

● Commonwealth of Kentucky ●

EDUCATIONAL BULLETIN

THE SCHOOL LUNCH PROGRAM

Miss Elizabeth Hanson
Periodical Librarian
University of Kentucky
Lexington, Ky.



Published by

DEPARTMENT OF EDUCATION

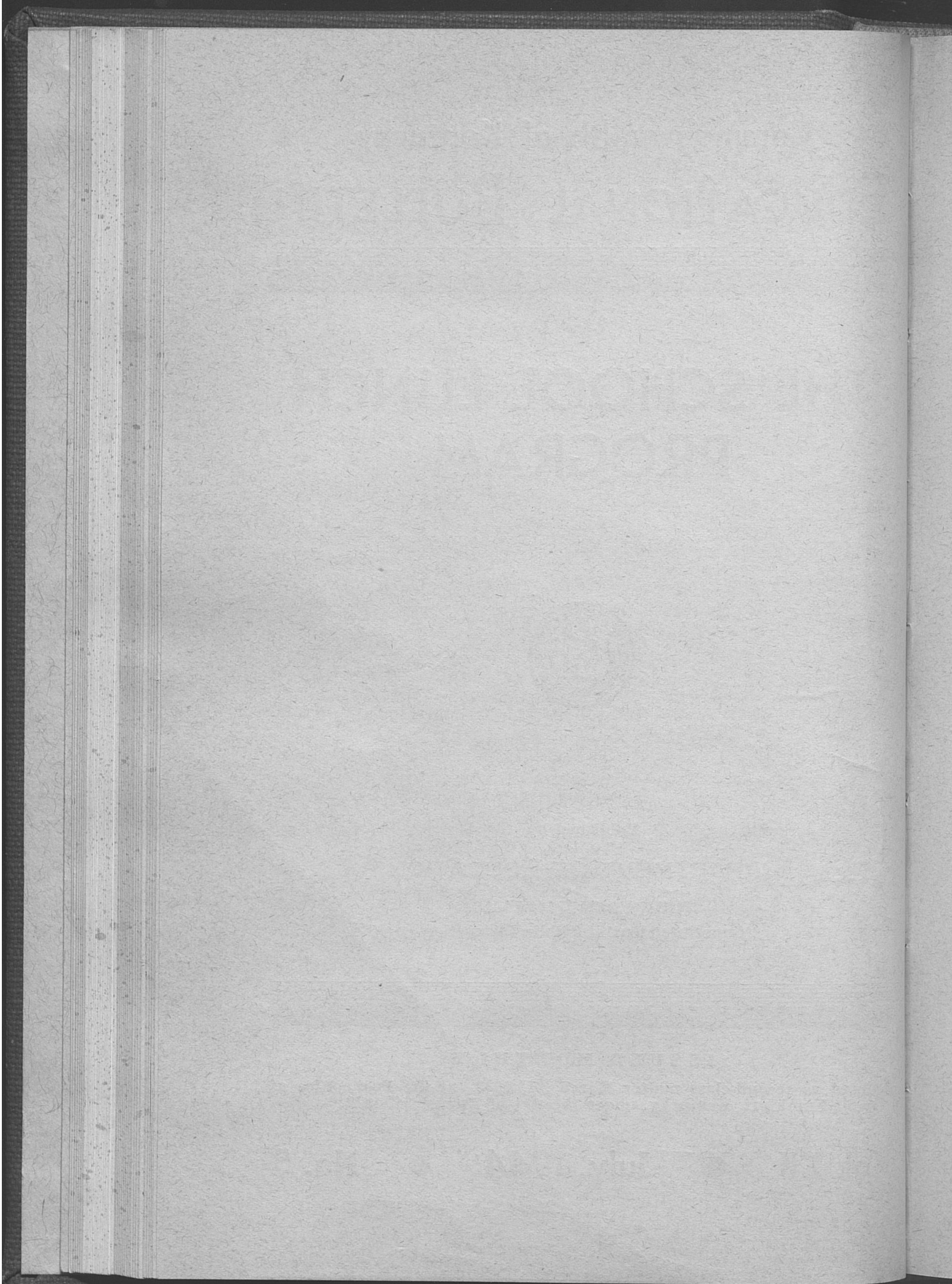
JOHN FRED WILLIAMS

Superintendent of Public Instruction

ISSUED MONTHLY

Entered as second-class matter March 21, 1933, at the Post office at Frankfort, Kentucky, under the Act of August 24, 1912.

Vol. XII ● July, 1944 ● No. 5



FOREWORD

This bulletin is a revision of *The School Lunch Program*, Commonwealth of Kentucky Educational Bulletin, Volume XI, No. 8, issued by the Department of Education and has been written for the purpose of giving help to superintendents, principals, lunch managers, and others working with the lunch program. Characteristics of a good school lunch program are set up in this bulletin and suggestions are given for ways of developing a lunch program that will meet these characteristics.

JOHN FRED WILLIAMS
Superintendent of Public Instruction

CONTENTS

	Page
A Good School Lunch Program	131
The School Lunch Provides Many Educational Experiences for the Pupil	132
School Administrators, Teachers, Parents, Pupils, and Others in the Community Understand the Values of the School Lunch Program	136
School Administrators, Teachers, Pupils, Parents, and Others Work Cooperatively on the School Lunch Program	137
The Meals Served are Well Balanced and Attractive	139
Sanitary Practices are Observed in the Storage, Preparation, and Serving of Food	142
The Physical Conditions are Satisfactory for the Preparation and Serving of Meals	146
Good Business Procedures are Used in Managing the School Lunch Program	149
A Few Suggested References	157

A GOOD SCHOOL LUNCH PROGRAM

Health is one of the major goals of education. Research has proven that there is a definite relation of food to health. A child's health is affected by the kind and amount of food which he eats. Recent studies of food practices in the United States reveal that about one-third of the families had poor diets and that in about one-half of the cases the poor diets were due to a lack of knowledge of the fundamentals of nutrition or failure to apply such knowledge to food selection, and were not due to an inability to afford suitable food.

A good school lunch program will contribute to the general health of children by developing good food habits and by providing foods which are needed for energy, for regulating the body processes, and for building and repairing body tissues. Now that many mothers are working away from home, children do not get the carefully planned and prepared meals even though there may be more money in the family for the purchase of nutritious food. In some families the increased cost of food and the rationing of food make it difficult for mothers of limited background to provide the nutritious meals that their children need. Even in the homes of families of higher income, many children are malnourished because of poor food habits.

Lunch programs in various types of schools differ greatly. Some characteristics of a good school lunch program in any school are:

1. The school lunch program provides many educational experiences for the pupils.
2. School administrators, teachers, parents, pupils, and others in the community understand the values of the school lunch program.
3. School administrators, teachers, pupils, parents, and others work cooperatively on the school lunch program.
4. The meals served are well balanced and attractive.
5. Sanitary practices are observed in the storage, preparation, and serving of food.
6. The physical conditions are satisfactory for the preparation and serving of meals.
7. Good business procedures are used in managing the school lunch program.

Some suggestions for ways of having a school lunch program which will have the above characteristics are given in this bulletin.

