources of milk are unfamiliar to the children. In such cases, a class visit to a dairy farm and creamery would be helpful. Following this, in handcraft the children could make a farm in the sand table; model cows and other animals out of clay; construct a dairy barn out of cardboard or boxes; plant quick-sprouting grain seeds for green "grass." They could paint a large mural of a farm with milk cows.

As a culminating activity, a room program could be developed for parents and children from other rooms. The children could present some of the songs, poems, and stories learned in connection with the unit. Drawings and paintings could be placed on exhibit. The children could write or, in the case of a beginning class, dictate for the teacher to write letters to their parents inviting them to come to see the farm. If the children have churned, as refreshments they could serve butter spread on crackers, or milk in any of the forms that was a favorite.

3. HELPING THE CHILDREN TO EAT NEW VEGETABLES AND FRUITS.

Find out with which vegetables and fruits the majority of children are familiar. A seed catalog showing colored pictures or an arrangement or display of real vegetables and fruits which children have brought from home offer good opportunity for discussion. Find out which are eaten by most children, which are raised in home gar-

dens, and which are popular. A class or committee trip to a food market or grocery will afford interest. Have children look for vegetables they know; also, pick out a few that they do not know. After they return from the visit, have them draw the vegetables they did not know. Have them learn names of these. Second or third grades can learn how to spell them. Choose a few, one at a time, from a list of the unfamiliar ones for the children to prepare and serve in class. Use simple recipes requiring ordinary equipment likely to be found in most homes. Be sure, even at this level, that preparation practices follow sound principles of vegetable cookery to preserve nutritive value. In this way, the charts, posters, or descriptions which children write and take home contribute to better cookery in the homes. Have the children follow these directions:

Use fresh foods.

Wash thoroughly.

Cut lengthwise instead of crosswise.

Cook in natural skins when possible.

Cook as quickly as possible with a lid on vessel.

Try to avoid having excess water left unless it can go into soups or sauces.

Use raw when possible.

Have the children prepare vegetables and fruits for eating raw. These may be served for lunch, as they are, or combined into salads. However, it is well for children to cultivate a liking for foods in simple forms.

Any one of the foods which children have prepared in class can be adapted for use at special room programs where refreshments are to be served.

In learning to eat new foods, children can develop in their own words a code to follow. One third-grade made these:

When you are served a new food, take a little instead of refusing it.

Chew it and swallow it.

If you do not like it the first time, try it again the next time.

Taste food several times before you say that you do not like it.

In connection with serving foods in the classroom, there is excellent opportunity to practice table courtesies and to become familiar with table equipment. The group may take turns in eating together in a family-like situation in front of the room while the rest of the class are served at their desks. Children can be taught how to set the table, using various table equipment and arranging simple center pieces, perhaps using vegetables, fruits, and native leaves some of the time. Doll furniture and dishes may be used in table service if available. If not, improvisations can easily be made.

A teacher can check the main outcomes at this level by asking herself these few questions: Are my school children in the habit of using milk in adequate quantities to support their best growth and development? If not, have I done all that I could in helping them get as much as possible, even though it is short of their needs? Have they each learned to eat a few fruits and vegetables? Have they a concept of food as a source or means of growth and strength? If these questions are answered affirmatively, she is justified in feeling a sense of satisfaction in having helped the children to get a sound start on the road to good nutrition.

B. For Intermediate Grades

Any activities suggested for the primary children may be used at the intermediate level if needed. The approach, emphasis, and conclusions should be varied as the situation indicates. Activities at this level can be broader in scope and a little more detailed than those for primary children. The teacher should continue stressing use of milk, of additional fruits and vegetables, and should introduce use of whole grain cereals. Children are still interested in growth, and in becoming strong, and this interest can be used to stimulate correct food habits.

1. TEACHING CHILDREN THAT CERTAIN FOODS DO CERTAIN THINGS FOR US.

One convincing way to teach children that certain foods do certain things for us is through animal-feeding experiments.⁸ Children not only learn facts in an impressive manner but they also enjoy the project. They can share phases of it with the entire school and community, thus broadening the scope of its value. Children's natural interest in animals is very keen at this level. Practically every phase of an animal-feeding experiment can be closely correlated with other class work, e.g., manual arts in making cages, science in handling animals, arithmetic in calculating diets and checking weights, reading and writing in keeping records, and oral discussion in reporting on progress and results.

Reasons for using white rats for nutrition experiments.

Rats grow rapidly—thirty times as fast as humans; thus defects in diet show up quickly. Their systems react similarly to those in humans. Rats mature sexually when about 80 days old; they reproduce quickly and produce an average of 8 in a litter. The gestation period is about 21 days and so is the lactation period. The weight at birth is

about 5 grams and at weaning time, about 30 to 40 grams. It is at this stage that they are ready for experimentation suitable for elementary scope.

Source.

At Southside we got our white rats from the State Laboratory, Austin, Texas. If the people there cannot supply white rats, they probably can suggest where they may be obtained.

Care.

A healthy rat is clean, and has smooth, glossy fur, bright, pink eyes, pink nose and ears, a tail that is smooth and free from roughness or blotches. It is quick, alert, and easily handled. Rats should be kept in a fairly warm room, 50 to 80 degrees F., free from drafts, in a quiet part of the room, and out of direct light. To prevent chilling at night, there should be plenty of shredded paper in the cage for bedding, and the cage should be covered with an old blanket or several thicknesses of newspaper, all of which should be removed the next morning.

Cages.

Rats should be kept in metal cages which the boys can make, using wire screening, preferably $\frac{1}{4}$ - or $\frac{3}{8}$ -inch mesh. Used wire may be available.

A cage of a good size could be made from a rectangular strip cut to about 30 inches by 10 inches and a circular piece of 10 inches in diameter for the bottom.

One-half inch cuts should be made in the edges of the 10-inch wire disc about one inch apart around the circle. The projections should be bent upward until they are at right angles to the disc.

The children should put the disc inside the cylinder, pushing it down so that the flat surface is one inch from the bottom of the cylinder, and tie it to the sides of the cylinder with soft wire. This makes a raised floor for the cage; excreta fall through, thus making it easy to keep the cage clean and to avoid objectionable odors. Tinnern shears, pliers, and hammer can perhaps be borrowed from someone in the community if the school does not have this equipment.

A metal cake or pie pan 9 to 10 inches in diameter will serve for the top, and a metal or enamel milk pan 10 to 12 inches in diameter, at least 2 inches deep, for the cage to rest in. It may be round or square.

Setting up the cage.

Folded newspapers can be fitted into the bottom of the deeper pan to catch excreta and bits of food that will drop through the bottom of the cage. The cage should be set in the pan. These papers must be

changed every school day. They are easily burned.

Fastening food and water cups to the side of the cage with wire prevents them from being upset by the rat. Empty cold cream jars or any small jar can be used.

The cake or pie tin on top of the cage should be weighted down with something like a brick.

Weighing the rats.

Balance scales are the most satisfactory type to use. (If not available, gram-spring scales may be used.) A coffee can to hold the rat will simplify weighing and keep scales clean. A jar to serve as counterpoise for the coffee can saves time. The jar can be filled with sand, shot, or tacks in sufficient amount to balance. The coffee can should be placed on the left side of scales and the counterpoise on right side, and the two should be balanced perfectly. The rat should be picked up firmly, but gently, around the middle, and placed in coffee can with enough weights added to the right side to balance. Record weight in record book and put rat back in cage. Then check weights as they are removed from balance to be certain that correct weight has been noted.

Records.

Throughout the experiment careful records must be kept of the age, weight, and changes in appearance of the animals. This cannot be trusted to memory but should be recorded in a book. A bound or sewed notebook is better than a looseleaf book from which pages may be lost. One page should be kept for each animal. Children can be helped in making forms, as follows: at top of page write number, or name of animal, sex, age, date of beginning experiment, and diet being used. Rule remainder of page to give five vertical divisions and head each column as follows: date, weight, gain, food eaten, notes.

To prepare growth curves for rats, use squared paper, ruled in one-inch squares. Let squares running across the sheet represent time in weeks and let squares running up and down represent weight in grams. Mark on the chart a cross or circle for the weight of each animal each week and rule a line to join these points.

Individuals or a committee can use large sections of white cardboard to make similar charts on a large scale to hang in classroom or exhibit hall.

A record is also necessary for the cage of the animal. A 5" x 5" recipe card, or one of similar size, can be used and fastened to the top of the cage. On this card are recorded the number or name of the animal, any distinctive marks which have been used, and the diet being followed.

In this chapter are included a few experiments which child-

ren can work out to show the class that choice of food makes a difference in growth and health. From these experiments additional ones can be developed if circumstances suggest it. Children should make the plans and do the work.

EXPERIMENT I

THE EFFECT OF IMPROVING A POOR DIET WITH GREEN VEGETABLES, WHOLE GRAIN CEREALS, AND MILK

Objective. To find out whether or not eating milk, vegetables, and whole grain cereals improves health.

Animals. Two albino rats, 21 to 28 days old, weighing 40 to 50 grams, of same sex, and from same litter.

Diets. The following diets have been prepared from dried foods in order to make it easier to mix thoroughly, and so that the food can be made up all at one time and kept throughout the experiment.

Proportions in the diet have been calculated from weights of fresh foods found to be used in many American families. The poor diet corresponds approximately to the following: 1 serving farina, 4 slices white bread, 1 serving macaroni, 2 pieces cake or cookies, 2 small servings meat, 1 serving vegetable, 1 serving potatoes, 1 small serving cooked fruit, and 1 tablespoon butter. The improved diet has had added to it the equivalent of three glasses of milk a day; whole grain cereal is used instead of white flour and the amount of sugar has been decreased. Also a green leafy vegetable, lettuce, has been added.

