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F. S. COOLEY, Director

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The School Lunch

BY

MARY ANN GRABER

State Specialist in Home Economics

Bozeman, Montana

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The School Lunch

The aim of this series of lessons is to contribute to an understanding of the proper feeding of school children and to help the rural teacher with the problems of the hot school lunch. Adequate feeding of school children necessitates a study of both the cold box lunch and the hot lunch served at school.

I. THE COLD SCHOOL LUNCH

The cold school lunch should be regarded as a substitute for the noon meal eaten at home and not merely a form of serving refreshments to tide the child over from the morning to the evening meal. Not all foods are palatable cold, and many neither pack nor carry well. Because of these limitations in the choice of food for the box luncheon, more thought and care are required in planning this meal than are required in planning a meal that is to be served at the family table. Instead, the child is often allowed to choose and pack his own lunch, or given a meal that consists of family left-overs.

A school lunch should consist of sandwiches, a succulent food and a dessert or sweet. There are so many possibilities for each of these that there need not be a tendency toward sameness from day to day.

For the purpose of discussion the subject will be divided into three heads:

1. Selecting and preparing the food.
2. Packing the lunch.
3. Types of containers and equipment.

SELECTING AND PREPARING THE LUNCH

Particular care should be given to the selection and preparation of the food to insure an appetizing lunch and the right kind of nourishment. The substantial part of the lunch is the sandwich made of the various kinds of breads and nutritious fillings.

I. The Sandwich

KINDS OF BREAD

1. White.
2. Brown.
3. Graham.
4. Nut.
5. Raisin.

FILLINGS

1. Meat and meat substitutes. Meat sliced thinly or ground and mixed with salad dressing for seasoning and to give it a pasty consistency.
2. Peanut butter.
3. Ground or chopped nuts.
4. Chopped or scrambled eggs seasoned with salt, pepper and vinegar or salad dressing.
5. Cheese in slices or chopped and rubbed to a paste with salad dressing.
6. Fruits:
 - a. Dried fruits ground—as figs, raisins, prunes and dates. To vary, mix with lemon juice, salad dressing or nuts.
 - b. Jelly, jam and marmalade.
7. Vegetables:
 - a. Lettuce, water cress, baked beans, chopped cabbage, onion.
8. Miscellaneous:
 - a. Peanut butter and jelly.
 - b. Raisins or other dried fruit and nuts.
 - c. Cheese and dates chopped together. (Cottage cheese may be used.
 - d. Cheese and nuts. (Cottage cheese may be used.

POINTS IN MAKING SANDWICHES

1. Slice the bread so that the finished sandwich will be uniform and not more than three-fourths of an inch in thickness.
2. Soften the butter by creaming and spread both slices of the bread. This makes a more tasty sandwich and keeps the filling from soaking the bread.
3. The size should be such that it can be handled without embarrassment to the child and it should be so made that it will hold together well.

II. A Succulent Food

Fresh, canned or dried fruit; apple sauce; potato and other vegetable salads; fruit jellies; potato chips.

(If fruit seems very dry, plump by soaking in water over night. Anyone enjoys plain dried fruit in a cold lunch.)

III. A Dessert or Sweet

Plain cookies, sponge cake, raisins or other dried fruit; prunes filled with nuts, nut butters or cottage cheese; milk puddings, such as corn starch, chocolate, tapioca, rice; custard baked in cup.

From the foregoing suggestions, the following lunches have been planned:

Sandwich	Succulent	Dessert or	Sweet
Ground meat	Apple sauce	Rice pudding	Crisp cookies
Peanut butter	Jelly	Cup custard	Cookies
Raisin sandwich	Deviled egg	Fruit	Sponge cake
Baked bean	Potato chips	Chocolate pudding	Dried fruit
Raisin bread	Fruit	Cornstarch pudding	Nuts.

PACKING THE LUNCH

The plain, more nourishing part of the lunch, the sandwich, should be placed in the top of the lunch box, as the child ordinarily begins at the top. If the dessert is put in ~~first~~ ^{last}, the child eats it first and leaves the sandwich, the food that he most needs, to be either carried home or thrown by the wayside. Sweets or desserts have held top place in the lunch box because of their fragile character, but some method of packing should be used that will offer the sandwich or the substantial part of the meal to the child first. Sugar has the power to satisfy the appetite quickly, so, by the time the dessert has been eaten, all desire for food has been lost. When eating at the family table, the child is reproved if he asks for dessert first, yet the school lunch is frequently packed in this manner, serving dessert first.

Wrap each article of food in the lunch box with wax paper or plain white paper napkin in order to keep flavors from mixing or causing the characteristic lunch box odor; to protect foods that are likely to be crushed and to insure a pack that will carry well, so that the child opens a box so neat and attractive in appearance that he is tempted and will eat all of the food that the lunch box has to offer him.

The school child will appreciate finding a neatly folded, plain, white paper napkin on the top of his packed lunch.

THE CONTAINER

TYPES OF CONTAINERS

Baskets, tin pails, fiber case, fiber case with tin inner lining, paper bags and paper wrappers.

CONTAINER

A container that is to be used daily must necessarily be made of durable material that will withstand the action of soap and hot water. Thorough washing, scalding, airing at night and weekly sunning are essential to keep the box in a clean and sweet condition. The fiber lunch box has been extensively used, but it is difficult to clean and does not wear well; it has been a favorite with children because it is light and seems more dignified than the tin bucket. A good container is the fiber case with a tin inner lining that can be removed and cleansed as easily as the tin pail, and it has the advantage of being more attractive in appearance.

The objection to a basket is that it admits a free circulation of air, which allows dirt and dust to enter and causes the lunch to be dried out unless each article is well wrapped with wax paper. To keep a lunch basket clean, wash with a brush and sun frequently.

Paper bags and wrappers are not practical because of the quantity needed when a lunch is packed daily.

EQUIPMENT

Knife, fork, spoon, glass or small jar with tight-fitting cover for jelly, fruit or any other food likely to spill; paper napkins and wax paper.

II. THE HOT SCHOOL LUNCH

The custom of preparing and serving in the school room one hot dish supplementary to the cold lunch brought from home is a good one, and will simplify the problem of providing school children with adequate food.

Let us make an analysis of the meals consumed by many children during the school year.

I. The breakfast is eaten hastily in order to catch the school wagon or to have sufficient time for the long walk with a few minutes to spare for play before school begins.

II. After a long morning of exercise and study, a growing child is ready for a good nourishing meal. Instead, he sits down

to a cold lunch that frequently consists of inadequate and partly frozen food, while the family at home is enjoying a good hot meal. (Such food is not conducive to mental activity. It is, to a great degree, the cause of many cases of malnutrition, which leads to backwardness in work among school children. Upon proper food depends the development of a sound body and healthy mind.)

III. What is the situation in the evening? This tired, hungry child returns, repeating the long journey of the morning, and often helps with the chores before supper time. Though he is hungry, he should not eat before meal time. The supper was planned for the men folks of the family and in accordance with the food served to them for dinner. The one who should be considered most has been forgotten in the plan. Seemingly he eats a big meal, but is it the right kind of food to make up for the lack in his cold school lunch, and is it in suitable form to be readily digested so that it will not interfere with his necessary rest at night? When this is repeated day after day, the effect upon the child's health is apparent, though it is often unknowingly attributed to some other cause.