SECTION I. THE SCHOOL LUNCH PROGRAM PROVIDES MANY EDUCATIONAL EXPERIENCES FOR THE PUPILS

The school lunch should be a vital part of the total school program and should not be considered just a feeding program. Individuals learn to do by doing. Through the school program an excellent opportunity is provided for developing good food habits. Children may learn what foods should be eaten daily, what a good lunch is, and how to choose the right kind of lunch. They may also put this information into practice. Many food habits can be improved because of the opportunity of eating with other children and because of the guidance and direction of the teacher. The food habits developed at school will affect food habits in the home.

The school lunch program will also provide an opportunity for children to learn and practice good table manners. Eating together makes possible the practicing of table manners instead of just talking about them. Habits of cleanliness, such as washing hands before eating, proper handling of foods, and washing and cleaning dishes, may also be learned through the school lunch program.

All of the jobs in the operation of the lunch program have educational values if careful guidance is given to the pupils' work. Many one and two room schools may have a lunch program with the meal being prepared by the pupils. Teachers in these schools should plan definitely to make learning experiences of the different jobs connected with the planning, preparation, and serving of the lunch.

The classroom teacher has the major responsibility of making the lunch a part of the education of the child. Only to the extent that teachers recognize the school lunch as offering learning experiences for pupils, will the lunch program have real educational value for the children. In the classroom the teacher can guide the learning that will take place in the lunchroom. The way in which the classroom teacher uses the school lunch as a learning experience for the pupils depends upon the teacher's vision, the kind of class she is teaching, and the size of the school.

Suggestions for activities related to the school lunch program which may be carried out in various classes are listed below. No attempt has been made to make this a complete list or to check all the classes in which such activities may be used.

Some Activities Related to the School Lunch Program Which May be Carried on by Pupils in Various Classes:¹

Suggested Activities	Home Ec.	Agri-culture	Com-mercial	Health	Art	Mathe-matics	Social Science	Science	English	Library	Elemen-tary
1. Determine what one should eat each day	x	x		x				x			x
2. Plans menus to											
a. Meet requirements	x			x				x			x
b. Use limited amount of rationed foods	x										
3. Plans ways for overcoming food dislikes	x			x				x			x
4. Keep individual records of food eaten, to see if meeting requirements	x			x				x			x
5. Select recipes	x										
6. Change recipes to serve large numbers	x					x					x
7. Make market orders	x		x								x
8. Assist with buying	x		x								x
9. Compare methods of buying—cash, charge, wholesale and retail	x		x								x
10. Assist with preparation of food	x										
11. Investigate new ways of preparing commonly used foods	x										
12. Set the tables	x										x
13. Assist with serving of lunches	x										
14. Wash and sterilize dishes	x							x			
15. Help younger pupils develop good eating habits and good table manners	x			x							
16. Set up standards of good behavior in the lunch room	x			x			x		x		x
17. Study good table manners to use	x								x		x
18. Discuss ways of entertaining guests at mealtime	x								x		x
19. Plan what foods can be produced to supply food needs for family and lunch room	x	x									
20. Make food production plan for school lunch	x	x									
21. Make food preservation budget	x							x			
22. Help with planting and cultivating gardens		x						x			
23. Help gather and store foods grown		x									x
24. Plan storage facilities	x	x						x			
25. Build storage closets, cellars, pits, and window boxes for storing foods											
26. Help can food	x	x									
27. Find out the causes of food spoilage, and ways different foods may be preserved	x	x						x			
28. Keep records of:											
a. Recipes used	x		x								
b. Menus used	x		x								
c. Income and expenditure	x		x								
29. Figure cost of serving of various foods	x		x								
30. Figure cost of menus	x		x								
31. Figure cost of operating lunchroom	x		x								
32. Make budget for operating lunchroom	x		x								
33. Plan ways of eliminating waste	x					x					
34. Help keep the lunchroom clean	x			x			x		x		x
35. Study and evaluate methods used to wash dishes, exterminate pests, and store food	x			x				x			
36. Find out diseases that may											

¹ These activities should be carried on as class activities only as long as they have educational value for the pupil.

Suggested Activities	Home Ec.	Agri-culture	Com-mercial	Health	Art	Mathe-matics	Social Science	Science	English	Library	Elemen-tary
be spread through lunchrooms				X				X			
37. Plan ways of preventing these diseases				X				X			
38. Type and mimeograph recipes for pupils to take home			X								
39. Make curtains for serving area	X				X						
40. Bring flowers for tables and arrange them	X				X						X
41. Make pictures or murals for the lunchroom					X						
42. Select and hang pictures in lunchroom	X				X						X
43. Paint the walls		X			X						
44. Decorate the lunchroom for special occasions	X				X						X
45. Interpret the school lunch program to community	X	X	X	X	X	X	X	X	X	X	X
46. Secure information on lunch room problems	X			X				X	X	X	X
47. Conduct animal feeding experiments	X	X		X				X			X

The ways in which the activities listed above are used as educational or learning experiences for pupils will vary in different classrooms and in different schools. Some ways in which the suggested activity "plan ways of eliminating waste" may be made a learning experience are:

1. Find figures showing the amount of food wasted in the United States.
2. Collect and weigh the amount of food left on plates in lunchroom for several days.
3. Decide on ways of making everyone in school conscious of the amount of food that is wasted. (An effective way to make people conscious of the amount of food wasted on plates is to show the same weight or quantity in fresh food.)
4. Figure the amount of waste in terms of the number of meals that could have been provided for a family of five.
5. Estimate the cost of food wasted on plates.
6. Organize a clean plate campaign.
7. Determine other ways food is wasted in lunchroom besides being left on plates.
8. Study ways different kinds of foods should be stored.
9. Make a study of ways food wastes may be reduced in community.
10. Present information learned about food wastes by giving talks at school assembly programs, Parent-Teacher Association and civic club meetings.
11. Write articles about food wastes for the school paper or the local paper.

The following suggestions for using the activity "planning menus for the school lunch" as an educational experience for pupils

are designed primarily for home economics classes but many of the suggestions can be used in other classes:

1. Determine the foods pupils usually eat for breakfast and supper. Check these foods against those foods which are needed daily to see what foods should be served at school.
2. Study planned lunch menus to see if they supply foods needed to be served at school.
3. Plan lunch menus that will supply the foods needed.
4. Study different menus to determine other characteristics of a well-planned menu.
5. Figure cost of serving certain food dishes.
6. Try out ways of preparing low cost foods in different ways.
7. Make a list of low cost food dishes.
8. Plan menus that are well balanced and attractive, which may be served for the prevailing charge for meals, and which may be prepared with equipment and labor available in the school.
9. Keep record of menus especially liked by pupils.
10. Send copies of menus home to parents with a list of the other foods needed each day to supply the "Basic 7."
11. Rotate the responsibility of planning menus for a week's period among groups of pupils in class after the class has had an opportunity to learn to plan good menus for the school lunch. This may be done throughout the entire year by the different groups even though other units of work are being studied.