COMPOSITION OF DIETS

Ingredient	Poor Diet	Improved Diet
White flour, enriched	6½ oz.	None
Whole wheat flour	None	6 oz.
Beef, dried,	1 oz.	Same
Fat (Crisco)	½ oz.	Same
Butter	½ oz.	Same
Potatoes, dried	¾ oz.	Same
Carrots, dried	¼ oz.	Same
Apples, dried	¼ oz.	Same
Sugar	2 oz.	1 oz.
Milk, dried	None	3 oz.
Lettuce	None	Small piece daily
Salt	3 gms.	Same

Dried chipped beef is suitable to use. About ¼ pound is required.

Potatoes should be sliced very thin and dried in slow oven (230° F.) 2 to 2 ½ hours. About ½ pound of potatoes is required for drying.

Carrots should be shredded into thin strips or cut into very thin slices, spread on pan or tray and dried in oven at a temperature as low as possible to prevent scorching or charring. About 4 ounces of raw carrots are required.

Apples should be cored, cut into very thin slices, and dried at a temperature as low as possible.

Grind each food separately in food chopper.

Weigh accurately all ingredients of the diet and mix thoroughly.

Procedure to be planned and followed by pupils.

1. Weigh rats, record weight, and put them into individual cages. Label cage with animal's number or name, and diet.

2. Put clean paper and pans under cages every day. Wash cages once a week.

3. Give one rat the poor diet; give other rat the improved diet and a small piece of fresh lettuce each day.

4. Weigh rats once a week, on same day of week each time, record weight, and make growth curves.

5. Observe animals daily and record any differences in size, appearance, and behavior as soon as they appear. The rat on the poor diet will be smaller and thinner and will be more difficult to handle.

6. At the end of four weeks, if differences are clearly seen by this time, make the final records and discontinue the experiment.

Suggestions for the teachers.

Help children formulate their conclusion, which probably is that improving the diet has influenced health as shown by weight increase and better appearance. Discuss changes and additions to the diet and bring out reasons for these.

EXPERIMENT II

DOES THE CHOICE OF A SCHOOL LUNCH MAKE A DIFFERENCE?

Objectives. To find out which type of school lunch is best for good nutrition and health. To find out value of milk as a supplement to school lunch.

Animals. Two albino rates, 21 to 28 days of age, of same weight and sex, and from same litter.

Diets. No. 1. Enriched white bread and jelly sandwich, and cookie.
No. 2. Whole wheat bread and jelly sandwich, cookie, milk, and fruit.

The sandwich for Diet No. 1 may be chosen to represent kind most frequently used by children in the community where the experiment is being used. If children are in the habit of spending money for soda pop or candy, these should be used in the experiment. Diet. No. 2 should show simple improvements to same school lunch, first and foremost by addition of milk. Each day the rat on Diet No. 2 should have a little fresh milk in the cup in place of water; if fresh milk is not readily available, diluted evaporated milk or whole milk powder mixed with water will serve. A piece of apple, or crisp, raw carrot, or a leaf of lettuce should be added in the sandwich. Whole wheat bread should be used instead of white bread used in Diet No. 1.

Procedure which children should be helped to plan.

1. Weigh rats, record weights, and put them in separate cages. Label cage with name or number of rat, and diet.
2. Put clean papers and pan under cages every day. Wash cages once a week.
3. Give one rat Diet No. 1, and give other rat Diet No. 2, and milk in place of water. Rats will eat only one or two square inches of an ordinary sized sandwich each day. Give fresh food and milk each day.
4. Weigh rats once a week, on same day of week each time, record weight and draw growth curves.
5. Observe animals daily for differences in size and appearance.
6. At end of four weeks or as soon as definite differences in weight and appearance are observed and application made, discontinue the experiment.

EXPERIMENT III

Objectives. To find out the effect of limiting the energy intake, or calories below level required for optimum growth. To learn how normal weight may be maintained.

Animals. Two albino rats, 21 to 28 days of age, weighing 40 to 50 grams, same age, and same sex. The rats should be litter mates.

Diet. Whole wheat flour.....	1 lb. 8 oz.....	or 666 grams
Whole milk powder.....	12 oz.....	or 333 grams
Salt	$\frac{1}{2}$ oz.....	or 15 grams

These weights will give approximately the amount of diet required for this experiment. Each ingredient should be weighed separately and put in clean bowl; mix with clean spoon and store in clean jar; cover, label and keep in cool place.

This diet is approximately equal to $1\frac{1}{2}$ slices of fresh whole bread and $\frac{1}{2}$ glass of fresh whole milk. This has been calculated on the basis that twice as much whole-wheat flour as milk is used and on the basis

that 1 ounce dried whole-wheat flour equals $1\frac{1}{2}$ ounces of fresh whole-wheat bread, and 1 ounce whole milk powder equals $7\frac{1}{2}$ ounces, or about one glass, of fresh whole milk.

Procedure which pupils help plan.

1. Allow one rat as much food as it will eat; put more food in the cup than rat will eat and each day weigh food that is left; by difference find amount of food actually eaten.

2. Give second rat $\frac{2}{3}$ the amount eaten by first rat on previous day. For example, if rat No. 1 ate 12 grams on Monday then rat No. 2 is given $\frac{2}{3} \times 12$, or 8 grams on Tuesday (to the nearest gram). On Saturday give rat No. 1 a double portion, and to rat No. 2 give twice the amount it would ordinarily be given for that day (2 times $\frac{2}{3}$ of Friday's food consumption of rat No. 1).

3. Give both rats clean water and clean food cups on alternate days, or more frequently if necessary.

4. Record daily food consumption on cage card.

5. Put clean papers and pan under rat cages daily to avoid any odor in classroom.

6. Once a week weigh rats and record weight and total food consumption for record book. Plot growth curves. Record differences in behavior or appearance of rats. The rat on restricted food intake will become irritable and may have a tendency to bite, and its fur will probably be rougher.

7. After 3 weeks following this procedure reverse the rats; that is, give unlimited food to rat No. 2 which has been on restricted intake and give rat No. 1 the same amount as rat No. 2, formerly received.

8. At the end of six weeks, weigh animals, complete records and growth curves and discontinue experiment.

Suggestions for teachers.

The conclusion which children can be helped to make from this experiment is that normal weight and growth cannot be maintained without a sufficient amount of food. By reversing the animals at the end of three weeks it is shown that growth restriction was solely due to the lack of food and not because anything was wrong with the animal itself.

It should be pointed out that limited amounts of no one food are fattening; it is the total amount of food which is eaten in relation to body needs that determines weight.

Food is necessary to meet the energy needs of the body, which are measured in calories. Discuss the relation of calories to activity. The importance should be stressed of having an adequate breakfast before coming to school, in order to get enough calories for the daily needs of the body.

The irritability of the rat with inadequate calories may be pointed out to the girls; show how proper food habits may be related to popu-

larity among fellow students.

These or similar experiments may need to be spread out over half the school term or longer. Every opportunity should be used to acquaint all the children in school, **and the parents**, with the results of the pupil's animal-feeding experiments. It would be a pity to confine the benefits that are derived from such functional teaching to only the group directly responsible for the project. Naturally, the parts of the project that are to be shared will vary with the group under consideration. Younger children, for example, should not be confused with too many details; evident results will be more convincing by stressing only one or two causes for differences. Experiments of this type make good newspaper articles, written in newspaper style to appeal to the average reader. Upper-grade language arts classes might function in this capacity. If there is a school paper, stories or charts at each level might be included in it. Valuable lessons in arithmetic can also be developed.

After thoroughly establishing the concept that our choice of food definitely influences our growth and general well-being, it is next in order to provide opportunities whereby the children can learn how to make choices. In all probability they will be eager to approach this new problem.

2. HELPING CHILDREN LEARN HOW TO CHOOSE FOODS FOR GROWTH AND HEALTH.

Children at this level will be interested in selective service reports on rejections which have been due in part to poor nutrition. If your school is not supplied with sufficient charts, leaflets, and bulletins from the War Food Administration, write to the Regional Office, W. F. A., Wilson Building, Dallas, Texas, and ask for a list of publications from which you can order those that interest you. All such materials are sent without cost and can be supplied in quantity for distribution. Not all of the material is suitable for use with elementary children, yet much of it is excellent. The government, in attempting to reach masses of people, used expert artists, psychologists, and writers who prepared the material in simple form. Many facts are presented pictorially and graphically.

Have children keep records of the foods they eat for an entire day. Always speak and work with food for a day rather than for one meal. There is no such thing as a "poor" meal or a "good" meal except as it relates to the other foods eaten on that particular day.

You may wish to have each child indicate the food groups represented by his own diet. One of the leaflets from the War Food Administration has a reproduction of the Basic Seven Food Groups and blank table for the child to fill in his own food practices. The chart included on page 39 shows a summary of results from a group of Southside children. Such a table shows the child which groups of foods have been slighted. This offers a sound basis for additional projects. Encourage children to carry information home. Help both children and parents to realize that choices are influenced by personal selection as well as by availability. The family may have provided adequate meals, yet a youngster may unobtrusively fill himself up on mashed potatoes and gravy, leaving untouched the green and yellow vegetables. On the other hand, and in many instances, there were no green or yellow vegetables from which to choose. Regardless of the community, certain diet deficiencies can be anticipated because they are common to the nation. One of these is the use of inadequate amounts of whole grain products.