Are the other members of the family equal sufferers with the child? Decidedly not! After they have hustled the little folks off, they go back and eat their breakfast in peace and quiet. At noon the family enjoys the biggest and best meal of the day while the younger members at school are having a cold lunch. Usually, the family dinner includes the fruits and vegetables of the day's dietary. These foods that are so necessary for bodily growth and health, the child misses. Considering some of these things, and that the child eats more than one-fourth of his meals at school, it is worth our while and effort to establish the custom of serving one hot dish in the school lunch.

The Minnesota Public Health Journal for December 5, 1918, states:

"Health in the country has deteriorated until it is now far below the average health in the city. From statistics taken in the State of New York, Dr. Thomas Wood has shown that country children present a much higher average in all defects, even malnutrition, than their city cousins. Malnutrition in the country averages 16.6, in the city only 7.65. The children in the country should be given warm lunches, just as children in the city schools are."

ADVANTAGES OF HOT LUNCH

In addition to furnishing hot food in the noon meal the hot lunch affords opportunities in illustrating:

- I. Sanitary principles.
- II. Selection of food so the diet will be adequate.
- III. Food preparation.
- IV. Food habits.

I. SANITARY PRINCIPLES

Unless sanitary principles are carefully applied, all benefits derived from the hot food may be offset by moral and physical injury which will result from the cultivation of careless, untidy and unclean habits. Everything must be scrupulously clean. The pupils who prepare the food should wear clean all-over aprons to protect the food as well as the dress. Careful attention should be given to the condition of the hands and nails; each child must scrub his or her hands well with soap and warm water before handling any food. Habits of neatness in work and personal appearance should be insisted upon by the teacher or the one who is in charge. A good lesson in sanitation can be taught by insisting that all the pupils of the school wash their hands before the lunch is served, each girl washing her hands with soap and warm water, and then the boys taking their turn; all wiping on clean paper toweling.

It will be necessary to ventilate the room well. Because an oil stove vitiates the air, there should be a complete change of air in the school room at noon.

Any food that is kept in school must be carefully protected against dust or any other source of contamination. Lard pails, tin coffee cans or glass jars with tightly-fitting covers are excellent for the storage of food.

One of the best lessons in the hot lunch plan is the teaching of the proper way to wash dishes. There must be plenty of hot soapy water for washing, sufficient boiling water to thoroughly scald all dishes and utensils and a wire drainer or clean cloth for drying.

II. SELECTION OF FOOD SO THE DIET WILL BE ADEQUATE

The basis of selection is an understanding of the uses of the food nutrients and their occurrence (See references). A lunch should be brought from home that will fit in well with the hot

dish. Therefore, the hot dish should be announced one week in advance so that the mother may plan accordingly.

The following are some suggestions:

Hot dish—Cocoa.

Cold lunch—Cheese sandwiches, graham crackers, fruit.

Hot dish—Cream of potato soup.

Cold lunch—Meat sandwiches, canned fruit, plain sugar cookies.

Hot lunch—Creamed rice and cheese.

Cold lunch—Bread, butter and jelly sandwiches, molasses cookies.

Hot dish—Apple sauce.

Cold lunch—Dried fruit sandwich, nuts, deviled egg.

Hot dish—Creamed cabbage.

Cold lunch—Nut or nut butter sandwich, plain cake.

III. FOOD PREPARATION

The principles underlying the preparation of food will be discussed in the series of lessons. At the outset it should be remembered that preparation makes a wide difference in palatability and digestibility and, through these, the nutrition of the body.

IV. FOOD HABITS

Part of the work accomplished by the hot lunch will be the teaching of proper food habits so that the children will not grow up with whims and aversions regarding food, but will have cultivated a cosmopolitan taste and will eat in a more leisurely, orderly and dignified manner.

CORRELATION

It may seem on first analysis that the curriculum is already overcrowded and that there is neither time nor place for the hot lunch. Little time needs to be taken from the regular studies, as this subject may be correlated with a number of branches already in the course. This will vitalize subjects that are often dead because they have no connection with every day life.

CORRELATION WITH

I. Geography.

A. Source of food products.

B. Transportation.

II. Physiology:

- A. Needs of the body.
- B. Food nutrients.
- C. Digestion.

III. Arithmetic:

- A. Calculating cost of lunch, dishes and cost per serving.
- B. Cost of food production.
- C. Cost of food transportation.

IV. Agriculture:

- A. Production of food.

V. Language:

- A. Composition work.
- B. Writing sentences.

VI. History:

- A. Relation of food to world's war.

A correlation as outlined would arouse a keen interest in school work and would at the same time impart facts concerning food which would be of decided educational value.

SUGGESTED PLAN FOR CONDUCTING THE WORK

To be a success, the plan must have the cooperation of all people in the community—the parents, the teacher and the pupils. To relieve the teacher—though she must approve all plans and supervise work—some method similar to the following plan may be adopted:

I. One older pupil in charge for a week, with two or three assistants responsible for each day's work.

II. A committee appointed in charge and to decide:

- A. Which pupils bring supplies.
- B. Which pupils do the work, as preparing the food, serving, and washing dishes.

III. A committee to take entire responsibility for a week.

In any case the schedule for hot dishes should be announced on Friday for the following week. This should be written on the blackboard so that the children may copy and take home. Pupils should be encouraged to prepare the dish at home and report each success or failure to the teacher. (School credit may be given for home work.)

POSSIBLE WAYS OF SECURING SUPPLIES

I. Each child may bring food material as directed by those in charge.

II. Each home in turn may furnish enough for the school as requested by those in charge.

III. If funds are available, supplies may be purchased. This responsibility should be given to the pupils so far as possible.

A careful record of the supplies furnished by the children or homes should be kept that each may share alike. In case supplies are purchased, an accurate record of all money received and spent must be kept. This may be made an arithmetic lesson.

EQUIPMENT

Funds for purchasing the necessary equipment may be raised by entertainments. Sometimes donations are made by members of the community, and again the school board may find it possible to furnish the funds.

Boys and girls at school or at home may construct the table and cupboard from store boxes. A cupboard may be built and the top used for the table if large enough. Shelves may be placed on the wall and enclosed with doors for a place to keep the laundry, food materials, and the individual equipment of each child, which should be provided from home and consist of a knife, spoon, fork, cup and plate.

HOLDERS, dish cloths and dish towels made from flour sacks may be donated. Enough should be provided so that a clean set may be used each day. They should all bear the mark of the school so that they will be easily distinguished in the laundry. Arrangements for laundry work should be made with the pupils in turn, to have the weekly supply taken home on Friday and done with the family washing, provided the water supply and equipment will not warrant doing the work at school.

White oilcloth should be used on table and tacked on wall behind table and stove.