A description of how one teacher in a Kentucky rural school used the school lunch as learning experiences for her pupils follows:

At the beginning of the school year the pupils learned the part that food contributes to health, the foods needed for the day, and what is needed for lunch. The pupils then planned what they could do about lunch at school, which was to prepare one dish each day. The rest of the lunch was brought from home and supplemented this dish. The children who could afford to pay ten cents a week did so. With this amount of money food, paper towels, napkins, soap, and kerosene were purchased. Some commodities were available to use in the dish prepared. The children planned the menus weekly and they also planned what could be brought from home to supplement the one dish to be served. Each pupil took the suggestions home.

Committees to do the work were planned by the children and names were drawn each morning to see who could serve on certain committees for the day. The children who washed dishes always cooked the following day. The preparation of the food was done by the cooking committee before school and the food was put on to cook at the recess period. Any finishing up that was needed was done a few minutes before the noon hour.

Before eating each child washed his hands in warm water and with soap. After the hands were washed each child prepared his desk by spreading a napkin on it. The food prepared was passed to him on a tray. Each child took twenty minutes for eating, talk-

ing, and having a good time. The dirty dishes were then collected in the same manner the food was served and each child cleaned his own desk. The dishes were washed and put into big buckets and boiled during the noon hour and dried and put away during the recess period.

The equipment used consisted of a spoon and bowl or cup brought by each child from home, a small two-burner oil stove, two buckets to heat water for hand washing and for sterilizing dishes, two dish pans, a large container to cook the food in, a few pans and small equipment used in preparing the food, and cabinets and shelves for storage which were planned and built by the children.

Additional suggestions for making the school lunch an educational experience for the pupils may be found in the bulletin "Making School Lunches Educational," Nutrition Education Series, Pamphlet No. 2, U. S. Office of Education.

SECTION II. SCHOOL ADMINISTRATORS, TEACHERS, PARENTS, PUPILS, AND OTHERS IN THE COMMUNITY UNDERSTAND THE VALUES OF THE SCHOOL LUNCH PROGRAM

The success of the lunch program will depend to a great extent on the understanding which administrators, teachers, parents, and pupils have of the purposes and values of the lunch program. If administrators, teachers, parents, and pupils consider the lunch program just a feeding program instead of considering it an opportunity to strengthen existing good eating habits, to develop new ones, and to provide other educational experiences, the lunch program may fail. Some purposes and values of a school lunch program are:

1. To improve the health of the child
2. To develop good food habits
3. To develop a liking for foods which are needed for growth and development
4. To provide a pleasant social atmosphere where courtesy and table manners may be practiced
5. To provide learning experiences by making activities, in connection with the operation of the lunch program, educational.

Teachers will need to assume a large share of the responsibility for interpreting the lunch program to pupils and others in the community. Before they can do this, the administrator will need to arrange for the staff to meet together to decide why the school should have a lunch program, how the lunch program may fit in the total school program, what should be the objectives of the program, what should be the teachers' responsibilities, and how the lunch program can bring best returns nutritionally and educationally.

Pupils will more willingly cooperate with the lunch program if they understand its values. Teachers should make every effort to interpret the lunch program to pupils. When pupils understand the lunch program and see its values they serve as one of the most important means of interpreting it to the community. Some ways of developing, with the pupils, an understanding of the values of the lunch program are:

1. Teach what foods should be eaten daily with reasons for eating these foods.
2. Lead the pupils to check the foods eaten at breakfast and supper to see what is needed at lunch.
3. Have home rooms survey the eating habits of pupils to determine which ones need to be improved. Compile the information obtained for the entire school and make this information available to the pupils.
4. Present figures to the pupils showing the health status of pupils as revealed by the health department.
5. Use a check sheet to get such information as the foods which pupils like and dislike.
6. Have assembly programs showing the values of the school lunch.
7. Give pupils an opportunity to serve on lunch committees. (See the next section for a description of these committees.)

Parents must be informed about the program if they have an understanding of its purposes and values. One of the best ways of informing parents about the program is to visit the homes of the pupils. Another effective way is to have meetings with the parents for the purpose of discussing the dietary needs of their children and what the school is trying to accomplish through the school lunch program. Some other effective ways of interpreting the program to the community are:

1. Talking to different organizations, as civic clubs and women's clubs, at their regular meetings.
2. Writing articles for the local newspaper or the school paper.
3. Asking public health nurse to interpret the lunch program as she visits the homes.
4. Asking the local nutrition committee to help interpret the lunch program to the community.
5. Having an advisory committee to plan ways of interpreting the program to more people in the community. (More information is given on the use of an advisory committee in next section.)

SECTION III. SCHOOL ADMINISTRATORS, TEACHERS, PUPILS, PARENTS, AND OTHERS WORK COOPERATIVELY ON THE SCHOOL LUNCH PROGRAM

The combined efforts of many persons are needed if the lunch program is to serve as an educational program. One person alone cannot make it a success. When many people work together on a

program there needs to be some organization so that everyone can make a contribution and so that there will be little duplication or overlapping of responsibilities. The organization of committees, having definite responsibilities and having representatives from different groups, is an effective way of securing the cooperation and understanding of all groups.

Some responsibilities which may be assumed by school lunch committees are :

1. Keeping the public informed about values and needs of the lunch program.
2. Securing financial assistance for carrying out the program.
3. Securing equipment.
4. Locating volunteer workers.
5. Planning for the production and preservation of food.
6. Recommending policies governing the operation of the lunch program.
7. Acting as a clearing house for suggestions and complaints.
8. Interpreting the program to pupils and faculty.
9. Planning ways that the lunch program may contribute to the health of the pupils.
10. Planning ways of making the lunch room an enjoyable place in which to eat.
11. Evaluating lunches served to see if foods needed, to round out the diets of the pupils, are being included.
12. Planning ways in which the lunch program can contribute to citizenship and social education and to the training in cooking, food serving, housekeeping, bookkeeping, and business and office practices.

The number and types of committees, which any school has, will vary with the needs of the school and the groups in the community that are interested in the lunch program. Some schools have found a coordinating committee desirable, consisting of the administrator and school lunch manager and representatives of teachers, pupils, parents, health department, civic clubs, and the nutrition committee. Smaller sub-committees with members of the coordinating committee as chairmen may be appointed to work on specific problems. For example, if a committee is to work on ways of making the operation of the lunch program an educational activity for pupils, a teacher or the administrator might be the chairman. Other members on the sub-committee can be non-members or members of the coordinating committee. The suggestions made by the sub-committee would, however, be reported to the coordinating committee. If the problem is in connection with securing equipment, a sub-committee could be appointed with the person representing civic clubs or the administrator serving as the chairman.

Other schools have found a school lunch committee composed of faculty members and pupils most helpful for their situation. This committee might be made up of the principal as chairman, home economics teacher, another high school teacher, an elementary teacher, a high school boy and girl, and an elementary boy and girl. Many of the responsibilities of a lunch committee, listed above, may be assumed by this committee.

Some schools have used a committee made up of teachers in the school. This committee might consist of the principal and several teachers, including both high school and elementary teachers, if both are combined in the same school. Some of the most outstanding contributions that a committee of this type might make are: to determine policies relative to the lunch program, to plan a division of responsibilities, and to plan ways for all teachers to work together to make the lunch program an educational activity.