Have children bring empty cereal boxes and samples of any grain foods they may have at home, such as corn, oats, wheat, rice or barley.⁹ Have them identify grains with which they are not familiar. Have them soak whole grains and cook until tender. Question them and guide them as follows: What do you have? Grind grains coarsely and cook. What do you have? (Cracked grains.) Grind some still finer. What do you have? Color the bran coats brown, the germ yellow, and the starch white. Color a large one on the board. Suppose you take off the bran coats. What do you have? (Erase the brown.) Suppose you take out the germ. What do you have? (Erase the yellow.) What will you have if you grind it? (Cream of wheat.) If you grind it finer? (White flour.) How does white flour differ from whole wheat flour? Find out from your science books which food elements are present in whole grain products that are missing in white flour. (Minerals, vitamins, cellulose, proteins.) Examine the labels on cereal boxes, on bread wrappers, on flour sacks or advertisements of flour. What is meant by "enriched"? Some of the lost minerals and vitamins have been put back into the cereal food, but the cellulose and proteins that were removed are still missing. Enriched products are more wholesome than highly milled ones, unenriched, but not likely to be as nutritious as whole grain products. Cereals are our most economical foods. Are you using whole grain products in your homes? Can you increase their use?

Another group of foods too often neglected is vegetables, particularly green and yellow ones. By questioning, one may make a simple check which will soon reveal to what extent certain common, available vegetables are eaten by the children and their families. With this knowledge, it is easy to see which available vegetables the children might be challenged to learn to eat. One way to provide an opportunity for developing interest in vegetables is to have a frame garden, tub-garden, victory garden, or some other type suitable to the loca-

tion. Children will be more likely to eat vegetables they have helped raise, and some of the interest will carry over into the homes, and more food will be raised at home. The children can plan for use of the vegetables. One group raised carrots and radishes to supplement their mid-morning lunch; salad greens were used by another group who ate their lunches at school. Some children, in the habit of going home for lunch, brought sandwiches and stayed at school to eat greens with their other classmates! A goal feasible to attain at this level is for children to learn to eat a variety of foods from each group. Some children will have a greater problem than others. Progress charts, campaigns, and competitive games are justified when the goal is the formation of good habits.

Children at the intermediate level can be guided into evaluating their own progress in nutrition practices. If each child, at the beginning of school records the amounts of foods eaten daily, and the teacher or a committee of the children saves the records, a similar record of amounts at the end of school can serve as a check against the original one. In order for information to be more reliable, the purposes for which the lists are requested should not be explained in advance. After the final record is turned in, the children can help plan ways in which the reports may be used in checking on both individual and group progress. The children can quickly see how their intake compares with the general standards set up for good food selection by placing a check in the appropriate Basic Seven Food Group for each serving of various foods shown on their records. See chart on page 54. If the comparison of their intake with the standard shows that more of the children are eating green and yellow vegetables, whole grain cereals, and milk than they were in the beginning, their pride in accomplishment will lend interest and enthusiasm for continued projects in nutrition.

C. For Upper Grades

Is it too much to expect that by the time children reach upper elementary level they have learned to choose fairly well-balanced diets and have also developed the habit of practicing the use of this knowledge insofar as adequate foods are available? If they have not reached these goals satisfactorily, further projects and activities similar to those suggested for the two lower levels can be equally as effective in the upper elementary grades. If we can assume that children know how to make

wise selections, and further, that they **practice** wise choices when possible, our next problem is to teach them how to provide adequate foods.

1. HELPING CHILDREN ASSUME RESPONSIBILITY FOR GOOD NUTRITION OF THE FAMILY.

The following suggestions may be helpful to the teacher of older students:

Help pupils take up the planning of family meals as a class project. Use Basic Seven Food Groups as a guide. (See Appendix, Section II.) Point up the use of foods produced locally and in season.

Guide the children in planning adequate lunches to be brought to school. Remember that the adequacy of a single meal is determined by comparing it with other foods to be eaten that day. Help them plan for, and use, small jars for carrying sandwich fillings and other soft foods.

Experiment with ways of keeping food palatable. For example, have the children wrap a piece of bread in ordinary paper, another piece in oiled paper, and examine them the next day. Have them decide which kind of paper is more desirable to use and why.

Interest children in determining the cleanliness of lunch containers they ordinarily use.

As a class or school project, plan menus for the school lunchroom. Consider the foods available in school garden or in storage that have been preserved for the school lunchroom. Survey the general types of foods eaten at breakfast and supper by the school children as a basis for planning adequate noon meals.

Have every child to accept the responsibility of teaching younger brothers and sisters to practice good food habits and other health habits which influence nutrition. Encourage them to exchange experiences about the success of their efforts.

Soups offer good opportunity for using several vegetables at one time. At the same time a method is illustrated for use of left-overs. Cream soups, suggested for increasing milk consumption, combine the use of both milk and vegetables. Encourage children to request mothers to serve at home vegetables which they have learned to eat at school. Guide them into asking the lunchroom manager to serve them at school. Investigate the possibility of planting some of these vegetables in home gardens, or in the school garden—if there is one. Have the children write news items about their activities for the school paper or the hall bulletin board, or in other ways let the rest of the school know about the work.

2. TEACHING CHILDREN WAYS OF EXTENDING FAMILY INCOME THROUGH BETTER PRODUCTION AND CONSUMPTION.

Real life problems in the production and consumption of food offer the finest incentive for practical use of arithmetic, for social development, and for promoting a feeling of purpose of education. Following are suggestions to aid the teacher in developing practical situations and problems:

Send children to food stores to find out the cost of foods. This requires planning to be successful. Lead children into discussing courtesies to be practiced. To avoid repetition in securing data, let committees be responsible for securing information concerning common foods from each of the Basic Seven Groups. Avoid repetition in regard to visiting stores. Let groups decide in advance which store or stores they will visit. In a small community it is important that all stores be visited so that none will feel slighted. As in every field trip, the teacher needs to make satisfactory arrangements with the managers in advance. They will often express a choice in the time of day and the day of the week, or they may even prefer not to be bothered. In rural communities if no stores are accessible, children can find out the cost of most foods by asking their parents and, to some extent, by consulting mail order catalogs and local papers.

Lead children to find out the extent of food grown for home use. How much does the use of this food reduce the grocery bill for the family? To develop understandings applicable to various situations represented in most any class, the children will have to be helped to use a variety of problems. For example:

How much does it cost to feed adequately a family the size of yours in our community for one month? Children can be led to use real figures experienced by their own families if they are assured that their work is on an individual basis and that they need not give out personal information to which they or their parents object. What is the money value of home-grown food used by your family for one month? The parents can help supply this information if necessary. If a family produces their own milk and they use about a gallon every day it will not be difficult for the child to calculate the retail cost of the monthly supply. On the other hand, if the mother opens cans of home-canned products the child will not know how to estimate the allowance for a month, but conversation with the mother can give a fairly accurate estimate.

Insofar as possible, have children calculate the actual cost of home-produced foods. Perhaps some parents keep accurate records of costs. Personnel in Farm Security Offices can assist in supplying such figures for general use. Regardless of the extent to which problems are used concerning the difference in cost in buying all foods at retail prices and in raising part of the food at home, the conclusions drawn are

likely to be that it costs less to feed the family when some of the food is raised at home.

Another definite incentive for encouraging home production is the world's need for more food. With parts of the world hungry, it becomes a moral obligation to produce more food when possible. Foods raised in home gardens may never reach hungry children on the other side of the world. Children can be guided, however, into understanding that when their families use home-produced foods, they need to buy less, and that **the foods they did not buy** may be routed into channels of wide distribution. When many foods are added together, a sizable shipment results.

Practical projects that can result from stimulation in respect to home production are: school gardens, home victory gardens, raising of plants for sale, service (either volunteer or paid) for garden work, the raising of rabbits, pigs, goats, cows, fish, chickens, pigeons, and other fowls.

Information can be secured from Extension Service, Farm Security, and other agencies on food production. **Rabbit Raising for Meat**, Bulletin 128, issued free of cost by Extension Service, A. and M. College, College Station, Texas, explains the home production of a type of food that can be raised the year round. Little space and inexpensive equipment are required to produce rabbits; consequently, rabbit production is practical for many families.

Attempt only one or two projects at a time, and develop them in all possibilities rather than undertake so many that nothing permanent is accomplished.

For developing better consumption practices, the following suggestions are offered:

Lead children to learn the care of food in the home. Observe changes in foods when exposed to: air—bananas or peaches; dust—sugar or flour; water—grains; cold—milk; extremes in humidity—bread; over-cooking—green vegetables. Formulate standards for care of food in the home.

Have children learn to reduce food costs by substituting foods from the same group which cost less. Tomato juice is usually cheaper than orange juice, yet their food values are similar. Home-grown tomato juice in larger portions can be substituted for orange juice.

Have children weigh a dozen eggs and investigate the cost per dozen with the cost of an equal weight of steak. Help them to decide which is more economical to buy at this season.

Let the class form committees to investigate various forms in which milk may be purchased in your community, such as whole,

raw, pasteurized; evaporated, condensed, sour. How do food value, flavor, cost, and safety differ in each case? Be sure to have children realize the dangers of infection from contaminated milk.

Encourage preservation of all surplus foods.

Have the class investigate the information given on labels. Can you judge the quality of the contents by statements on the label? Can you estimate the number of servings? Can you evaluate the food value of the contents? What else would you like for labels to tell you? Such information as quality and amount of contents expressed in terms of common use would be helpful and are sometimes given on labels. For example, it is more useful for the average consumer to read that a can contains two cups than to see the amount expressed only in ounces. Suggested uses and ways of preparing the foods are also helpful.

Lead pupils to compare costs in buying foods in different quantities, for example 1 pound of flour, 6 pounds, 12 pounds, 24 pounds, 48 pounds. Discuss storage space available in the home and the keeping quality of products.

Have children investigate the reasons why school lunch meals can be served at a low cost, and note the economy of quantity buying.

Children may be given opportunities to raise part of the food, assist in preparation, serving, and preservation at school lunchroom as a means of reducing the cost of the meals. Calculations showing the cost of their services is often an inducement for continued activity.