Following is a list of necessary equipment:

Cupboard	12 dish cloths.
Table	12 holders.
12 dish towels	

Individual equipment furnished from home:

Cup	Fork
Plate or saucer	Spoon.
Knife	

LIST OF EQUIPMENT

(Bozeman prices on December 5, 1918)

1 two-burner oil stove, Blue Flame.....	\$12.50
1 oven to fit one burner (if possible).....	4.00
1 dish pan (blocked or retinnned).....	2.50
1 drain pan (stamped or tin dishpan).....	.50
1 granite kettle, 6 qt. size.....	1.25
1 granite kettle, 8 qt. size.....	1.45
2 covers to fit kettles, 25-35c each.....	.70
1 colander (tin)	.20
1 tray (18x24-in.)	.45
1 spatula (25c to 75c).....	.75
2 tablespoons	.10
2 teaspoons	.05
1 kitchen knife	.15
1 kitchen fork	.15
1 measuring cup (glass or aluminum).....	.20
1 can opener	.20
1 breadknife	.45
1 egg beater (Dover).....	.35
1 paring knife (15-35c).....	.15
1 potato masher	.20
1 soup ladle (half pt.).....	.25
1 wooden spoon (stirring).....	.15
1 sauce pan (3 qt. size) granite.....	.70
1 asbestos mat	.10
1 double boiler (3 qt. size) granite.....	2.50
1 tea kettle, nickeled copper.....	2.50

\$32.50

White oil cloth.

ABBREVIATIONS

c.—cup	gal.—gallon
tbsp.—tablespoon	oz.—ounce
tsp.—teaspoon	lb.—pound
pt.—pint	f. g.—few grains.
qt.—quart	

MEASUREMENTS

All measurements are level. Fill spoon or cup more than full, then level with spatula or case knife. In measuring $\frac{1}{2}$ teaspoon or $\frac{1}{2}$ tablespoon, first measure one level teaspoon or tablespoon, then divide in two lengthwise and scrape out half of the portion. To measure $\frac{1}{4}$ teaspoon or tablespoon, divide the half measure crosswise and scrape out $\frac{1}{2}$, and to measure $\frac{1}{8}$ divide the $\frac{1}{4}$ crosswise.

The standard measuring cup holds one-half pint.

Table of Weights and Measures

3 tsp.—1 tbsp.	4 tbsp. flour—1 oz.
16 tbsp.—1 c. (dry material)	2 c. granulated sugar—1 lb.
12 tbsp.—1 c. (liquid)	2 c. butter—1 lb.
2 c.—1 pint	4 c. flour—1 lb.
2 tbsp. sugar—1 oz.	2 c. chopped meat—1 lb.
2 tbsp. butter—1 oz.	

This course is planned in a series of ten lessons with the idea in mind that one will be presented each week. Previous lessons may be used if desired in case the new lesson does not offer sufficient suggestions for the week.

REFERENCE FOR LITERATURE**BOOKS**

Food and Health—Kinne & Cooley; Macmillan Co., Chicago or New York.

A Study of Foods—Wardall & White; Ginn & Co., Columbus, Ohio.

Food Products—Sherman; Macmillan Co.

Farmers bulletins are obtained free of cost from the Division of Publications, United States Department of Agriculture, Washington, D. C. The request may be addressed to the United States Senator or Representative from your district.

FARMERS' BULLETINS

No.

- 142. Principles of Nutrition and Nutritive Value of Food.
- 808. How to Select Food. I.
- 817. How to Select Food. II.
- 824. How to Select Food. III.
- 375. Care of Food in the Home.
- 121. Beans, Peas, and Other Legumes as Food.
- 256. Preparation of Vegetables for the Table.
- 293. Use of Fruit as Food.
- 565. Cornmeal as a Food and Ways of Using It.
- 332. Nuts and Their Uses as Food.
- 298. Value of Corn and Corn Products.
- 295. Potatoes and Other Root Crops as Food.
- 249. Cereal Breakfast Foods.
- 535. Sugar and Its Value as Food.
- 128. Eggs and Their Value as Food.
- 363. Use of Milk as a Food.
- 413. Care of Milk and Its Use in the Home.
- 34. Meat, Composition and Cooking.
- 391. Economical Use of Meat in the Home.
- 183. Meat on the Farm.
- 389. Bread and Principles of Bread Making.
- 182. Poultry as Food.
- 166. Cheese Making on the Farm.
- 241. Butter Making on the Farm.
- 85. Fish as Food.
- 435. Market Classes and Grades of Meat.
- 255. The Home Vegetable Garden.
- 110. Rice Culture in the United States.
- 459. House Flies.
- 270. Modern Conveniences for Farm Home.
- 478. How to Prevent Typhoid Fever.
- 712. School Lunches.
- 717. Food for Young Children.
- 807. Bread and Bread Making.
- 839. Home Canning by One-Period Cold Pack Method.
- 841. Drying Fruits and Vegetables.

BULLETINS FROM STATE COLLEGE AT BOZEMAN

Bulletins and advice may be secured from the State College at Bozeman at any time.

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THE SCHOOL LUNCH

LESSON I

MILK

Milk is one of the most valuable foods for children and adults. It is one of the few food materials that contains all of the food nutrients—protein, fat, carbohydrate, minerals, water and protective substances (commonly called vitamins).

Because of the amount and nature of the protein, minerals and protective substances present in milk, it is the best food for children. Milk will meet the requirements of the child's body and furnish the life preserving substances in the dietary better than any other food. A quart of milk each day for children under twelve years of age is a safe rule to follow.

To add milk to the dietary, and to keep it from becoming monotonous, it may be made into cocoa, chocolate or combined with various foods as in making chowders.

Directions for making these dishes follow:

COCOA (For six servings)

6 c. milk	$\frac{1}{4}$ tsp. salt
6 tbsp. cocoa	$\frac{3}{4}$ c. water
6 tbsp. sugar	1 tsp. vanilla.

1. Scald milk in double boiler.
2. Measure cocoa, sugar and salt and water in sauce pan. Mix thoroughly.
3. Place over fire and boil three minutes, stirring constantly.
4. Add this mixture to scalded milk.
5. Allow to heat thoroughly in double boiler.
6. Add vanilla.

7. Beat with Dover egg beater.
8. Serve very hot.

CHOCOLATE (For six servings)

6 c. milk	$\frac{3}{4}$ tsp. salt
4 tbsp. sugar	1 c. water
4 tbsp. chocolate (unsweetened)	1 tsp. vanilla.
1 tbsp. cornstarch	

1. Scald milk in double boiler.
2. Scrape or cut the chocolate with a paring knife in sauce pan.
3. Measure cornstarch, sugar, salt and water into sauce pan with chocolate; mix well. Boil five minutes.
4. Add scalded milk and reheat in double boiler.
5. Add vanilla and beat with Dover egg beater just before serving.

POTATO CHOWDER (Six servings)

6 medium sized potatoes, cut in small cubes	1 tbsp. onion chopped (or 1 tsp. onion salt)
$\frac{1}{4}$ lb. salt pork, diced	1 qt. milk
	1 tsp. salt.

1. Cut pork into small pieces and cook in frying pan until brown.
2. Brown the chopped onion in the pork fat and transfer to large kettle.
3. Add the diced potatoes and just enough water to cover. Cook until tender but not mashed.
4. Add the milk and salt.
5. Serve hot.

CORN CHOWDER (Six servings)

Add 1 pint of corn to potato chowder in which the amount of potato is reduced one-half.

FISH CHOWDER (Six servings)

$1\frac{1}{2}$ lbs. fish (fresh, salt, canned)	$\frac{3}{8}$ tsp. pepper
4 medium sized potatoes	1 tsp. salt
1 onion, sliced (or 1 tsp. onion salt)	4 c. milk.
$\frac{1}{4}$ lb. fat salt pork	

1. Cut pork in small pieces and cook in frying pan until brown.
2. Brown the sliced onion in pork fat, transfer to large kettle.
3. Add the diced potatoes, and just enough water to cover. Cook about 10 minutes.
4. Add fish which has been removed from bones and cut in small pieces. Cover and simmer until potatoes and fish are tender, usually 10 minutes.
5. Add milk, salt and pepper.
6. Reheat and serve.