No one type of committee will serve all schools. More interest and understanding is secured when many people, instead of just a few, work with a program. The resources in the community and the jobs to be done will be factors to consider in organizing committees for the lunch program.

SECTION IV. MEALS SERVED ARE WELL BALANCED AND ATTRACTIVE

When planning menus for the school lunch a number of factors should be considered: amount and kind of food needed by the body, attractiveness, ease of preparation, foods available, equipment on hand, and cost.

According to recognized authorities, the minimum food requirements for children each day, or the "Basic 7" foods for children each day, are:

- milk—1½ pints to 1 quart
- vegetables—2 servings, one green or yellow, 1 serving of potatoes
- fruit—2 servings, one citrus or tomatoes and one other
- eggs—at least 3 or 4 times a week
- meat, fish, dried peas or beans—once a day
- whole-grain or enriched cereals and bread
- butter, or margarine fortified with Vitamin A, at every meal.

The noon meal should consist of approximately one-third of the daily foods required. The school lunch should be an adequate hot lunch, or a hot dish to supplement the packed lunch, or an adequate packed lunch. Each meal should contain as many of the "Basic 7" foods as possible. Meals served at school should be planned to sup-

ply the foods needed daily and those which are most often lacking in the meals at home.

A good hot lunch contains:

- A glass of milk or a food made with milk, as cream soup
- Two vegetables, or a vegetable and a fruit
- A main dish, such as eggs, meat, dried beans
- Whole wheat bread and butter
- A simple dessert, if desired.

A good packed lunch contains:

- Milk or milk drink
- Meat or meat substitute
- Vegetable or fruit or both
- A simple dessert, if desired.

When space and equipment do not permit the preparation of a complete hot meal at school a nutritious dish may be prepared and served at school to supplement the packed lunch brought from home. The type of food served should be that which is often lacking at home. For example, if tomatoes or oranges are seldom used in the homes, tomato juice or citrus fruits or raw vegetables could be served at school. During the winter a hot dish is preferable. If milk consumption is limited in the homes, the hot dish may be a cream soup or a milk beverage. If the intake of vegetables is low, vegetable soup or stew may be served.

Attractiveness is another essential factor in meal planning. Color, texture, flavor, and shape of the food served, all play an important role in making a meal attractive. Some guides to remember in making a meal attractive are:

1. Include at least one colorful food in every meal. When several colorful foods are used in the same meal, foods having colors that combine harmoniously should be selected. Foods naturally lacking color may be brightened with garnishes, such as a slice of tomato, carrot strips, sprigs of parsley, a piece of bright colorful fruit, or a spoonful of jelly.
2. Have, if possible, at least one hot food in each meal so there will be a contrast of temperature.
3. Serve foods that have a variety in texture, as soft foods and crisp foods. Toast or crackers served with soup and mashed potatoes served with a crisp vegetable salad are examples of variety of texture in meals.
4. Prepare foods so that all foods do not have the same shape as all diced, sliced, shredded, or cut in shape of balls or wedges. If string beans are served with beets, serve beets whole or sliced instead of shredding them.
5. Avoid serving two or more foods prepared in the same way in a meal, for example, creamed carrots and creamed potatoes.
6. Combine foods that have contrasting flavors as apples with bacon, tomatoes with meat loaf, etc. A meal that has all mild-

flavored foods or too many strong flavored foods will not appeal to the appetite. The same flavor or food should be served only once in a meal. For example, if escalloped tomatoes is the vegetable, tomatoes should not be repeated in the soup, sauce, or salad.

7. Avoid serving too many starchy foods in one meal, as mashed potatoes and macaroni.
8. Avoid serving the plates or individual portions of food more than five minutes ahead of time as this allows food to become contaminated, cool, and unattractive.
9. Serve small portions of food to small children and permit them to return for second helping if they desire.
10. Serve hot foods hot and cold foods cold.

When planning menus, careful consideration also needs to be given to the amount of equipment and the help available for the preparation of the meal. If help is limited, several dishes which require a lot of preparation should not be included in the same menu. For example, if a number of vegetables are to be prepared for soup, the salad or dessert should be the type that requires little time and preparation. Attention should also be given to the time that different preparations have to be made. Having too many last minute preparations in the meal should be avoided. Some foods in the menu should be the type that can be prepared in advance and only a few should have to be prepared just before serving. Many lunch rooms have limited oven space and the preparation of meat loaf, berry cobbler, and hot bread for the same meal would be impossible. When more than one food on the menu is to be baked, the foods should be ones that can be baked at the same temperature or at different times without spoiling the finished product .

Cost is another important factor in meal planning. Foods which are plentiful should be selected for the meals. The method of preparation of these foods should be varied so that the meals are not monotonous. For example, if carrots are plentiful they may be used one day as a vegetable, a second day in a loaf as a substitute for meat, and a third day as a salad in combination with fruit or with other vegetables. Cost may be reduced by combining foods which are expensive with less expensive foods. For example, when tomatoes are high and cabbage is less expensive, they may be combined in a salad using a large quantity of cabbage. The waste of food is also a factor which increases the cost of school lunches. Careful use should be made of any leftovers. Foods which are generally liked should accompany dishes that are not so well liked so that food will not be wasted. Another source of waste is the preparation of food. For example, apples and potatoes are often peeled so that much of

the food is thrown in the garbage pail. Food is also wasted when improperly prepared.

The way in which food is prepared affects its nutritive value and also its attractiveness. The following suggestions may be helpful in preparing food for school lunches :

1. Prepare foods as short a time as possible before serving to save vitamin content.
2. Cut vegetables in large pieces so they do not lose food value or their identity in preparation.
3. Cook vegetables as short a time as possible to preserve the food value, color, and flavor.
4. Do not over cook white vegetables, as potatoes, turnips, and onions, as this will cause them to turn an ugly gray color.
5. Avoid adding soda to vegetables to preserve the color or make them tender, as much of the food value is destroyed and the texture becomes slimy when soda is used.
6. Cook greens in as little water as possible. Only a little water in the bottom of the vessel or just the water left on the leaves in washing is sufficient for spinach and young tender greens.
7. Cook dried fruits and vegetables in the water in which they are soaked.
8. Do not remove the skins of highly colored fruits and vegetables when edible because they contain much food value. If they are not edible, remove as little as possible.
9. Cook all meats, eggs, and cheese slowly. This avoids toughening the food and helps prevent shrinkage.
10. Serve as little fried foods as possible in school lunches as fried foods are difficult for children to digest.
11. Avoid the use of highly seasoned foods. Pepper and spices should be used sparingly or not at all.
12. Use only enough sugar to bring out the flavor of the fruit.
13. Taste each food before serving it to children to be sure of taste and quality.
14. Cook home canned non-acid food 15 minutes before tasting or serving. If some is left over, reheat again before serving.

SECTION V. SANITARY PRACTICES ARE OBSERVED IN THE STORAGE, PREPARATION, AND SERVING OF FOOD

The sanitary practices used in the preparation, serving, and storage centers of the lunchroom, should exemplify the highest possible standards because of the effect they may have on the health of the child and on the formation of good health habits.