Evaluation of the nutrition program at the upper elementary level is partly an evaluation of results from activities in preceding grades. Much should be expected because, for many children, it means their last chance at nutrition education in everyday life. Some will drop out of school at this point. Others will enter an academic, rather than practical, regime in high school. The fortunate few who, in high school, find opportunity to continue a practical program of health development through nutrition education will be better prepared for their contribution to home and community living.

Children can be helped to plan their own questions for evaluating their work. The following are examples: What improvements have we made in our own choices of food this year? What have we done to help our families be better fed? For instance, have we worked in our garden? Helped plan school and home meals? Helped our younger brothers and sisters learn better health habits? Have we improved our own health and

health habits? How much have we been able, through our efforts, to reduce the cost of our family's food?

D. For Parent Groups

Parents, like children, need to understand the part food plays in health. They should be made aware of the evidence of malnutrition which point up the need for more food production, better consumption, and wiser nutrition habits. When it is possible to have group meetings, plan carefully to present material in a manner that can be understood by the average parent in the community. A wise practice is not to over-estimate the comprehension level of the group. Technical talk should be avoided. Information should be presented through the use of illustrations, such as pictures, slides, films, charts, and posters. One should not confuse lack of education with lack of intelligence. A doctor once explained the need for a particular vitamin concentrate to a doubting elderly patient, who had allowed himself to become run down from lack of this particular food element, by telling him that one injection of the concentrate would provide as much nourishment as a tubful of chopped food which he could neither hold nor afford to take the time to eat. The patient submitted to the treatment. Suppose he had been told that an injection of the vitamin supplied him with fifty thousand international units of thiamine. The last statement would have been technically correct, but the actual explanation given by the doctor, inadequate though it might have been for some, gained the respect and confidence of the patient to the point of acceptance. Furthermore, the relief and improvement of the patient convinced him that food makes a difference in health and that it behooves one to eat properly day by day and keep healthy so that it will not be necessary to rely upon emergency treatment for adequate nourishment.

When specific group meetings are not practical, the teacher should investigate the possibilities of working through clubs that are already organized for regular meetings, and inject some nutrition education into the club programs. Different clubs might be induced to sponsor different community projects. For example, the P. T. A. would be the logical group to back the school-lunch program; a mother's club might decide

to push the mid-morning milk drinking program; a home demonstration club could sponsor food preservation; the Chamber of Commerce might promote more home gardens and even the use of vacant lots for community gardens; service clubs often lend financial assistance, as well as moral support, to any project that is for the good of the community. Church organizations may assist in welfare work if it is needed. Government agencies represented in the community are always available for various types of assistance. The county agent is active in promoting both plant and animal production and care, soil conservation people help promote the best use of the land, and farm security lends financial backing and counsel in family planning. There may be many other services available; use should be made of them.

A community council made up of representatives from all agencies concerned with local nutrition forms an excellent clearing house and planning board for an over-all program. Such an organization makes it possible to do long-time planning, avoid duplication of effort and activity, reach more groups of people, achieve greater results in less time than spurts of activity can ever accomplish. The "spurts," however, should not be ignored, as often they are the means of developing sufficient interest to stimulate various groups to organize and pool efforts and resources.

It is not intended to imply that in all instances there will be opportunity to teach parents in an actual organized class situation. Parent-learning is often incidental without apparent consciousness on the part of either the teacher or the parent. The developing child has some influence on other members of the family, but unless this is planned for and some check made, the results are haphazard and scattered. Most parents are interested in their children's activities. It is well to capitalize on that interest as a means of helping the parents, along with their children, grow in understanding of nutrition. Unless the home cooperates in providing opportunities for its children to be well-nourished, the habits initiated as the result of school activities cannot develop normally.

Teachers often feel that parents are not interested in cooperating with the school in projects that are for the good of

the children, when all too often the parents have not had opportunity to learn very much about what goes on in school. Children do not make the best evangelists, since they present material from the point of view of a child, whereas the teachers and parents need to share a broader conception or background than children are likely to grasp. A technique used extensively in Southside community in securing cooperation of the parents has had such good results that it bears consideration. This is the use of **mimeographed or duplicated reports sent out either regularly, or as occasion demands, to acquaint parents with school activities.** A child is more likely to remember to give the notice to his parents if it is individual in its nature than if it is general. Of course, sending a notice home does not guarantee that it will be read. Again, if the child is required to return the paper with the parent's signature it will be read by more parents than if no check is going to be made. Care should be taken in wording the message. A safe standard is to put it into words that the child can understand in order that he may read it aloud to a busy mother or father.

The following are two such notices as were described in the last paragraph. The first is a copy of a mimeographed notice that each child was asked to take home to his parents.

Dear Parents:

An important aim of education is to help each boy and girl and his family to have better health. Southside School is beginning a definite health-improvement campaign. We need the support and cooperation of every person in the community. We know that you will agree with us that health is of great importance. Southside Parent-Teacher Association has agreed to lend encouragement and effort to this program.

We are making simple health examinations at school which will reveal indications or symptoms of health conditions. You will be sent the results of these tests concerning your children.

Principal, Southside Elementary School

The second represents a mimeographed form letter with blanks to be filled in by each child. Note the request for the letter to be signed by the parent and returned to the room teacher. As you can see, the data reported on in this letter includes some health conditions other than those concerned di-

rectly with nutrition. This is an actual reproduction of the form as it was used with no revision to delete material not nutritional in nature.

Dear Parents:

At school we are trying to be healthy boys and girls. Since so much of our health depends on our life at home, we need your help. We have been examined at school and this is what I found out about myself:

I weigh _____ lbs.; I am _____ inches tall. The average weight for other boys or girls my same age and weight is _____ pounds.

I have _____ holes in my teeth which need to be fixed by a dentist. Teeth with holes in them cause poor health.

My skin is healthy. (Yes) (No)

There are blisters on my hands. (Yes) (No)

There are blisters on my feet. (Yes) (No)

My head has dandruff. (Yes) (No)

My head has lice. (Yes) (No)

It is not fair for me to come to school with blisters on my hands or feet or with dandruff or lice on my head because these will spread to the other boys and girls who do not have them.

The teachers at school want to teach us how to be healthy. They are asking each parent to help. This letter is to ask you if you can and will help. Please answer these questions below and write your name so that I can bring this paper back to my teacher.

Name of student _____

Will you take me to a dentist to fix my teeth? (Yes) (No)

I will learn at school how to get dandruff and lice off my head. I will learn how to get blisters off my hands and feet. I will bring paper home telling how to do these things. Will you help me and the other members of my family to get the dandruff off our heads? (Yes) (No)

to get the lice off our heads? (Yes) (No)

to get the blisters off our hands and feet? (Yes) (No)

Please sign your name _____

One must realize that at the same time parents are becoming acquainted with what the nutrition conditions are, they

will need assistance in interpreting the significance of the facts. The degree to which this will be needed will vary with the individual community. In the case of Southside community, referred to in the notices above, the parents themselves took the initiative in asking for regularly scheduled group meetings to learn ways to improve the health conditions of their families. A committee of parents helped the teachers plan a series of meetings. The remainder of this chapter will be more or less a report of these meetings.

At the first meeting outcomes of the health examinations were presented. Although each child took his own record home, a summary of the conditions reported was compiled and this information used to impress parents in the group meeting with the seriousness of the conditions of the 222 children who were examined.

127 had teeth with cavities in them.

22 were 10 or more pounds below average weight.

38 were from 5 to 9 pounds below average weight.

18 were 3 or 4 pounds below average weight.

A few had lice, itch, athlete's foot, and dandruff.

In the discussion which followed, possible ways were considered to attack the health problem in this community. Health conditions due to hereditary influences were acknowledged, yet they did not offer an encouraging point of attack. The part food plays in health seemed to stimulate more interest so this became the basis for group study.

In the development of the subject, "The Part Food Plays in Health," the main emphasis was put on impressing everyone present with the fact that food makes a difference in our growth, functions, and general well-being. In developing this fact, nutrition charts showing effects of various diets on laboratory animals were displayed, explained, and discussed. Lantern slides were also used in a similar manner. These were very convincing that food does make a difference. The effect on the young when the mother's diet is deficient was particularly impressive. Pictures showing the skeletons of twin brother rats, one having been on a good diet and the other on a restricted diet, helped the parents to see why some children have poor bone development evidenced by winged shoulders, swayed

backs, bowed legs, flat chests, etc. Also shown were some slides of real children, some of whom were handicapped by inadequate food. One case showed a poorly developed child on a poor diet, then the same child later after having had milk added to the diet. The results were impressive.

It was at this stage in the series of meetings with parents that they were informed of the rat-feeding experiment which sixth grade boys and girls were carrying out as one of their experiments to determine the effect of various diets on growth.

In setting up the standards for good nutrition, the Basic Seven Food Groups as described by the War Food Administration were used. See Appendix, Section II. This is the accepted standard publicized through all channels by the various government agencies interested in nutrition. W. F. A. offers splendid illustrative material which is distributed without cost. It is simple enough to be understood by any lay person. Posters, charts, leaflets, and films were used in showing Southside parents how to choose foods.

After establishing the standard for food selection, the next step was to analyze the diets of the people in this community. Accurate information was secured from 53 fifth-and sixth-grade students. They kept a record of the foods they ate for one day. These foods were classified into the seven food groups mentioned above. The results are shown in the following chart. Each x represents ten girls who had a serving of the food as it is grouped.