List of questions that may be assigned as part of the physiology, geography, language or arithmetic lesson as the case may be.

QUESTIONS

1. Name the food nutrients.
2. What does food do for the body?
3. Why is milk a good food for children?
4. How much milk should children drink each day?
5. What is cocoa? Where is it obtained?
6. What is the difference between cocoa and chocolate?
7. Why does cocoa thicken when cooked in water?

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THE SCHOOL LUNCH

LESSON II

MILK—(Continued)

Great care must be exercised in the care and handling of milk to keep it clean. It is such a valuable food that we cannot afford to let it become contaminated with stable dirt, flies, soiled hands, clothes, or unsanitary milk pails. Cleanliness and cold are the conditions necessary to prevent the entrance and growth of micro-organisms in milk.

Be sure the milk that is brought to school is delivered in clean pails with tightly fitting covers. Wash the pail with hot soapy water, scald thoroughly, then allow to air so the flavor of the milk to be carried in it the next day, will not be spoiled.

One excellent way to introduce milk into the school lunch is by means of white sauces that form the foundation for cream soups and are used for creamed vegetables and scalloped dishes. A white sauce is made with milk, flour and butter or other fat, seasoned with salt and pepper. The proportions of these ingredients for different white sauces are easy to remember if we use the following table:

	Butter	Flour	Milk	Use
Thin white sauce	1 tbsp.	1 tbsp.	1 c.	Cream soups
Medium thick white sauce	2 tbsp.	2 tbsp.	1 c.	Creamed and scalloped dishes
Thick white sauce	3 tbsp.	3 tbsp.	1 c.	Scalloped oysters, molding croquettes

FOR ONE CUP THIN WHITE SAUCE

1 tbsp. butter
1 tbsp. flour
1 c. milk

$\frac{1}{4}$ tsp. salt
1 g. pepper.

1. Measure flour, salt and pepper into cup or bowl.

2. Melt butter in sauce pan.
3. Add flour and seasoning, and stir until smooth.
4. Remove from fire.
5. Add the milk gradually, stirring constantly.
6. Return to stove, stir constantly, until it boils. Let boil two minutes.

(Bacon fat may be substituted for the butter when the white sauce is to be combined with a vegetable bland in flavor. Thin white sauce is used as the foundation for cream soups.)

CREAM OF POTATO SOUP (For six servings)

5 c. thin white sauce	$\frac{1}{4}$ tsp. celery salt
3 medium sized potatoes	1 tsp. chopped parsley.
2 slices onion (or $\frac{1}{2}$ tsp. onion salt)	

1. Cook potatoes in boiling salted water. (1 tsp. salt to 1 qt. water.)
2. Make 5 c. thin white sauce, according to directions given above, while potatoes are cooking.
3. Add 2 thick slices of onion (or onion salt) to white sauce. After a few minutes remove slices.
4. Keep white sauce hot in double boiler.
5. When potatoes are soft, rub through a colander or sieve. (There should be about 2 c.)
6. Add potatoes to white sauce.
7. Serve very hot.

CREAM OF PEA SOUP (Six servings)

4 c. thin white sauce	1 slice onion (or $\frac{1}{4}$ tsp. onion salt)
1 can peas	2 tsp. sugar.
2 c. water	

1. Simmer peas in 2 c. hot water 5 minutes.
2. Rub through colander or sieve.
3. Add sugar.
4. Make 4 c. thin white sauce.
5. Scald white sauce with slice of onion (or onion salt) for few minutes, remove slice.
6. Add pea pulp to white sauce.
7. Serve very hot.

(Any vegetable, as corn or celery may be used the same as peas in the directions given above. Sugar may be omitted if desired.)

CREAM OF TOMATO SOUP (Six servings)

4 c. thin white sauce	$\frac{1}{8}$ tsp. soda
2 c. tomato juice	2 tsp. sugar.
1 slice onion (or $\frac{1}{4}$ tsp. onion salt)	

1. Rub canned tomatoes through colander or sieve in order to get the juice.

2. Add sugar to tomato juice.

3. Heat tomato juice to boiling point, then add soda.

4. Make 4 c. thin white sauce while tomato juice is heating.

5. Scald white sauce with slice of onion (or onion salt) for few minutes, remove slice.

6. Add hot tomato mixture to the white sauce.

7. Serve at once.

(Why is soda added to the tomato juice before it is combined with the milk?)

QUESTIONS

1. Write a short story on "How to Keep Milk Clean."

2. Why does milk sour if kept in a warm place?

3. Why is it necessary to keep milk clean?

(Explain the growth of bacteria in milk.)

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THE SCHOOL LUNCH

LESSON III

MILK—(Continued)

In this lesson milk will be combined with food materials in creamed and escalloped dishes. To do this so the dish will be palatable one must understand the principle underlying the cooking of starch as a rather large amount of flour is used in making medium thick white sauce.

Starch must reach the boiling point at some time or other during the process of cooking. This makes it easier to digest and gives it a better flavor. Unless the white sauce boils, it will have the unpleasant, pasty flavor typical of the uncooked starch.

You notice that the directions for white sauce say that it should be stirred constantly until it boils well—and let boil two minutes. This is to insure sufficient cooking for the starch. Care must be taken so that the sauce does not scorch during preparation. This will be avoided by stirring constantly over a slow fire.

FOR ONE CUP MEDIUM THICK WHITE SAUCE

2 tbsp. butter
2 tbsp. flour
1 c. milk

$\frac{1}{4}$ tsp. salt
f. g. pepper.

1. Measure flour, salt and pepper into cup or bowl.
2. Melt butter in sauce pan.
3. Add flour and seasonings, mix thoroughly.
4. Remove from fire.
5. Add milk gradually.
6. Return to stove, heat slowly, stirring constantly until it boils well. Let boil two minutes.

CREAMED MACARONI AND CHEESE (For six servings)

1 c. macaroni broken in small pieces
 $\frac{3}{4}$ c. cheese, grated or cut into fine pieces
2 c. white sauce.

1. Drop macaroni into 2 qts. boiling salted water. Stir occasionally with a fork to keep from sticking.

2. Cook until tender. To test, remove a small piece and bite to see if free from elasticity.

3. Pour into colander and wash by pouring cold water through the macaroni in the colander, until free from stickiness.

4. Make white sauce according to directions above. Remove from fire.

5. Add grated cheese to white sauce and stir until melted.

6. Add macaroni to the sauce and reheat in double boiler.

(Care must be taken not to overheat the cheese. If overheated it becomes stringy and tough.)

CREAMED HOMINY (For six servings)

1 c. cracked hominy
2 c. white sauce
Parsley.

1. Soak hominy over night.

2. In the morning drain the soaked hominy and drop into 2 qts. boiling salted water. Let boil 30 minutes.

3. Place in double boiler and allow to cook for $2\frac{1}{2}$ hours.

4. Pour into colander and wash with cold water until free from stickiness.

5. Add to white sauce and heat thoroughly before serving.

(If parsley can be secured it may be added to this dish for seasoning.)

CREAMED RICE AND SALMON (For six servings)

1 c. rice
 $\frac{3}{4}$ c. salmon
2 c. white sauce

1. Drop rice in boiling salted water. Let boil for ten minutes, then place in double boiler and continue cooking for one hour. Drain in colander if necessary.