Personal Sanitary Practices. All persons working in the lunchroom, both paid and volunteer, should be clean and neat in appearance. They should also have good health and observe personal sanitary practices. Some of the sanitary practices that should be observed by all workers are :

1. Protect food from hair by wearing hair net or head band.
2. Wash hands before beginning food preparation and after coughing or sneezing and after returning from the toilet.
3. Dry hands on individual hand towel, never the dish towel.
4. Cover mouth with handkerchief when coughing or sneezing.
5. Avoid using a comb in the food preparation center.
6. Sample food with a "tasting" spoon—never with the stirring spoon.
7. Avoid wearing rings and bracelets.
8. Keep dish towels hung in proper place when not in use, instead of throwing them over the shoulder or carrying under the arm. They should be used for no other purpose than drying the dishes.
9. Do not eat while serving.
10. Use spoons, forks, knives, or tongs, instead of hands in serving food.
11. Avoid handling the inside of cups and glasses.
12. Keep hands off face, hair, and other parts of the body.
13. Do not handle food when having a cold, fever, skin eruption, cough, or any type of contagious or communicable disease.
14. Wear garments which are clean and which may be laundered.

Handling Food. Careful consideration should be given to the way and place in which food is stored. Improper storage of food may cause a great waste of food and also illness. All bulk staples, as flour, sugar, meal, and spices should be stored in covered containers, preferably tin, in a cool, dry place. Semi-perishable foods, as potatoes, onions, squash, citrus fruits, apples, and root vegetables, should be stored in a cool, dry, well-ventilated room. Placing these foods on racks (preferably screened), or on shelves, is recommended. Perishable foods, as meat, poultry, fish, eggs, dairy products, cooked foods, and opened canned foods, require refrigeration. If a refrigerator, or some other means of keeping food cool, is not available the perishable foods should be bought and prepared in quantities needed for immediate consumption.

The milk used in the lunchroom, whether for cooking or as a beverage, should be of the highest grade that can be purchased and should be inspected by qualified health authorities. Pasteurized milk is the only milk approved by the State Health Department as a beverage. In many communities pasteurized milk cannot be obtained and the schools have to decide whether they will serve raw milk, pasteurize the milk themselves, or serve no milk to the children. In the July, 1943 issue of the "Commonwealth of Kentucky Bulletin of the Department of Health" Dr. F. W. Caudill, State Health Department, explains that milk is an excellent medium for the growth of bacteria and an excellent vehicle for spreading infection to the consumer. He also states that diseases which may be trans-

mitted by milk are typhoid fever, bacillary dysentery, scarlet fever, diphtheria, tuberculosis, undulant fever, septic sore throat, and staphylococcus milk poisoning. Milk may be clean and still contain disease bacteria. Pasteurization insures the killing of disease producing germs. When raw milk is served in a lunch room, both parents and children should be informed of the dangers of drinking raw milk and given a chance to decide whether or not they want to drink the milk so that the school will not be held responsible if some disease is contracted from milk sold at the school.

The following methods of pasteurization of milk are recommended by the State Health Department and may be found usable in some schools:

Home Pasteurization Method No. 1. Place the milk in an aluminum vessel, over a hot flame, and heat to 160°F., using a thermometer and stirring constantly. Then immediately set the vessel in ice and water or cool water and continue stirring until cold.

Home Pasteurization Method No. 2. For this method a thermometer is necessary. Bottles should be boiled or exposed to live steam and inverted to drain. Fill bottles with clean milk and cap. Then set all bottles of milk on a rack in a pail or boiler of cold water. Cold water should be to the level of the milk. Punch a hole in cover of one bottle near center of container and insert the thermometer. Heat until the milk registers 145° F. Remove the pail or boiler from the heat and leave the bottles in hot water for 30 minutes, reheating if that is necessary to keep the milk at 145° F. After the 30 minute period, replace the hot water gradually with cold water until milk has cooled. Place under refrigeration as soon as cooled and keep until used.

When lunch programs use home canned non-acid foods donated by parents and other members of the community, care should be taken to boil the canned product 15 minutes before tasting or serving. Spinach and cream style corn should be boiled 20 minutes. Count time after product has begun to boil. This precaution should be taken to prevent the food poisoning, botulism. It is impossible to tell what food is capable of causing botulism by just looking at or smelling it.

When drinking water is not from an approved city supply it should be tested regularly to insure its safety.

All garbage should be disposed of daily and in a way approved by the health department.

Care of Room and Equipment. The room in which food is stored, prepared, or served, should be kept clean at all times. Frequent washing of floors, walls, woodwork, and windows, is necessary. No sweeping should be done while food is being prepared or served. Some cleaning jobs will need to be done daily, others weekly, and others just occasionally. A list of suggested daily, weekly, and occasional cleaning jobs, found in "Handbook for Workers in School Lunch Program",¹ follows:

Daily jobs—

- Ventilating cooking, storage, and serving rooms.
- Dusting furniture and cleaning all working and serving space.
- Getting kitchen ready for preparing and lunchroom ready for serving lunch.
- Clearing tables and putting lunchroom in order for serving lunch.
- Cleaning stoves, sink, and refrigerator.
- Washing dishcloths, towels, and dust cloths; also napkins and place mats, if used.
- Sweeping floors, and mopping if necessary.
- Removing garbage and waste and sterilizing the garbage cans.
- Final checking of lunchrooms, storeroom, and serving room to see that everything is clean and in order.

Weekly jobs—

- Thorough cleaning of shelves, drawers, cabinets, refrigerator, and stoves.
- Washing window sills and removing finger marks from doors and other woodwork.
- Cleaning storeroom.
- Polishing silver.
- Cleaning sink and drainpipe.
- Special scouring of pots and pans.

Occasional jobs—

- Washing windows and cleaning screens and shades.
- Special cleaning of floors.
- Special cleaning and waxing of furniture in lunchroom.
- Special cleaning of mechanical equipment.

All dishes and utensils should be washed properly to prevent the spread of infection. The method used in the school lunchroom should conform to requirements set up by the local department of public health. A general procedure to follow in washing dishes is to wash dishes in a generous supply of hot, soapy water, next rinse dishes in hot clear water to remove soap, and then place dishes in a chlorine solution and allow them to stand not less than three minutes, taking care that dishes are completely covered with the solution.

¹ Handbook for Workers in School Lunch Programs, NFC-3 Nutrition and Food Conservation Branch, Food Distribution Administration, U. S. Department of Agriculture.

This sterilizes the dishes. The State Board of Health advocates that the amount of chlorine preparation used be in correct proportion to the amount of water used in washing the dishes. For exact amount of chlorine consult local department of health. A label stating the amount of chlorine to use for the capacity of the container is desirable. Hot water may again be poured over the dishes but this is not absolutely necessary. If time does not permit dishes to drain until dry, they may be dried with clean towels and put away at once. Dish towels and cloths should not be used a second time without laundering. Dish pans should be carefully cleaned and dried.