TABLE I

Classification of the Daily Food Intake of
53 Fifth-and Sixth-grade Pupils

Southside School
San Marcos, Texas
Dec., 1944

Group 1 Green & Yellow Vegetables	Group 2 Oranges Tomatoes Grape- fruit	Group 3 Potatoes Other fruits & vegetables	Group 4 Milk & Milk Products	Group 5 Meat Poultry Fish Eggs	Group 6 Bread Flour Cereals	Group 7 Butter Fortified Margarine
xxxxxx xx	xxxxxx xxx	xxxxxx xxxxxx	xxxxxx xxxxxx xxxxxx	xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xx	xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx	xxxxxx xxxxxx x

A glance at the results reveals the weak spots in food intake. Naturally this is not data supported by scientific evidence but it does show, in a convincing manner, that the trend in the community is to eat too few fruits and vegetables, milk, and milk products, and butter or fortified margarine. This information was charted on a big Basic Seven food wheel and shown to the parents. They were quick to ask how they might make their meals more nearly conform to the standard. They co-operated wholeheartedly in supporting a mid-morning milk drinking program throughout the entire elementary school. Over 90 percent of the children began drinking milk, particularly after the use of straws was introduced.

Practice in building sample or pattern meals was next undertaken. Two long tables were arranged across the front of the room. On these a wide variety of actual foods was arranged into the Basic Seven Food Groups. Foods were borrowed from the school lunchroom and grocery stores, and some were bought. Those bought were used in the school lunchroom the next day. The display of foods was arranged by the fifth- and sixth-grade girls who were also studying how to make good family food selections .

The increased use of vegetables presented the most difficult problem. The parents admitted that they did not like them; neither did the children. Information from the school lunchroom soon disproved the latter part of the statement. The children were eating vegetables every day and not objecting to them. *

Variety in preparation was demonstrated in the meeting with the parents. Particularly the use of raw vegetables was stressed, except in feeding of infants. Demonstrations in the preparation of vegetables so as to retain their nutritive value were given at the same time that various recipes were tried.

A technique used to stimulate attendance at the meetings was to continue having the children take notices home telling something of interest about the last meeting and of the meeting to follow. The names of the ones attending were sometimes included. If a film was to be shown, it was always mentioned. This was a definite attraction. It might also be stated that many school children came with their parents to these meetings. Occasionally a whole family would be present. There were always more men present than women, revealing the patriarchal type of family prevailing in this particular community.

It is doubtful that a program developed in any one locality can be reproduced in another without adaptation. If, however, the program, or any part of it, developed at Southside School and community does happen to fit the needs in your locality, by all means use it, adapt it, improve it, and good luck!

Chapter III

CHILDREN'S LUNCH AS A SOUTHSIDE SCHOOL- COMMUNITY PROPECT

Throughout this booklet in pointing up ways for making nutrition education an integral part of the daily school program, frequent suggestions have been given for children's participation in lunchroom activities. School feeding of whatever type practiced offers the best possible opportunity for teaching fundamental nutrition practices. It provides ways of introducing many other phases of the curriculum into activity projects. This stimulates broader interest in all school work, thus increasing child growth and development. Useful bulletins in planning school lunch activities are:

Making School Lunches Educational. Nutrition Education Series Pamphlet No. 2. Federal Security Agency, U. S. Office of Education. U. S. Government Printing Office, Washington, D. C. 1943.

Nutrition Education in the Elementary School. Nutrition Education Series, Pamphlet No. 1. Federal Security Agency, U. S. Office of Education. U. S. Government Printing Office, Washington, D. C. 1943.

A. The Requirements of a Suitable Lunch

The lunchroom activities most stimulating to Southside children at all levels were those directly connected with food. One cannot imagine, without experiencing or observing it, the change in attitude toward food served at the lunchroom that results when children themselves decide on the menus. By finding out which foods are commonly eaten for breakfast, supper, and between meals, children in the upper elementary school can be guided into planning noon meals that make each day's food more adequate. Also, at the same time, better choice of foods for the other meals can be planned by the children themselves. Use of the Basic Seven Food Groups or the Texas Food Standard both are simple enough to be understood by elementary children. In one class planning noon menus for the lunchroom, the teacher picked up the food record which follows. It is an actual record of food eaten for breakfast and supper by a fourth grade boy.

Breakfast	Noon	Supper
3 flour tortillas	-----	1 glass milk
fried beans	-----	fried beans
1 glass water	-----	

Without embarrassing the child, the teacher led the class to plan a noon meal that would make the total food intake more adequate. The children listed the foods in a form of the Basic Seven Food Groups as shown.

BASIC SEVEN FOOD GROUPS

1	2	3	4	5	6	7
			1 glass milk	2 servings fried beans	3 tortillas	

They then had an immediate guide for planning the noon meal. It was difficult to plan a noon meal that would furnish this child with adequate nutrition. Attention constantly had to be given to cost, availability, popularity, and ease of preparation of all lunchroom foods. A study of the food eaten under discussion showed clearly the need for more adequate breakfasts and suppers.

This record, although poor, was not the worst one turned in. One little fifth-grade fellow's record showed that he had eaten, in addition to the noon meal at the school lunchroom, two flour tortillas and a cup of coffee for breakfast, potatoes and three tortillas for supper, and **one pecan** between meals!

Many showed no food taken at all before noon, thus making it necessary to meet the day's food needs in two meals instead of three. Consideration of all poor records strengthened the respect for eating breakfast and for mid-morning milk-drinking. In fact, it was after these food-intake records were examined by the teachers that they recognized the need for a mid-morning milk-drinking program in addition to the noon meal which had been made available.

Consultation with dairymen in the community verified the impression which the teachers had that milk was scarce, with demands exceeding the supply. These men, however, agreed with the teachers that it was more important to supply children with milk than to deliver it to stores for general sale. Three different dairies cooperated and furnished the amount needed. Mimeographed notices to the parents indicating that it was possible to secure milk and soliciting their cooperation in the program brought encouraging response. In some rooms, 100

per cent of the parents expressed approval of the project and stated that their children would participate. War Food Administration subsidized the program at the rate of two cents per child per day. For two additional cents per day paid by each child, the cost of the milk was taken care of. The teachers urged the parents to send ten cents each Monday morning to pay the milk fee a week at a time. This reduced the record keeping. Children helped keep the records, report the number in their room drinking milk each day, go after the milk, serve it in their rooms, and return the empty bottles. Older boys in craft classes made fruit boxes convenient for use in dispatching the bottles of milk. Fruit boxes were made suitable for use as bottle-racks by boys in craft class who sawed openings in the ends of the boxes for handles. The milk from tested herds was delivered in bulk because the dairymen did not have sufficient helpers or equipment to bottle it. Older girls took turns in bottling the milk each morning and arranging it in the racks according to the number of bottles needed by each room. The lunchroom manager supervised this activity and trained the girls in the care needed in handling milk. After use, the bottles were rinsed, washed in warm soapy water, rinsed in clear water, then submerged in boiling water for three minutes, inverted to drain on a clean table surface covered with fresh cuptowels. The bottles were later stored in racks, covered, and carried to the table where the milk pouring was done. Children participated voluntarily in all of these extra activities that the milk-drinking program necessitated, thus eliminating the need for additional paid help.

School lunch menus may be planned first with one class, then another. Interest is maintained by publicizing the work of the various classes through announcements on the bulletin boards, in the school paper, the lunchroom, or home rooms. One school furnishes each home room with a mimeographed copy of the menus for the week. The room teacher posts each day's menu at a time. Discussion takes place concerning the foods on the menu, and, depending upon grade level, what foods do for us. A food that a class has been studying particularly sometimes occurs on the menu. Children are pleased and interested in recognizing this fact. In levels too low for planning a whole meal, children might submit suggestions for one phase of the menu to a class that is doing the planning for that week. For

example, if a primary room had taken milk apart and made cheese, they could request the menu planners to use cheese one day that week.

After practice in menu-making, groups might need to learn the preparation of certain foods. This might have been used as an incentive to stimulate interest in meal planning or it might be an outgrowth of meal planning. Unless the preparation of food is understood, carry-over of instruction into homes is retarded. Assistance in preparation is, in itself, one method of getting some children to eat foods they have not liked previously. A little boy who had persistently refused to eat carrots surprised the lunchroom supervisor one day by asking for a second helping of them. The supervisor questioned him about his sudden change in habit. In answer the pupil said, "Oh, my room planned the menus this week, and we used carrots this new way which we learned about in class."

In introducing a new food, or one that is served in a new way, having children participate in its preparation or plan for its use insures some acceptance and publicity, which may be sufficient to promote its common use by the entire group.

B. Producing Food at Home

Home production of food is a means of making more food available at a lower cost. Again we cite Extension Service as being a ready source of reliable bulletins on all types of gardening. The Extension Office in each county seat usually has a supply of bulletins on hand. If not, they can be promptly secured upon request to state headquarters at College Station, Texas. The county agent or the home demonstration agent also can answer such questions as, "What is the best variety of seeds to plant in this soil?" "When is the best planting season in this locality?" "How many pounds of seed should be planted for an expected yield of a thousand pounds of green beans?" "Can we expect this particular vegetable to mature so that it can be harvested by the time school is out?" "What insects are likely to infest our garden, and how may they be controlled?"

Sometimes patrons pool their resources in producing a community or school garden. They gather and can surpluses in individual homes and give either all or a percentage to the

lunchroom.

The school administration may sponsor school gardens. This can be a fine educational project. **Education for Victory**, the official bi-weekly publication of the U. S. Office of Education, presents in almost every issue articles on some phase of school gardening. An interesting account occurred in **The Texas Outlook**, September, 1943, on school gardening at Denton, Texas.