2. Make white sauce.

3. Add salmon to white sauce, mix thoroughly.

4. Combine salmon and sauce with rice and reheat.

(Macaroni, hominy and rice may be substituted, one for the other, in each of the above directions.)

ESCALLOPED HOMINY AND CHEESE (For six servings)

1 c. hominy (macaroni or rice may be used)
 $\frac{3}{4}$ c. cheese
2 c. white sauce
1-3 c. buttered crumbs.

1. Cook hominy as given above.
2. Prepare white sauce.
3. Grate cheese, or cut into small pieces.
4. Place a layer of cooked hominy in a buttered baking dish.
5. Add a layer of grated cheese.
6. Then a layer of white sauce.
7. Repeat layer by layer until materials are used.
8. Cover with buttered bread crumbs.
9. Bake in moderate oven until crumbs are brown and dish is thoroughly heated.

CREAMED PEAS

1 can peas

2 c. white sauce

1. Make white sauce according to directions given in this lesson.
2. Drain peas and add to white sauce.
3. Reheat thoroughly and serve.

(The liquid from the can of peas may be used for part of the milk in making the sauce. If the liquid has a strong flavor it should be discarded.)

QUESTIONS

1. Make a list of cereal grains and some food materials made from them.
2. Which nutrient is present in large amounts in macaroni, rice and hominy?
3. Why must white sauce boil for a short time during the cooking process?
4. Name several ways of using milk at home.

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THE SCHOOL LUNCH

LESSON IV

STARCH

The cereal grains and various preparations made from them constitute a large class of food materials from which starch or carbohydrate is derived. Rice, hominy, macaroni, bread, pastries, and breakfast foods are some of the products made from the cereal grains.

All cereal products are rich in carbohydrate; many are lacking in minerals and the protective substances which are abundant in milk. In preparing the cereal products for table use it is best to combine with milk in some way to add the food nutrients in which they are deficient. By adding milk the nutritive value of the dish is increased because the carbohydrate is rounded out with the protein, fat, minerals, and protective substances of milk.

Cereal products have a sweet nutlike flavor when properly cooked. This flavor is developed by long, slow cooking in a double boiler or fireless cooker after boiling for a short time, usually ten minutes, directly on the stove.

CORNSTARCH PUDDING (Six servings)

4 c. milk
1-3 c. cornstarch
 $\frac{1}{8}$ tsp. salt

2 egg whites (may be omitted)
1 tsp. vanilla
 $\frac{1}{4}$ c. sugar.

1. Mix cornstarch, salt and sugar with a little cold milk.
2. Scald the rest of the milk and stir into this mixture.
3. Cook until it boils well, stirring constantly.
4. Place in double boiler and cook for 30 minutes.
5. Remove from fire and add the flavoring and fold in the beaten whites of eggs.

6. Pour into cups to mold and chill.
7. Serve with top milk or cream.

CHOCOLATE PUDDING

Add $\frac{1}{4}$ c. of cocoa to dry ingredients in directions above, and proceed same as for cornstarch pudding.

INDIAN PUDDING (Six servings)

3 c. milk	2-3 c. cornmeal
2-3 c. molasses	2 egg yolks (may be omitted)
1 tsp. salt	2-3 c. raisins.

1. Scald the milk in top of double boiler.
2. Make a mush by adding the cornmeal, stirring constantly.
3. Boil for about 10 minutes directly on the flame. Return to double boiler.
4. Add molasses, eggs, raisins, and salt.
5. Cook for 2 hours in double boiler.

NOTE: In case egg yolks are left from cornstarch pudding, they may be used in above directions, otherwise omitted.

TAPIOCA CREAM (Six servings)

$\frac{1}{4}$ c. pearled tapioca	1-3 c. sugar
2 c. scalded milk	$\frac{1}{4}$ tsp. salt
2 eggs	1 tsp. vanilla

1. Soak tapioca 2 or 3 hours in cold water. Drain.
2. Add to milk and cook directly on stove until it boils well.
3. Place in double boiler and cook until tapioca is transparent.
4. Add sugar.
5. Beat egg yolks and whites separately.
6. Add 2 tbsp. milk to beaten yolks.
7. Pour hot mixture slowly into egg yolks, beating constantly.
8. Return to double boiler and cook until it thickens.
9. Remove from fire and add beaten egg whites.
10. Flavor with vanilla and chill.

RICE PUDDING (Six servings)

$\frac{1}{4}$ c. rice	1 tsp. salt
4 c. milk	$\frac{1}{4}$ c. sugar or $\frac{1}{2}$ c. raisins

1. Scald milk in top of double boiler.
2. Add rice and place on fire; allow to boil for a few minutes. Stir with fork to prevent sticking and scorching. Return to lower part of boiler.
3. Add salt, and sugar, or raisins.
4. Cook for $1\frac{1}{2}$ hours in double boiler.

5. Serve with cream or with a bit of jelly.

A very nice pudding may be made by cooking breakfast food with dried fruit and serving with chopped nuts and cream. Any combinations may be used.

CREAM OF WHEAT AND DATES (Six servings)

1 c. cream of wheat
3 c. water

1 tsp. salt
 $\frac{1}{2}$ c. chopped nuts.

1. Heat water to boiling point.
2. Add cream of wheat slowly, stirring all the time.
3. Let boil 10 minutes.
4. Add dried fruit.
5. Place in double boiler or fireless cooker and cook for two or three hours.
6. Add nuts just before serving.
7. Serve very hot with top milk or cream.

QUESTIONS

1. Why is it a good thing to add milk to cereal products?
2. How should breakfast cereals be cooked?
3. Make a list of foods rich in carbohydrate.
4. What is the source of starch?
5. Why must starch be mixed with cold liquid before adding to hot liquid?
6. Suggest another way of mixing starch to prevent formation of lumps.

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THE SCHOOL LUNCH

LESSON V

POTATOES

The potato is a starchy food. In addition to the starch, it contains some mineral matter. The mineral salts of the potato lie near the outer skin. Much of the mineral matter is removed by the water during the cooking process.

The palatability of the potato depends upon the cooking. To cook the potato well means to cook starch well. The potato should be dropped into boiling water and boiled slowly until tender. When well cooked the starch is dry and mealy. Overcooking impairs the flavor and causes the starch to be soggy and waxy.

Potatoes contain very little protein and fat and are lacking in the special substances that produce growth and promote health—substances that all children need especially and that should be in the diet of all people, whether children or grown-ups, if they are to remain well and strong. Milk, cheese, or eggs may be added to supply these special substances and to supplement the protein and fat which are present in potatoes in small amounts.

CREAMED POTATOES (Six servings)

3 c. potatoes (diced)	4 tbsp. flour
2 c. milk	1 tsp. salt
4 tbsp. butter	$\frac{1}{8}$ tsp. pepper.

1. Cook 10 or 12 medium sized potatoes in boiling salted water. When cold remove skin and cut in cubes.

2. Make white sauce with the milk, flour and butter according to directions in Lesson III.

3. Add diced potatoes to white sauce. Reheat thoroughly on asbestos mat or in double boiler and serve.

CREAMED POTATOES AND CHEESE

Follow above directions, but to the white sauce add $\frac{1}{2}$ tsp. chopped onion and 1 cup grated cheese or $\frac{3}{4}$ cup of finely chopped cheese.