All dishes and utensils should be stored in a clean, dry place protected from insects, dust, and other contamination. Dishes and utensils may be stored in kitchen cabinets, shelves, and cupboards, but never on the floor. These storage places should be provided with doors. All cabinets, shelves, cupboards, or other equipment, should be built at least eighteen inches from the floor. This allows the floor area to be kept clear for easy sweeping and mopping. This will also facilitate the control of rats, mice, roaches, and other insects in the kitchen. Glasses, cups, and bowls should be inverted when not in use. Silverware should be stored in a way that only the handles will be touched.

SECTION VI. THE PHYSICAL CONDITIONS ARE SATISFACTORY FOR THE PREPARATION AND SERVING OF MEALS

The room and equipment used for the school lunch will vary from school to school. Therefore, only general suggestions on planning space and equipment are given. Available space, money, location, labor, and material are some of the factors that will influence the final plan. In many schools, rooms that are not being used for other purposes may be remodeled so that they may be used for the preparation and serving of the lunch. In new buildings the location of the school lunch room should be given careful consideration. The space selected for any type of lunch room should have the following characteristics:

1. Be of sufficient size for preparation, serving, and storage of food. Rectangular rooms of good proportions are best suited for both serving and preparation centers. The serving area should be large enough to seat the entire student body in not more than three shifts. A minimum of fifteen square feet should be allowed for each child being served. A space one-fifth as large as the dining area is satisfactory for the kitchen area.
2. Have good ventilation—cross ventilation, if possible. If basement rooms, converted class rooms, or cloakrooms are used,

exhaust fans may need to be installed to provide sufficient ventilation.

3. Have sufficient light—either natural or artificial. Fifteen to twenty foot-candles of illumination are desirable in the serving room. Ten foot-candles should be provided in working areas. Four or more foot-candles are desirable in the storage area.
4. Have walls, floors, and ceilings that are easily cleaned. Well laid linoleum or tile make satisfactory floor coverings. All floors should be smooth so that they may be cleaned frequently. Walls and ceiling should be smooth and painted a light color.
5. Have doors and windows to the lunch room screened.
6. Have some provision for adequately heating the lunch room.
7. Locate lunch rooms away from toilet rooms.

The following guides should be considered in selecting and equipping the serving center.

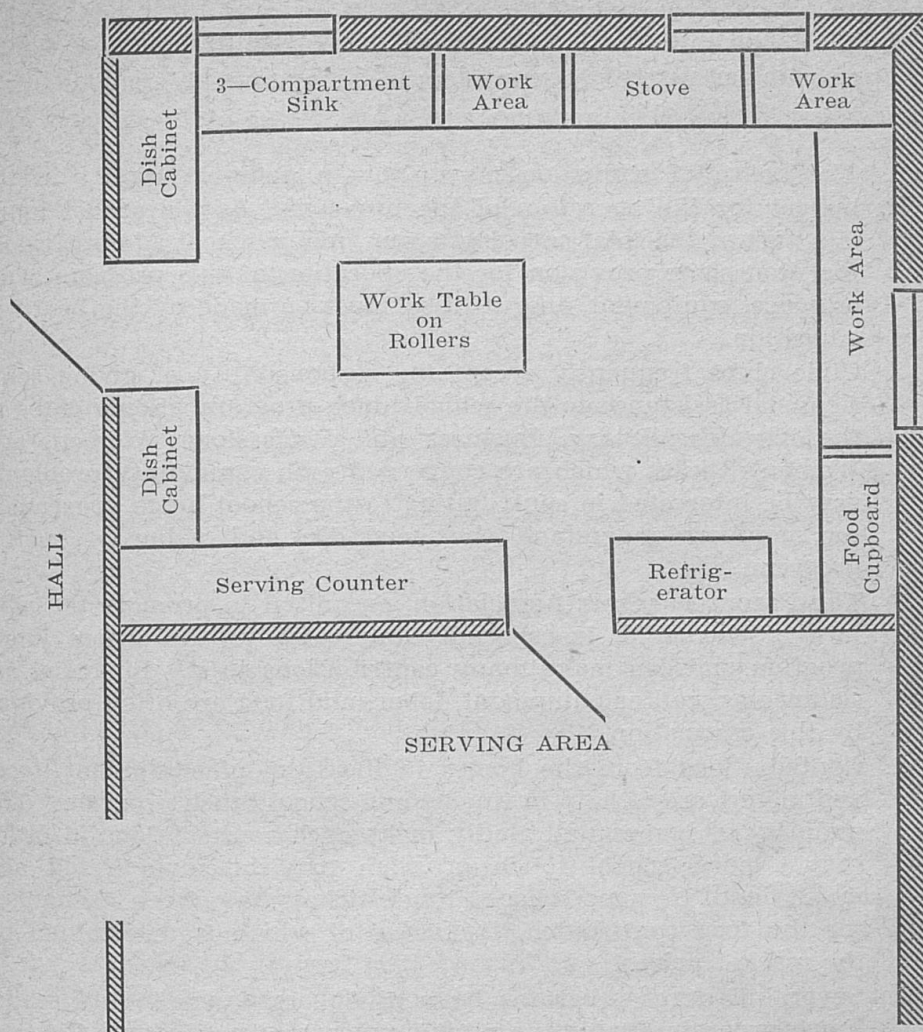
1. The size and shape of room will influence the size and shape of tables. Tables (4'6" x 4'6") large enough to seat six persons, with solid tops covered with resilient materials, are desirable because they are easy to clean and not noisy. Comfortable chairs of the correct height should be provided for the various age groups.
2. A space of 15 feet is desirable for the service counter to take care of trays, silver, napkins, and food served.
3. The minimum serving equipment for each child is: a plate, soup or cereal dish, glass or cup, fork, and spoon.

The following guides should be considered in equipping and arranging the preparation center:

1. Running water is desirable. Adequate provision should be made for a plentiful supply of water for all purposes.
2. An automatic water heater is desirable. If not possible, large containers for heating large quantities of water are needed.
3. All working surfaces (top of sinks, stoves, work tables, and cabinets) should be of proper height—about 34-36 inches.
4. Refrigerators should be placed so that doors open conveniently to the work surface.
5. One-tenth of a cubic foot of refrigeration space is recommended per meal served.
6. A receiving table should be near the delivery entrance.
7. Hand washing facilities should be made available to all workers.
8. The following suggested list of small equipment is needed for preparation of food for 50-100 children:¹
 - 2 kettles (20 quart) with straight sides and side handles if possible
 - 3 kettles (16 quart)
 - 1 kettle (10 quart)
 - lids to fit all kettles
 - 1 (15 quart) double boiler
 - 3 drip pans (suitable for size of oven) 3 inches deep
 - 3 shallow baking sheets (suitable size for oven)
 - 3 (3 quart) pitchers

¹ Adapted from a list given in *Handbook for Workers in School Lunch Programs*, NFC 3, Nutrition and Food Conservation Branch, Food Distribution Administration, United States Department of Agriculture.