Other types of food production may be promoted. There is no sounder way to guide young people into respect for agriculture as a way of life than to help them experience the joy of working with growing plants and animals whenever this is possible. If space is scarce, devise ways of making use of every foot of ground; if soil is poor, teach practical ways of enriching it; if soil is being eroded, teach ways of conserving it; if insects are destructive, teach ways of combating them. If the teacher wonders how she is going to have time to include such work, she need only to analyze the outcomes in terms of child development to see that she can use the time in no better way. Projects concerned with life problems furnish unparalleled incentive for developing fundamental tools of learning, recognized as reading, writing, and arithmetic. Projects in food production tie in with community life; parents become interested; assistance is forthcoming.

Food production usually calls for food preservation. Circumstances influence both of these projects. In some communities federal assistance is available through financing and supervising canning centers. In others, the school sponsors community canning for the lunchroom. Clubs often assume this responsibility.

C. Conserving Food and Preventing Waste

Food scraps from the lunchroom should be utilized for animal feeding. If the amount is not large, persons can be found who will remove it to feed chickens or pigs. In larger lunchrooms scraps usually are of sufficient quantity to be sold or given to someone to raise chickens or pigs on shares for the lunchroom. Boys in schools are often interested in cooperating in the use of food scraps. Social studies and science classes can make this one of their school or home projects.

Food conservation and prevention of undue waste are matters for constant consideration. Food conservation practices developed at school can certainly be carried over into home practice. An effective way to impress children with food waste is to display the pan or pail of scraps from plate scrapings left the meal before. Different classes, for practice in writing and art, can make appropriate posters or placards to explain facts. The student council or home-room groups can initiate an all-school campaign against food waste in school and community. A science or arithmetic class might weigh the amount of scrapings before, during, and after a campaign on waste. Large bar graphs could be made to show the results of the campaign.

D. Making School Lunch Time Educational

All grade levels can participate in making the lunchroom attractive. Recognition of contributions should be made by posting the names of individuals and groups. Room committees should cooperate in bringing and arranging flowers and caring for them for a definite length of time. Displays or exhibits of various forms of art work are of interest. Murals make good wall decorations. These should all be changed often enough to stimulate interest. Posters promoting any phase of good nutrition are always in order. Older groups might like to work with rearrangement of furnishings for greater convenience. If re-decorating is in order, let children share in planning color combinations, selecting curtains, and other activities. Older boys and girls can assist in or do the decorating under some circumstances. This experience will give them ideas for home improvement. Parents might be brought into the planning groups if the scope of the problem warrants it. Their support and assistance are needed in any undertaking of importance.

Acceptable eating practices and table courtesies have an indirect, but important, bearing on good nutrition. Children should be guided into the practice of these. Opportunities should be provided for children to wash and dry their hands carefully before eating. There is little use for children to read in health books that they must wash their hands before eating unless they can wash their hands, and, furthermore, are directed into the practice year after year until it becomes a fixed habit. A child is not ready for lunch until his hands are clean.

In some schools, older girls act as hostesses at tables where primary children sit. In other instances, children rotate in assuming host and hostess duties. This requires discussion and training in home room situations, then careful supervision by teacher or older girls. Interesting table conversation, the practice of remaining in place until all at the table have finished, and the quieting presence of an older person in their midst, tend to slow children in their eating. Table conversation should be planned and guided, otherwise children follow their natural inclination to get through in a hurry and run out to play.

Proper conduct should be expected in the lunchroom the same as anywhere else, and arrangements conducive to good behavior should be made. Children dislike being detained unnecessarily. Shoving and crashing lines are evidence of this. Better planning for serving and scheduling groups prevent lines from moving slowly. Table equipment should be as simple as possible to facilitate its use and care. Social poise comes from feeling secure in one's personal habits. It is the obligation of every school to provide opportunities for children to learn acceptable conduct.

The school lunchroom offers a challenge to all teachers to make the most of its educational opportunities in preparing children to function happily, healthfully, and successfully in one of the social situations which occur most frequently in life—the morning, noon, and evening meals.

Chapter IV

EVALUATION OF THE PROGRAM

Measure of progress should correspond with the nature of the investigation and problems set up at the beginning of the program. For example, if school children were examined, results recorded, and data analyzed for evidences of nutritional deficiencies, this same procedure, at later intervals, provides a basis for comparison. If surveys of eating habits were made and, as a result, certain practices were revealed, repetition of the same survey furnishes data for recognizing change in practices. Suppose the extent of home gardening was measured at the beginning of the year and it was found that 10 per cent of the families in the community had gardens. A similar survey a year later will reveal a basis for comparison.

There may be evidences of progress that are not adapted to comparisons because no record of them exists. Incidental remarks come under this category. Opinions, although often entirely subjective, are valuable because they represent attitudes, and attitudes are very influential in determining progress.

Evidences of improved nutrition may be obtained through investigation of the following:

- Physical condition of the children
- Effectiveness of school-lunch program
- Number of home gardens
- Extent of food production
- Extent of food preservation
- Frequency of illnesses
- Types of lunches brought to school
- Food consumption reports from grocers
- Dietary studies
- Food waste
- Attendance at school
- Disciplinary problems
- Eating habits
- Number of people actively engaged in nutrition program

In every way possible, children should be helped to take part in gathering information for measuring progress, in recording it for analysis, and in interpreting results. These activities give added opportunities for children to participate in

nutrition education. Their enthusiasm spreads with the establishment of each evidence of improvement. Everyone who has shared in the development of the nutrition program should have a part in evaluating it and in making plans for continuing the program with greater assurance of its success.

APPENDIX

Section I

Height-Weight-Age Tables*

WEIGHT—HEIGHT—AGE TABLE FOR BOYS OF SCHOOL AGE¹

Average weight for height, pounds.	Height, inches.	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	19 years.	Height, inches.
34	38	34	34*														38
35	39	35	35														39
36	40	36*	36*														40
38	41	38	38	38*													41
39	42	39	39	39*	39*												42
41	43	41	41	41*	41*												43
44	44	44	44	44	44*												44
46	45	46	46	46	46*	46*											45
48	46	47*	48	48	48	48*											46
50	47	49*	50	50	50	50*	50*										47
53	48		52	53	53	53	53*	55*									48
55	49		55	55	55	55	55	55*									49
58	50		57*	58	58	58	58	58*	58*								50
61	51			63	61	61	61	61	61*	64*							51
64	52			64	64	64	64	64	64	64*							52
68	53			66*	67	67	67	67	68	68*	72*						53
71	54				70	70	70	70	71	71							54
74	55				72*	72	73	73	74	74	74*	80*					55
78	56				75*	76	77	77	77	78	78	80*					56
82	57					79*	80	81	81	82	83	83*					57
85	58					83*	84	84	85	85	86	87	90				58
89	59						87	88	89	89	90	90					59

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NUTRITION AND PHYSICAL FITNESS

WEIGHT—HEIGHT—AGE TABLE FOR GIRLS OF SCHOOL AGE¹

Height, inches.	Average weight for height, pounds.	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	Height, inches.
38	33	33	33													38
39	34	34	34													39
40	36	36	36	36*												40
41	37	37	37	37*												41
42	39	39	39	39*												42
43	41	41	41	41	41*											43
44	42	42	42	42	42*											44
45	45	45	45	45	45	45*										45
46	47	47*	47	47	48	48*										46
47	50	49*	50	50	50	50	50*	53*								47
48	52	52	52	52	52	52	53*	56*								48
49	55	55	54	54	55	55	56									49
50	58		56*	56	57	58	59	61	62*							50
51	61		59	59	60	61	61	63	65							51
52	64			63*	64	64	65	65	67	71*						52
53	68			66*	67	67	68	68	69	73*						53
54	71				69	70	70	71	71							54
55	75				72*	74	74	74	75	77	78*					55
56	79				76	76	78*	78	79	81	83*					56
57	84				80*	80*	82	82	82	84	88	92*				57
58	89						84	86	86	88	93	96*	101*			58
59	95						87	87	90	92	96	100	103*	104		59

60	101								91*	95	95	97	101	105	108	108	109	111*	60
61	108									99	100	101	105	105	108	112	113	116	61
62	114									104*	105	106	109	113	115	117	118	118	62
63	118										110	110	112	116	117	119	120	120	63
64	121										114*	115	117	119	120	122	123	123	64
65	125										118*	120	121	122	123	125	126	126	65
66	129											124	124	125	128	129	130	130	66
67	133											128*	130	131	133	133	135	135	67
68	138											131*	133	135	136	138	138	138	68
69	142											131*	135	137*	138*	140*	142*	142*	69
70	144												136*	138*	140*	142*	144*	144*	70
71	145												138*	140*	142*	144*	154*	154*	71

Age, years.	6	7	8	9	10	11	12	13	14	15	16	17	18
Average height (inches)	43	45	47	49	50	52	54	57	59	60	61	61	61
Medium	45	47	50	52	54	56	58	60	62	63	64	64	64
Tall	47	50	53	55	57	59	62	64	66	66	67	67	67
Average annual gain (lbs.)	4	4	4	5	6	6	10	13	10	7	2	1	1
Medium	5	5	6	7	8	10	13	10	6	4	3	1	1
Tall	6	8	8	9	11	13	9	8	4	4	1	1	1

The figures represent weight in pounds; age, at nearest birthday; height at nearest inch; weight at nearest pound. Starred figures are estimated weights for children who are taller or shorter than usual for the age group. All unstarred figures represent actual averages.

Weight in ordinary clothing but without shoes, coats or sweaters.