CREAMED POTATOES AND EGGS (Six servings)

Cut 4 hard cooked eggs into one-fourth-inch slices and add to creamed potatoes.

NOTE: If an oven is available, place a layer of potatoes in buttered baking dish, then a layer of sliced eggs, and a layer of white sauce. Repeat layer by layer until materials are used. Bake in oven till heated through.

PARSLEY BUTTERED POTATOES (Six servings)

4 c. potatoes (diced) 1 tbsp. finely chopped parsley.
4 tbsp. butter

1. Pare and cut potatoes into $\frac{1}{2}$ -inch cubes.
2. Cook in boiling salted water until tender. Drain.
3. Cream the butter and add chopped parsley.
4. Add butter and parsley mixture to potatoes as soon as drained and serve.

NOTE: In case an oven is among the equipment, the following dishes may be made.

BAKED POTATOES

Wash six medium sized potatoes well with a vegetable brush. Place in moderate oven and bake until done. When tender cut open lengthwise and insert about $\frac{1}{2}$ tbsp. butter. Sprinkle with salt and serve.

ESCALLOPED POTATOES (Six servings)

10 medium sized potatoes 1 tsp. salt
2 c. milk $\frac{1}{8}$ tsp. pepper.
2 tbsp. butter

1. Pare potatoes and cut in thin slices.
2. Place a layer of potatoes in baking dish.
3. Season with dots of butter and salt.
4. Continue layers of potatoes and seasonings.
5. Add milk until it comes just to top of potatoes.
6. Bake in slow oven for $1\frac{1}{2}$ to 2 hours.

ESCALLOPED POTATOES AND HAM (Six servings)

3 potatoes 2 c. milk
1 slice ham

1. Pare and slice potatoes.
2. Cut ham into small cubes.
3. Arrange alternate layers of potatoes and ham in baking dish.

4. Add milk until it comes just to top of potatoes.
5. Bake in moderate oven for 2 hours or until tender.

QUESTIONS

1. Name 15 ways of cooking potatoes.
2. Cut some potato into small pieces and let stand in cold water. What is the white substance that collects in the bottom of the dish? Remove the pieces of potato and boil the liquid. What happens? Why does it act this way?
3. Why make potato parings thin rather than thick?
4. Suggest ways of using water in which potatoes are cooked.
- 5... Why should potatoes be cooked in boiling water?
6. Give reasons for combining potatoes with milk, cheese, eggs, and meat.

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THE SCHOOL LUNCH

LESSON VI

VEGETABLES

Vegetables are the parts of plants used for food. Some examples of these different parts are:

Bulb—onion.

Flower—cauliflower.

Fruit—tomato, cucumber, squash, string beans, egg plant, okra.

Leaf—spinach, swiss chard, lettuce, cabbage, watercress, beet greens, brussels sprouts.

Root—beet, carrot, turnip, parsnip, radish, salsify.

Seed—peas, beans.

Stem—celery, asparagus.

Tuber—potato.

The food value varies according to the part of the plant used. Roots and seeds are especially high in carbohydrate; all leaves contain the special substances that promote growth, produce health and protect the body from certain diseases; the succulent vegetables are valued chiefly for mineral matter; the legumes are important as a source of protein as well as carbohydrate. Cellulose or the framework of plants serves to give bulk to the diet. This acts as roughage for the system and so stimulates the peristaltic movement of the digestive organs.

Some vegetables may be classified according to their flavor: (1) strong juiced as the onion, cabbage, and turnip; (2) sweet juiced, as carrots, celery, and peas.

In cooking strong juiced vegetables, the object is to remove some of the flavor so it will be more pleasant. This may be done by cooking in an open kettle in a large amount of water and changing the water during cooking.

Sweet juiced vegetables should be so prepared that the flavor will be preserved. They should be cooked in a closed vessel with just enough water to cover. If any liquid is poured off at the end of the cooking process, it should be concentrated and used in the sauce or saved for soup on a later day. This liquid contains much of the mineral matter and flavor of the vegetables.

When it is necessary to change the water, as in cooking cabbage, onions and turnips, some food material that will replenish the mineral matter should be added to the dish. Milk will renew the mineral content, and supply the special growth promoting and health producing substances better than any other food.

CREAMED CABBAGE (Six servings)

1 medium size head or 2 small heads of cabbage 4 tbsp. butter or bacon fat
2 c. milk 4 tbsp. flour

1. Cut cabbage head into quarters or sixths.
2. Drop into large kettle of boiling salted water.
3. Let boil without cover 10 minutes, then drain.
4. Add a fresh supply of boiling water from the teakettle and boil slowly until tender (usually 20-30 minutes is sufficient). Drain at once. (Do not overcook.)
5. Remove the heart and cut in small pieces.
6. Make white sauce with the flour, butter, milk, and seasoning.
7. Add cabbage to white sauce, reheat thoroughly and serve.

BUTTERED CABBAGE

Cook cabbage according to directions above, season with butter, salt, and pepper.

HOT SLAW

Cook cabbage according to directions, then add $\frac{1}{2}$ c. cream, $\frac{1}{2}$ tbsp. vinegar and salt and pepper to taste.

CREAMED ONIONS (Six servings)

8-12 onions 4 tbsp. butter or bacon fat
2 c. milk 4 tbsp. flour.

1. Remove skin and drop onions into large kettle of boiling salted water.
2. Let boil without cover for 10 minutes, drain, and add a new supply of boiling water.
3. Boil slowly until they may be easily pierced with a fork. Drain at once. (When done the onions should hold their shape and have a white color.)

4. Make white sauce, using milk, butter, and flour.
5. Cut onions if necessary and add to white sauce.
6. Reheat and serve.

ESCALLOPED TURNIPS OR RUTABAGAS

turnips or rutabagas	2 tbsp. butter
1 c. crackers broken in small pieces	salt
2 c. milk	pepper.

1. Pare and cut turnips in small cubes.
2. Cook in open kettle in boiling salted water and change water during cooking.
3. Drain as soon as tender.
4. Arrange layer of turnips in buttered baking dish, add layer of crackers.
5. Season each layer with dots of butter, and sprinkle with salt and pepper.
6. Continue layer by layer until materials are used.
7. Add milk until it comes to top of materials in dish.
8. Bake in moderate oven until well heated through, and crumbs are brown on top.

CARROTS AND PEAS (Six servings)

6 carrots or $1\frac{1}{2}$ -2 c. cooked carrots	$1\frac{1}{2}$ c. medium thick white sauce.
1 small can peas or $1\frac{1}{2}$ c. peas	

1. Scrape carrots and cut in small cubes.
2. Place in kettle with just enough boiling water to cover. Cook until tender.
3. Make white sauce.
4. Drain carrots and peas.
5. Add to white sauce, reheat, and serve.

The addition of peas to the creamed carrots makes an attractive combination from the standard of flavor and color.

HARVARD SAUCE

This sauce is especially good with carrots and beets, but may be used with any vegetables.

$\frac{1}{2}$ c. sugar	$\frac{1}{2}$ c. vinegar
$\frac{1}{2}$ tbsp. corn starch	2 tbsp. butter.

1. Mix sugar and cornstarch.
2. Add vinegar and let boil well.
3. Pour over carrots or beets and reheat thoroughly.
4. Add butter just before serving.