- 1 food grinder
 - 2 large trays
 - 3 or 4 large mixing bowls of assorted sizes
 - 3 large dishpans
 - 1 or 2 dish drain racks
 - 1 garbage can (galvanized, watertight, with cover, adequate for 1 day's waste)
 - 1 large colander
 - 1 large coarse strainer
 - 1 large frying pan
 - 1 cutting board (size board 18 by 18 by 2 inches)
 - 1 can opener (institutional size)
 - 1 can opener (hand-operated)
 - 1 rotary egg beater
 - 2 soup ladles with side lips
 - 3 large wooden stirring spoons (long enough to use in the 20-quart kettles)
 - 2 standard measuring cups (1-cup size)
 - 2 standard quart measures (straight sides)
 - 1 large kitchen fork
 - 1 small kitchen fork
 - 2 or 3 paring knives
 - 2 sets of measuring spoons
 - 1 pair shears
 - 2 vegetable brushes
 - 1 knife sharpener
 - 1 large potato masher
 - 1 spatula or cake turner
 - 1 apple corer
 - 1 flour sifter
 - 1 broom
 - 1 dust pan
 - 1 mop with pail
 - 1 towel rack (or clothesline)
9. A definite place should be planned for each piece of small equipment. It should be placed where it is to be used most often. For example, if most vegetables are prepared at the sink, the paring knives, brushes, etc., should be placed near the sink. If the vegetables are prepared at the work table, the small equipment needed should be near the table.
 10. The minimum list of large equipment for the simplest type of hot lunch program is: a stove, storage cabinet, and table. Most school lunch programs will need the following equipment: a stove, a refrigerator, storage cabinets for food and utensils, work tables, and serving counters. Some schools have found a work table on rollers, that may be moved from place to place as needed, to be a convenient piece of equipment.
 11. Each piece of equipment should be located in the most convenient place for use. The activities carried on in the kitchen are divided into food preparation and clearing away. The stove, refrigerator, food storage cabinet, and work table are used in preparation of food and should be grouped so as to be convenient for this use. The sink, dish cupboard, and work table are used when washing the dishes and should be grouped conveniently for this use. The following diagram shows an arrangement of large equipment in a kitchen conveniently grouped for food preparation and clearing away.



12. Safety precautions should be observed in placing equipment.

SECTION VII. GOOD BUSINESS PROCEDURES ARE USED IN MANAGING THE SCHOOL LUNCH PROGRAM

Efficient management of the school lunch is essential to a good school lunch program. If work is well-planned and plans are carried out efficiently and if good business procedures are used in handling the finances and keeping records, the operation of the school lunch program will be less difficult and fewer problems will arise. The procedures used should be as simple as possible in order to keep the lunch program operating smoothly and in a business-like manner.

School Lunch Finances. Unless school lunch financial problems are handled efficiently, the school lunch program will not succeed. Financial problems of the school lunch program are of two types: securing funds for the operation of the program and using good business procedures in handling these funds.

Many school administrators feel that they cannot have a school lunch program because of the problem of financing it. School lunch programs are financed in a number of ways. Some of these ways are:

1. The board of education may allow a definite amount in the budget for the operation of the program. As the school lunch is a part of the total school program, many school administrators feel that some provision for the operation of this program, such as space, equipment, and utilities, must be made by the board of education.
2. Civic clubs frequently accept the responsibility of giving some financial assistance to the school lunch program. Some clubs as the Kiwanis, Rotary, Business and Professional Women, and Women's Clubs, which are concerned with community problems, may be interested in contributing to the school lunch program if the members understand the need for and value of such a program.
3. The Parent-Teachers Association, organized to promote the welfare of the child, is especially interested in the school lunch program and can make many contributions to it. Financial assistance as well as equipment, labor, and food are often provided by this association.
4. Contributions from the homes in the form of equipment, food, and money are of help in financing a school lunch program. The majority of homes will gladly make such contributions in order that a good school lunch program may be inaugurated and maintained. In some schools, lunch tickets have been exchanged for the food contributed, the value of which is determined by the market price.
5. Several Federal programs have given assistance to the school lunch program during the past few years. The Federal Government is continuing to give aid to local schools in financing the school lunch program where such need exists.

Handling the finances for the school lunch program is an important responsibility. Good business procedures, which are used in handling other school finances, should be used in this program. Some suggestions of good business procedures, to be used in handling the finances for the school lunch, are:

1. The superintendent should designate a person or persons to be responsible for keeping records, banking money, and paying bills in each school or have one person carry on these activities for all lunch programs in the system.
2. The person appointed to handle the finances should make a monthly report to the superintendent or board of education.
3. The school lunch fund should be kept separately from other funds in the school.
4. Financial records for the school lunch program should be kept separately from all other school accounts. They should also be coded separately on the financial ledger.

5. All funds received for the school lunch program should be used exclusively for the lunch program.
6. Receipted bills should be kept on file for all purchases.
7. Merchandise received should be checked and signed for by the person receiving such goods.
8. All bills should be checked against delivery orders and paid regularly, either weekly or monthly by check or cash. In case payment is made in cash a receipt should be obtained which is signed and dated.

Suggestions for different types of financial records to be kept for the school lunch are given later in this section.

Managing Work in the Lunch Room. The school administrator usually employs a lunchroom manager or appoints a teacher to direct the program. In large schools a trained lunchroom manager is usually in charge. In small high schools a home economics teacher or some other teacher may be appointed, and in small elementary or one-room schools a teacher or parent, under the supervision of the teacher, may be in charge.

The responsibilities of the lunchroom manager will vary with the size and type of school. Some of these responsibilities are:

1. Makes out financial budgets
2. Helps plan the arrangement of the rooms used for preparing and serving the lunch
3. Plans the menus
4. Plans the work schedules for both volunteer and paid helpers
5. Plans ways of getting pupils to select well-balanced lunches
6. Checks recipes and market orders
7. Checks to see if food is being prepared properly
8. Checks to see if everything will be ready to serve on time
9. Sees that working and serving areas are kept clean, sanitary, and attractive
10. Checks the records
11. Checks the supplies to see that they are properly stored, and in good condition, and that none are wasted
12. Checks inventory of equipment and supplies
13. Works with teachers on ways she can help make the lunch program educational.

One of the responsibilities of the lunchroom manager, as listed above, is to plan the work schedules. The work schedule should contain the jobs to be done, when they are to be done, how much time is to be spent on each job, and who is to do the job. Some jobs that may need to be scheduled are:¹

A. Daily jobs:

1. Check the grocery order; take out the supplies needed for the day, and store the others properly
2. Assemble the utensils needed

¹ Adapted from *School Lunch Management*, Federal Security Agency, Nutrition Education Series, Pamphlet No. 3, U. S. Office of Education.