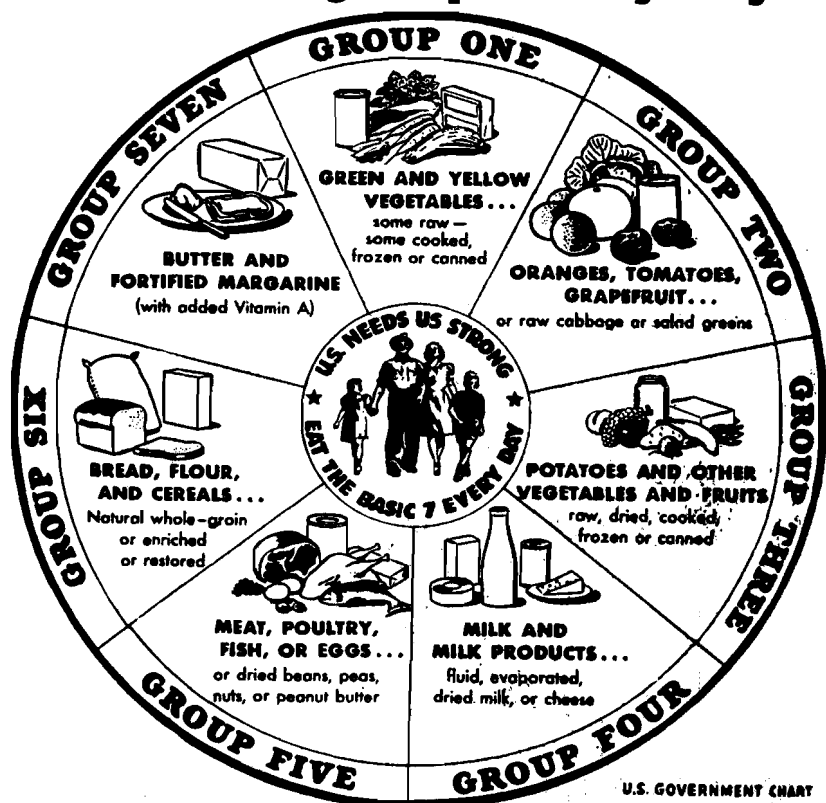
¹ Tables prepared by Bird T. Baldwin, Ph. D., Iowa Child Welfare Research Sta., State Univ. of Iowa, and Thos. D. Wood, M. D., Columbia University. Reprinted by courtesy of the Am. Child Health Association.

Section II

Standards for Selecting Foods for Health

In teaching children and adults how to select foods for health, it is well to consider foods as they are actually used by

For Health...eat some food from each group...every day!



**IN ADDITION TO THE BASIC 7...
EAT ANY OTHER FOODS YOU WANT**

families in the homes. Food is usually thought of in terms of meals instead of as individual items, such as bread, milk, or

beans. Food also may be thought of in terms of a market order or in terms of home production. Not single meals, but the total daily food should be the basis for planning and selecting foods to meet daily needs. A balanced diet for each day should be sought by the layman with consideration for such things as personal allergies, family and racial preferences, and availability of certain foods.

The most widely distributed standard for daily food selection is the Basic Seven grouping recommended by the War Food Administration of the United States Department of Agriculture.

A more detailed treatment of the same material follows, giving a wider variety of foods to choose from, suggestions for meal planning, and possible deficiency symptoms that may result when inadequate amounts of various foods are not present in the diet.

Group One

GREEN AND YELLOW VEGETABLES

(Raw, Cooked, Frozen, Canned, or Dried)

Serve one or more big helpings every day—some raw, some cooked. Green outer leaves contain more Vitamin A than inner bleached leaves. Keep vegetables covered in a cool place. Cook vegetables in as little water as possible, in a covered container. Cooking them too much destroys vitamins, color, texture, and flavor.

Asparagus, green	Endive, green
Beans, green	Escarole
Broccoli	Kale
Cabbage	Lettuce, leaf
Celery, green	Okra
Chard	Peas, green
Collards	Peppers, green
Spinach, and all other	Carrots
greens, including	Pumpkins
Salad greens and	Squash, yellow
Wild greens	Sweet potatoes
	Yams (also apricots and yellow peaches)

Some of the deficiency symptoms which may result from eating insufficient amounts of foods from Group One, are retarded growth, lowered resistance, poor adaptation of eyes to darkness, defective teeth, changes in skin and membranes, slow clotting time of blood,

soft bones, pallor, loss of weight, loss of appetite, persistent fatigue, digestive disturbances, crusty eyelids, and lesions at corners of the mouth.

Group Two

ORANGES, GRAPEFRUIT, TOMATOES OR RAW CABBAGE OR SALAD GREENS

Serve at least one of these every day. Keep all fruits in a cool, protected place. Wash them before using. Exposure to air destroys Vitamin C, which these foods contain.

(Fresh or Canned)

Grapefruit

Grapefruit juice

Kumquats

Lemons

Limes

Oranges

Orange juice

Tangerines

Tomatoes

Tomato juice

Cantaloupes (muskmelons)

Raspberries

Strawberries

(Raw or slightly cooked)

Cabbage

Brussels sprouts

Cauliflower

Kohlrabi

Rutabagas

If foods in Group Two are hard to get, use more raw ones from Groups One and Three.

The most important deficiency disease which might result from insufficient quantities of the foods in Group Two is scurvy, which is evidenced by sore gums, hemorrhages around bones, tendency to bruise easily, loose teeth, fragile bones, susceptibility to infection, and weakness.

Group Three

POTATOES AND OTHER VEGETABLES AND FRUITS

(Raw, Cooked, Frozen, Canned, or Dried)

Eat two or more servings daily of any of these.

Potatoes, white

Artichokes

Beets

Celery, white

Cucumbers

Eggplant

Leeks

Lettuce, head

Lima beans, fresh

Mushrooms

Cherries

Cranberries

Currants

Dates

Figs

Gooseberries

Grapes

Huckleberries

Loganberries

Mangoes

Group Three

POTATOES AND OTHER VEGETABLES AND FRUITS

(Continued)

Onions	Papayas
Parsnips	Peaches, white
Radishes	Pears
Salsify or oysterplant	Persimmons
Sauerkraut	Pineapples
Squash, white	Plums
Sweet Corn	Prunes
Turnips	Quinces
Apples	Raisins
Avacados	Rhubarb
Bananas	Watermelons
Blackberries	Youngberries
Blueberries	

Also, all vegetables and fruits not listed elsewhere.

Deficiency symptoms resulting from inadequate amounts of foods from Group Three are likely to be loss of weight, nervousness, poor digestion, and faulty elimination.

Group Four

MILK AND MILK PRODUCTS

Every child needs three-quarters to one quart of milk a day. Every adult needs a pint or more of milk a day. Use whole or skim milk, evaporated or buttermilk. Use milk to make soups, puddings, cakes, and breads. You may count this as part of the milk you need daily. Cheese is made of milk; use it in cooking; serve it on the table. One ounce of cheese may be taken in place of one glass of milk. Keep milk cool, clean, and covered. Keep cheese closely wrapped in a cool, dry place.

Whole milk	Dried milk solids
Skim milk	Dried whole milk
Buttermilk	Dried skim milk
Cultured milk	Cheese—all kinds,
Evaporated milk	including cottage
Condensed milk	cheese

Inadequate consumption of foods from Groups Four and Five might result in a number of the same deficiency symptoms. These are poor physical tone, slow mental reaction, inadequate lactation, stunted growth, premature aging, brittle bones, dental decay, nerve disorders, digestive disturbances, insomnia, and poor bone development.

Deficiency symptoms more peculiar to lack of foods in Group Four, are skin blemishes, slow clotting time of blood, soft bones, lowered resistance, changes in skin and membranes, and eyes unadapted to darkness.

Group Five**MEAT, POULTRY, FISH, EGGS;
DRIED BEANS, PEAS; NUTS OR PEANUT BUTTER**

Eat at least one serving of meat, poultry, or fish every day. Serve an egg a day, or at least three a week for each person. Most meals are planned with meat as the main dish. Serve different kinds of meat, fish, or poultry for variety. Occasionally use liver, kidney, heart, and such salt water fish as salmon, herring, and mackerel. Keep fresh or cooked meat and fish in a cold place. Cook meat slowly to prevent shrinkage. Broil or bake tender cuts; braise less tender cuts to make them tender and tasty. All grades of meat have high food value. Keep eggs cool. Use eggs cooked in many ways, in custards, puddings, sauces, and in baking. Cook eggs slowly; fast cooking toughens the whites.

(Fresh, Canned, or Cured)

Beef

Veal

Lamb

Mutton

Pork (except bacon and
fat back)Variety meats, such as
liver, heart, kidney,
brains, tongue,
sweetbreads, tripeLunch meats, such as
bologna

Rabbit

Chicken

Duck

Game

Goose

Guinea

Squab

Turkey

Fish and shellfish

Fresh-water

Salt-water

Eggs (fresh dried, or
frozen)

(Dried)

Black-eyed peas

All other edible peas

Great Northern beans

Kidney beans

Lima beans

Navy beans

Soybeans

Lentils

Other beans and peas

Soya flour and grits

Nuts of all kinds

Deficiency symptoms more peculiar to lack of foods in Group Five are anemia, characterized by pallor, dizziness, weakness, loss of weight; and pellagra, characterized by skin eruptions, discolored tongue, mental disorders, and melancholia.

Group Six**BREAD, FLOUR, AND CEREALS**

(Natural, whole-grain, enriched, or restored)

At least two servings of whole-grain products or enriched cereal products, including bread, should be eaten daily. Use enriched flour and bread or whole-grain bread or cereals, such as dark rye or whole

wheat bread, rolled oats, cracked wheat, whole-ground cornmeal. Keep cereals and bread in closed containers. Any dry bread, including biscuits, rolls, or cornbread, may be toasted, used in puddings or stuffings, or as bread crumbs.