QUESTIONS

1. Make a list of all the vegetables you know, and the parts of the plant they are.
2. What is the value of vegetables in the diet?
3. Why should the water on strong juiced vegetables be changed during cooking?
4. How should sweet juiced vegetables be prepared?
5. Name the different ways of cooking cabbage; carrots.

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THE SCHOOL LUNCH

LESSON VII

WINTER VEGETABLES

Every family should have a can of vegetables or its equivalent every day in the year. In the summer time fresh vegetables from the garden will be used every day—and enough of these garden vegetables should be canned, dried or stored so that they may be had in the winter time as well as in the summer.

It is essential to take care of the health in winter, and one way to keep the body well is to furnish it with some kind of vegetables every day. This is particularly necessary for children. The point to remember is that children need the succulent vegetables such as greens, tomatoes, peas, string beans, cabbage, celery, onions.

A generous use of vegetables the year around will help do away with the need of tonics and laxative medicines because of the power they have to regulate the body and to keep it toned up and in good working condition. Vegetables act in this way on the body chiefly because of their bulk and the minerals they contain.

Have you ever heard anyone say that the body needs a tonic in the spring, that sassafras tea is good for the blood, or that sulphur and molasses should be taken in the spring to thin the blood? These are, of course, mere notions, but they may be founded on the fact that many people years ago did not use vegetables in winter and, after several months of a meat and potato diet, their bodies suffered from vegetable starvation.

All greens or leaves of plants, e. g., spinach, swiss chard, beet tops, sugar beet tops, sour dock, mustard, lambs quarter, lettuce, cabbage, water cress, dandelion, endive, celery, supply the body with vitamins. These are the special growth promoting and health producing substances. Such vegetables are also important as a source of iron for the body. Iron constitutes part of the red blood cells and must be supplied by the food before they can be formed. If iron is lacking, the disease anemia develops.

Without vegetables in the winter time the body is likely to become run down and the state of health will be poor when spring comes or until vegetables are used again.

The best way to preserve greens for winter use is to can them in the summer time. Peas and string beans are good either canned or dried; cabbage, celery, onions, and the root vegetables, such as carrots, beets, turnips, parsnips, are easily preserved for winter use by proper storing.

These canned, dried, and stored vegetables have practically the same food value as fresh ones and should constitute part of the daily meals of school children.

After dried vegetables are soaked several hours or over night, they may be cooked just like fresh ones. The canned product is already-cooked and only needs reheating and seasoning. All that the stored vegetables need is crisping in water before cooking, otherwise they are handled the same as the vegetables fresh from the garden.

The following directions are suggestive and may help in the use of canned and dried products.

CANNED SPINACH OR OTHER GREENS

Spinach Greens with Eggs.—Heat spinach, drain and season with salt, pepper and butter. Place in dish and garnish with slices of hard cooked egg.

Spinach with Cream.—Heat spinach, drain and season with salt and pepper. Place in dish and add $\frac{1}{2}$ cup of boiling cream.

Spinach with Stock or Gravy.—Place three tablespoons butter in frying pan; when melted add chopped spinach, cook three minutes. Sprinkle with two tablespoons flour, stir thoroughly and add one cup stock or milk, cook five minutes.

Spinach with Egg Sauce.—Heat spinach, drain and season with salt and pepper. Put in dish and pour over sauce made by adding the finely mashed yolks of hard cooked eggs to drawn butter.

Spinach Loaf.—Drain spinach, add salt, pepper, $\frac{1}{2}$ cup cheese and enough bread crumbs to shape into a loaf. Bake in oven until heated through and beginning to brown.

NOTE: Cheese is a nice addition to any green. It also combines nicely with creamed or escaloped cabbage and cauliflower.

DRIED APPLES (Six Servings)

1½ cups apples

Sugar to season

2 or 3 cups warm water

Soak apples in warm water 3 hours. Cook slowly until tender. From 15 to 30 minutes is usually sufficient. The time depends on the variety of apple used. Add the sugar just before removing from fire. Some apples require very little sugar. Any other dried fruit may be used in the same way.

DRIED CORN (Six Servings)

1½ cups dried corn

1½ tsp. salt.

4½ cups warm water

Soak corn in warm water 4 hours. Cook slowly until tender,

about 1 hour, add salt during cooking; then season in one of the following ways:

1. 2 tbsp. butter.

2. Top milk or cream, amount depending upon amount of liquid on corn.

3. Medium thick white sauce, using the liquid on the corn as part of the milk in the sauce.

4. Scalloped Corn: Arrange alternate layers of cooked corn and cracker crumbs in a baking dish. Season each layer with butter, salt and pepper. Add milk until it comes to the top of the materials in the dish. Bake until the dish is heated through and crumbs are browned on top.

5. Corn Pudding:

1 cup cooked corn

1 cup milk

1 egg

$\frac{1}{4}$ tsp. salt.

Make custard with the egg and milk; then pour over corn and bake in oven until the custard is cooked.

6. Corn Soup.

7. Corn Chowder.

NOTE: Canned corn may be used in the directions given above as well as the cooked dried corn.

BAKED BEANS

2 cups beans—navy, kidney, or pinto

$\frac{1}{2}$ lb. fat salt pork

$\frac{1}{2}$ tsp. salt

Water

3 tbsp. molasses

Soak the beans 10 to 12 hours or over night in cold water. In the morning drain and add fresh, cold water and cook slowly $\frac{3}{4}$ to 1 hour. Pour off water and put beans into pan or jar. Bury in beans the fat salt pork. To $\frac{1}{2}$ cup boiling water add $\frac{1}{2}$ tablespoon salt, 3 tablespoons molasses, and pour over beans. Add enough more boiling water to cover beans and add more if needed during cooking. Cover the bean jar and bake slowly for 6 to 8 hours or cook in fireless cooker over night. Mustard may be added if the flavor is desired.

DRIED STRING BEANS

Soak dried beans over night in three or four times their bulk in water. In the morning, drain and add boiling water, salt and small bits of bacon or salt pork. Cook until tender two or three hours. If desired, leave out the bacon or salt pork and serve with white sauce when tender.

LIMA BEANS

1 cup or $\frac{1}{2}$ lb. dried Lima beans

2 tbsp. butter

3 cups water

$\frac{1}{2}$ cup top milk or cream.

1 tsp. salt

Soak beans over night. In the morning, drain and cover with boiling water. Simmer slowly $1\frac{1}{4}$ to 2 hours, add salt during cooking and more water as needed. Let the water cook down so the

beans are about dry when tender. Add the milk and butter. Boil up once and serve. If cream is used, the butter may be omitted.

QUESTIONS

1. What do vegetables contain that the body needs?
2. How can we be sure of having vegetables for winter use?
3. Which would you rather do—take medicine to help make you well, or eat vegetables to keep you well?
4. For which mineral is spinach especially valuable?
5. How do greens differ from other vegetables in food value?
6. Why do dried fruits and vegetables not spoil?

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THE SCHOOL LUNCH

LESSON VIII

EGGS

Have you ever thought of what an egg is? You have all seen little chickens and you know that they are formed from eggs. We have all watched them tumble and roll out of the egg shell at the end of the hatching period with perfectly formed bodies of blood, muscle and bone. This shows that everything is present in the egg that is necessary to build the body.

Eggs contain the food nutrients that the growing bodies of boys and girls need. They are important as food for both children and adults. They contain protein, fat, and minerals, and the special substances that maintain health and promote growth.