3. Prepare the food for the day
 4. Clean the tables before the meal
 5. Wash all kitchen utensils as soon as used
 6. Get out dishes used for serving
 7. Fill the water coolers
 8. Clean the tables after the meal
 9. Check the leftovers and change the next day's menu to include the leftovers
 10. Store leftovers properly
 11. Select the recipes to be used the next day
 12. Prepare the food for the next day, if needed to be prepared ahead of time
 13. Make out the market order and order supplies for the next day
 14. Wash, scald, dry or drain the dishes
 15. Clean stoves, sink, tables, etc.
 16. Dispose of the garbage and scald the garbage can
 17. Drain and clean the water coolers
 18. Sweep the kitchen and the serving area
 19. Rinse out dish cloths and towels
 20. Check to see that all fires are out
 21. Keep necessary records
 22. Post the menus for the next day and place recipes in an accessible place
- B. Weekly jobs:
1. Clean the stove thoroughly
 2. Give the refrigerator the weekly cleaning
 3. Check staple foods and order those needed
 4. Mop the kitchen, storage, and serving areas, if needed
 5. Clean the water coolers thoroughly
 6. Get laundry ready to send
 7. Clean all woodwork in the preparation and serving areas
 8. Plan the menus for the week
 9. Clean the mops and dust cloths
 10. Clean the shelves, drawers, and other storage areas
 11. Refill the salt and pepper shakers, if needed
- C. Occasional jobs:
1. Clean the shades, screens, and windows; and wash the curtains
 2. Wax inlaid linoleum or varnish printed linoleum
 3. Finish or refinish table tops
 4. Eradicate any pests which are present. (These can be controlled by constant vigilance, use of insect powder, and the use of mouse traps.)
 5. Make necessary repairs—handles on drawers, screens, hinges or springs; sharpen knives.

Volunteer workers are being used in many schools because of the labor shortage and because of the need for cutting expenses. Many schools have found the use of volunteer workers an excellent way of keeping parents informed and interested in the school lunch program.

When volunteers work in the lunchroom, they should understand that they are responsible to the lunchroom manager and that the lunchroom manager is the one who delegates the jobs to be done by the different workers. If the volunteer worker understands the set-up she will see how she fits into the program. Some obligations which all volunteer workers should assume are:

1. Report regularly as scheduled
2. Find and notify a substitute when she cannot go herself
3. Keep the same standards of work as those expected of paid workers
4. Accept, willingly, supervision and direction from those in charge
5. Talk with school administrator and the lunchroom manager, not with people outside the school, about problems that arise with which she may be concerned
6. Report any problems concerning pupils to the teacher in charge.

The job of the lunchroom manager is a complex one and the saving of time and energy is essential. Some tips that may guide her in successfully carrying on her work are:

1. Plan ahead
 - a. Planning menus a week in advance enables the buyer to order a larger quantity of supplies at one time and to make better use of money and points.
 - b. Planning work schedules ahead of time enables the workers to know what is expected of them, thus saving time and eliminating confusion.
2. Keep equipment in most convenient place and in good working order
3. See that the right tools and equipment are used for the job
4. Eliminate unnecessary jobs
5. Be alert to short cuts in methods of work.

Keeping Records. Adequate records are valuable in operating a school lunch program. The type, kind, and number of records to be kept will depend on the size of the school and the number and kinds of workers. Records are of little value unless kept accurately and up to date.

Some suggested records to be kept are:

1. The menus. These should be kept on file and labeled as to whether they are popular or not. (See Plate A.)

Record of Menus Served for the Month

Month of _____ Name of School _____

Date of Week	Monday	Tuesday	Wednesday	Thursday	Friday

(Plate A)

2. The recipes. These should be on file, with the statement as to the number served, size, portion, and cost. Cards 4" by 6" in size may be used for filing. (See Plate B.)

Front of Card

Name of recipe		
Size of portion	Total yield	No. portions
Ingredients	Method	

Back of Card

Cost per portion	Sale price per portion	Date

(Plate B)

3. An order list should be made, giving article and amount needed, so that the grocery delivery order can be checked against it.
4. All income of the lunchroom should be recorded and these records kept on file. Keeping accurate records protects the manager and affords a chance to analyze the financial condition. This record should include a daily record of number of meals served, the cost per meal, and the daily donations or contributions. (See Plate C.)

RECORD OF MONEY RECEIVED

Month of _____ Days Lunches Served _____

Date	No. Meals Served	Cost per Meal	Contributions or Donations	Total Cash Receipts
March 12, 1944	200	\$.15		\$30.00
March 13, 1944	150	.15	\$3.00	25.50

TOTAL \$ _____
(Plate C)

5. All disbursements for the lunchroom should be recorded and kept on file. (See sample, Plate D)

Record of Daily and Monthly Expenditures

Month of March Name of School Keswick

Date	Name of Vendor	Item	Food	Labor	Equipment	Supplies	Utilities	Laundry	Misc.
2	White Meat Market	Roast Beef	5.54						
2	Highland Dairy	1 qt. Cottage Cheese 6 gal. Milk	.75 3.36						
3	Graham-Jones Hdw. Co.	Butcher Knife Insect Spray			2.00	.60			
		Totals							
			GRAND TOTAL \$						

(Plate D)

6. An inventory of all equipment belonging to the lunchroom should be kept on file. (See sample, Plate E)

Sample Equipment Inventory

Equipment	Date of Purchase	Place of Purchase	Approx. Cost	Present Condition	Date Inventory is Taken
(Large)					
1 Sink	March 1, 1942	Owen Bros., Louisville, Ky.	\$ 27.00	Excellent	May 12, 1944
1 Stove	March 20, 1942	Graham-Jones Co., Cincinnati, O.	100.00	Excellent	May 12, 1944
1 Table (Work)	March 20, 1942	Gift	Excellent	May 12, 1944
(Small)					
10 doz. Forks (Dinner)	March 10, 1942	Nordell Co., Louisville, Ky.	8.00	Excellent	_____
10 doz. Glasses	March 10, 1942	Same	6.00	Excellent	_____
10 doz. Knives	March 10, 1942	Same	8.00	Excellent	_____
10 doz. Plates (Dinner)	March 10, 1942	Same	30.00	Excellent	_____
10 doz. Spoons	March 10, 1942	Same	8.00	Excellent	_____

List items in alphabetical order, as it is easier to locate when checking inventory.

(Plate E)

A FEW SUGGESTED REFERENCES

Below are listed a few helpful references on the school lunch program. No attempt has been made to list all of the available references on the school lunch program. The ones listed are available to the schools at no cost or little cost.

Nutrition Education in the Elementary School, Pamphlet No. 1—Nutrition Education Series, U. S. Office of Education, Washington 25, D. C., August, 1943 (Price 10c)

Making School Lunches Educational, Pamphlet No. 2—Nutrition Education Series, U. S. Office of Education, Washington 25, D. C., February, 1944 (Price 10c)

School Lunch Management, Pamphlet No. 3, Nutrition Education Series, U. S. Office of Education, Washington 25, D. C., March, 1944 (Price 10c)

School Lunch and Education—Circular No. 202, Federal Security Agency, U. S. Office of Education, Washington 25, D. C., (Free)

Handbook for Workers in School Lunch Programs, U. S. Department of Agriculture, Food Distribution Administration, Washington 25, D. C., August, 1943 (Free)

School Lunches, Circular No. 373, College of Agriculture, Extension Service, University of Kentucky, Lexington, Kentucky (Free)

Food Handling and Public Health, Kentucky State Department of Health, 620 S. Third Street, Louisville, Kentucky (Free)

Meals for Many, Harris-Wood, Cornell University, Ithaca, New York, February, 1944 (Price 30c)

Manual for Manager of Rural and Other Small School Lunchrooms, Ohio Dietetic Association, 1001 Huron Road, Cleveland, Ohio, 1942 (Price \$1.50)