Breads

Whole-wheat
Enriched white
Rolls or biscuits made
with whole-wheat
Pumpernickel (whole-rye)
Oatmeal
Crackers, enriched-white,
whole-grain, soya

Flour

Enriched-white,
whole-wheat, other
whole-grain

Cornmeal

Whole-grain or enriched
Enriched grits
Cereals
Whole-wheat
Rolled oats
Brown rice
Other cereals, if whole-
grain or restored

Inadequate consumption of foods in Group Six might result in deficiency symptoms such as loss of weight, nerve disorders, irritability, headache, constipation, pellagra, muscular rigidity, brittle bones, and dental decay.

Group Seven

BUTTER, FORTIFIED MARGARINE, OTHER SPREADS, FATS

Serve one-half to one pound of fat every week for each person. Use butter, margarine fortified with Vitamin A, peanut butter, lard, shortening, salad oils, and cream. They all furnish concentrated energy.

The most outstanding deficiency symptoms from insufficient eating of foods in Group Seven might be constipation, skin blemishes, retarded growth, loss of weight, lowered resistance, particularly of the respiratory tract, in-coordination, and anatomical changes in the eyes.

Use sugar and other sweets in moderation, not enough to spoil the appetite for other foods. Count sweet desserts, molasses, syrups, honey, jellies, jams, sugar, and candies as sweets.

All kinds of food are good. It is the way they are put together into meals that makes the difference. As a general index to adequate meals, some foods from each of the seven groups should be used every day. Consideration can be given to the seven food groups when ordering meals away from home.

Another guide in meal planning, in buying food, or in planning for home production is the Texas Food Standard.¹⁰ This

standard is set up on a daily, weekly, and yearly basis, expressing the food needs of an adult.

The daily standard is set up from the point of view of food selection for one adult.

For a good diet, one needs every day:

Milk, 1 pint to 1 quart.

Children under 16 need from three-fourths of a quart to one quart.

Meat or Meat Substitute. 2 servings.

From the following: meat, poultry, fish, eggs, cheese, dried beans or peas, pecans, peanuts or peanut butter.

Vegetables, 3 servings.

One of these should be green or yellow. Potatoes, dried peas, or beans may be another.

Fruit, 2 servings.

One should be citrus fruit, or tomatoes, cantaloupe, watermelon or strawberries. Raw cabbage, raw cauliflower, or raw turnips can be substituted. An extra green vegetable or a second helping of green vegetable can take the place of the second serving of fruit.

Butter or Margarine

Some Sweets

Water, 6 to 8 glasses

The weekly standard, on the other hand, is set up from the point of view of food purchasing and market order, and for home production goals.

For a good diet, one needs every week:

Milk— $3\frac{1}{2}$ to 7 quarts

Eggs—7

Meat, Cheese—2 to 8 pounds

Fats—1 pound

Cooking fats— $\frac{1}{2}$ pound

Butter or Margarine— $\frac{1}{2}$ pound

Potatoes—4 pounds

Green and Yellow Vegetables—4 pounds

Other vegetables—4 pounds

Citrus fruits, tomatoes—2 to 4 pounds

Other fruits—4 pounds

Cereals and products— $1\frac{3}{4}$ to $4\frac{1}{2}$ pounds

Whole grain products— $\frac{1}{4}$ to $1\frac{1}{2}$ pounds
Other grain products— $1\frac{1}{2}$ to 3 pounds
Sweets— $1\frac{1}{2}$ pounds
Dried beans, peas and nuts—1-3 to $\frac{1}{2}$ pound

At all times in teaching meal planning and food selection, clearly stress that guides, such as the Basic Seven and the Texas Food Standard, do not necessarily meet the specific needs of any one individual or family. Individual food needs vary with inherited potentialities, endocrine balance, utilization and assimilation of food, body build and size, amount and degree of physical activity, sex, age, climate, season, and condition of health. Consideration of such variable factors is too detailed for treatment in a booklet of this type. Follow general nutrition principles rather than emphasize single food factors. General principles or standards for food selection have been set up by nutrition and health specialists. Their basis has been a wide sampling in nutrition research. The results represent the food needs for an adult of average size, in normal health, engaged in moderate activity, and living in the temperate zone.

The Texas Food Standard is considered to be quite liberal in amounts of food recommended. This may be partly explained by the fact that it has possibly been prepared primarily as a basis for home food production. This is definitely true of the weekly and yearly standard. Some loss is expected between amounts of food produced and amounts ultimately consumed. Production goals are naturally higher than consumption expectations. Losses due to adverse weather conditions, pests, incomplete harvesting, faulty storage, poor distribution and the like are inevitable. Such standards as these are also useful in working out a budget or plan for food preservation for the family.

Section III

References

A. References Quoted in the Booklet

1. Tinsley, Willa Vaughn. **Building Better School-Community Relations in Latin-American Communities.** San Marcos, Texas: Southwest Texas State Teachers College, 1944.
2. Bogert, L. J. **Nutrition and Physical Fitness**, third edition. Material adapted from **Food For Thought**. Nutrition Education Series, Pamphlet No. 22. Federal Security Agency, U. S. Office of Education, 1941.
3. **The Iowa Plan for Nutrition Education in Elementary Schools.** R. B. 12. Issued by the Department of Public Instruction.
4. Extension Service, Texas A. & M. College. Data assembled, analyzed, and interpreted by foods and nutrition specialists, College Station, Texas, 1945.
5. Roberts, Lydia J. **Nutrition Work with Children**, Chicago: University of Chicago Press, 1944.
6. **Pounds and Inches.** Metropolitan Life Insurance Co., New York.
7. Rose, M. S. **Teaching Nutrition to Boys and Girls.** Dallas, Texas: Macmillan Co., 1941.
8. Todhunter, E. W., and Andes, M. L. **Nutrition Experiments for Classroom Teaching: A Handbook for Teachers.** Pullman, Washington: State College of Washington, 1940.
9. **Good Food.** Pullman Washington: Washington State Nutrition Council, State College of Washington.
10. **Texas Food Standard.** Prepared by the Texas State Nutrition Council. Issued by Texas A. & M. College Extension Service, College Station, Texas.

B. Other References Used

The following references are of particular benefit to the teacher:

MacLeod, Grace, and Taylor, Clara Mae. **Rose's Foundations of Nutrition**, fourth edition. Dallas, Texas: Macmillan Co., 1944.

Food For Thought. Education and National Defense Series, Pamphlet No. 22, Federal Security Agency, U. S. Office of Education, 1941. Price, 15 cents.

School Lunch Management. Nutrition Education Series, Pamphlet

No. 3, Federal Security Agency, U. S. Office of Education, 1944. Price, 10 cents.

Making School Lunches Educational. Nutrition Education Series, Pamphlet No. 2, Federal Security Agency, U. S. Office of Education. Price, 15 cents.

Nutrition Education in the Elementary School. Nutrition Education Series, Pamphlet No. 1, Federal Security Agency, U. S. Office of Education, 1943. Price, 15 cents.

Pfaffman, Mary, and Stern, Frances. **How to Teach Nutrition to Children.** New York: M. Barrows and Co., Inc., 1944. Price, \$1.60.

C. Other Sources of Material

1. Some Government Sources of Free and Low-Cost Information on Nutrition.

Federal Security Agency, Washington, D. C.

U. S. Office of Education—Publishes educational materials. These include emphasis on the teaching of foods and nutrition, as well as general health education problems.

U. S. Public Health Service—Publishes technical and non-technical reports on specific nutritional problems.

U. S. Department of Agriculture, Washington, D. C.

Bureau of Home Economics—Publishes technical and non-technical research bulletins and studies: charts, leaflets, circulars, and pamphlets on the composition, cost, and preparation of foods; patterns of food consumption; general problems of malnutrition and undernourishment.

Consumers' Counsel Division—Publishes several categories of popular material for general distribution. "Consumers Guide," a bi-weekly, illustrated bulletin, contains articles and data to inform the consumer on price changes, cost of food commodities, and on intelligent and economical purchases. "Consumers' Market Service" is a mimeographed, semi-monthly, two-page release to acquaint organizations on prospective changes in the food supply situation.

"Consumer Notes" is a mimeographed clip-sheet, issued weekly, containing items on buying information and other subjects of interest to consumers. "Consumers' Bookshelf" is an annotated bibliography of free or low-cost publications on buying food or other commodities.

Extension Service—Publishes visual materials (motion pictures, posters, charts). Does not publish subject-matter materials.

War Food Administration—Publishes a wide variety of pamphlets, leaflets, posters, charts, and newsletters on nutrition particularly helpful in developing nutrition education.

U. S. Department of Labor, Washington, D. C.

Childrens Bureau—Publishes leaflets and pamphlets on foods and nutrition related to children.

2. Some Commercial Sources of Materials Suitable for Nutrition Teaching.

National Dairy Council, 111 North Canan Street, Chicago, Illinois.

Evaporated Milk Association, 307 North Michigan, Chicago, Illinois.

General Foods Corporation, 250 Park Avenue, New York, New York.

Cleanliness Institute, 381 Fourth Avenue, New York, New York.

National Live Stock and Meat Board, 407 South Dearborn, Chicago, Illinois.

Cereal Institute, Incorporated, 135 South LaSalle Street, Chicago, Illinois.

General Mills, Incorporated, Minneapolis, Minnesota.

3. Some Sources of Films on Nutrition.

Educators' Guide to Free Films. Educators' Progress Service, Randolph, Wisconsin. Price, \$3.00. Lists over 2,000 films.

New York University Film Library. Catalogue. 71 Washington Square South, New York, New York.

Approved Films on Food and Nutrition. Catalogue. New York City Food and Nutrition Program. 45 Lafayette Street, New York, New York.

Visual Instruction Bureau. Division of Extension, The University of Texas, Austin, Texas.

State Film Library. Manual and Descriptive Catalog. State Department of Education, Austin, Texas.

Y. M. C. A. Motion Picture Bureau. 1700 Patterson Avenue, Dallas, Texas.