The protein is the material that thickens or coagulates when the egg is cooked. It is found in both the white and yolk. We do not need to use eggs and meat in the same meal because they are both rich in protein.

Minerals, fat and the special substances are more abundant in the yolk than in the white. For this reason the yolk has greater food value than the white of the egg. Iron is one of the important minerals found in eggs. The red blood cells will not be formed if iron is lacking in the diet and the body will be in a poor state of health.

The chief point to remember in cooking eggs is to use a low temperature so the protein is not toughened. If eggs are cooked in boiling water or very hot fat, the protein becomes very tough and is hard to digest.

Try the following experiment to see what happens when protein foods are boiled:

Choose two eggs of equal size and temperature. Drop one into

a kettle of boiling water; let boil ten minutes. Keep the water bubbling and jumping all the time. Drop the other egg into a kettle of water at simmering temperature; let cook at simmering temperature for 45 minutes. Be careful that the water does not bubble. Place kettle on asbestos mat to control the temperature or pull to back of stove. When eggs are cooked, compare by biting a portion of the white and by stretching or pressing between the fingers.

SOFT COOKED EGGS

Drop eggs into kettle of water at simmering temperature. Cover closely and allow to cook for 8 or 10 minutes. Remove as soon as time is up. Break egg into cup and season with salt and pepper.

POACHED EGGS

Break each egg into a cup or small dish. Drop into pan of hot salted water. Cook in water below boiling point until eggs may be lifted out with a spoon. Place egg on toast and serve at once.

CREAMED SCRAMBLED EGGS (Six servings)

6 eggs
2 tbsp. fat

1½ c. medium thick white sauce
salt and pepper.

1. Make white sauce.
2. Break eggs into bowl and add salt and pepper.
3. Melt fat in sauce pan.
4. Add the unbeaten eggs and seasoning to melted fat.
5. Cook until of creamy consistency, stirring and scraping from bottom of pan.
6. Add to white sauce.
7. Serve on toast.

HARD COOKED EGGS IN CREAM SAUCE (Six servings)

6 eggs

1½ c. medium thick white sauce

1. Place kettle of water on stove.
2. Drop eggs into water at simmering temperature.
3. Place on asbestos mat to prevent boiling.
4. Cook at simmering temperature for 45 minutes.
5. Make white sauce.
6. Remove shells from eggs.
7. Cut into halves or quarters and add to white sauce.

SCALLOPED EGGS (Six servings)

6 eggs

1½ c. medium thick white sauce

1. Cook eggs in hot water for 45 minutes. Do not let water bubble.
2. Make white sauce.
3. Cut eggs into small pieces.
4. Place layer of eggs in buttered baking dish.
5. Add a layer of white sauce, then a layer of eggs, and white sauce again until materials are all used.
6. Cover with buttered bread crumbs.
7. Bake in moderate oven until crumbs are brown.

NOTE: For variety, scrambled, hard cooked, or poached eggs may be served in tomato sauce.

TOMATO SAUCE

Rub tomatoes through sieve. To each cup of juice use 2 tbsp. butter and 2 tbsp. flour. Prepare same as white sauce.

SOFT CUSTARD (Six servings)

3 c. milk	3 tbsp. sugar
3 eggs	$\frac{1}{2}$ tsp. vanilla.
few grains salt	

1. Place milk in top of double boiler to scald.
2. Beat eggs in bowl.
3. Add sugar and salt to beaten eggs.
4. Gradually add the scalded milk to the beaten eggs, stirring constantly.
5. Return to double boiler and cook, stirring all the time, until mixture thickens and a coating is formed on the spoon.
6. Flavor with vanilla.
7. Pour into cups and chill.

NOTE: If custard is overcooked it will have a curdled appearance. This may be partially overcome by beatnig with a Dover egg beater.

Soft custard makes a nice sauce for junket or cornstarch pudding.

BAKED CUSTARD (Six servings)

3 c. milk	3 tbsp. sugar
3 eggs	few grains salt
nutmeg	$\frac{1}{2}$ tsp. vanilla.

1. Beat the eggs and mix with sugar and salt.
2. Add milk and vanilla.
3. Pour into cups and sprinkle with nutmeg.
4. Set cups in pan of warm water and bake in slow oven.

NOTE: To test custard insert spatula or knife; if it comes out clean and dry, the custard has finished cooking and should be removed at once.

Custard will be watery if cooked too long or at too high temperature.

APPLE CUSTARD (Six servings)

Place baked apples in dish.

Serve with soft custard.

QUESTIONS

1. Why do growing boys and girls need eggs?
2. What difference is there in the food value of the yolk and the white?
3. Why is it not necessary to use eggs and meat in the same meal?
4. Why should eggs be cooked at a low temperature?
5. How can we keep custards from curdling or becoming watery?
6. Give a list of ways of cooking eggs.

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Montana State College of Agriculture and Mechanic Arts and the
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THE SCHOOL LUNCH

LESSON IX

MEAT

Meat is the flesh of animals used for food. This includes beef, pork, veal, mutton, poultry, fish, and wild game.

Meats of all kinds are rich in protein. It is valuable food for building of tissue and because of the presence of fat in rather large amounts it acts as fuel for the body.

The protein is held in the muscle fibres or tubes that make up the lean part of the meat. When meat is cooked, the protein coagulates like the protein in eggs, and gives the meat a grayish color.

Like eggs, meat should be cooked at a low temperature so the protein will not be toughened. The problem in cooking tough meat is to remove the connective tissue that holds the fibres together and to make or keep the muscle fibres tender. This may be done by long slow cooking in water or some other liquid. The fireless cooker is splendid for this purpose.

In order to keep the meat from becoming tasteless, it is browned in a small amount of fat before the water is added. This helps to retain the juice and flavoring substances of the meat and develops an agreeable flavor that everyone likes.

The following directions for brown stew show the method to use in cooking tough meats:

BROWN STEW (Six servings)

$\frac{1}{2}$ - $\frac{3}{4}$ lb. tough meat (neck, chuck, round	flour
1 tsp. salt	1 potato
$\frac{1}{8}$ tsp. pepper	1 c. celery
2 c. water	$\frac{1}{2}$ c. cabbage
	1 small onion.

1. Cut meat into cubes.
2. Sprinkle with salt and pepper.

3. Roll in flour.
4. Brown in hot fat, preferably suet.
5. Add hot water to meat when well browned on all sides.
6. Let boil up once, then place in double boiler or in fireless cooker.
7. Cook until well done,—it will require 3 or 4 hours.
8. Cut the vegetables into small cubes, cook in boiling salted water until tender.
9. Combine vegetables with stew, let cook for a few minutes.

NOTE: Any vegetables may be used in the stew. Tomatoes make a nice variation. The meat may be served without the vegetables if desired.

Pot roasts, Swiss steaks, and old chicken, are prepared in the same way as the meat for the brown stew. The general method is to roll the meat in flour, brown in a small amount of fat, and after browning add enough water or other liquid to cover. Cook slowly until tender.

CREAMED SALMON (Six servings)

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| 2 c. salmon (canned) | 2 c. medium thick white sauce |
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1. Flake salmon into pieces with a fork.
 2. Make white sauce according to directions in Lesson III.
 3. Add fish to white sauce, cook long enough to heat thoroughly.

NOTE: Any left over cooked fish may be used in the above directions. Hard cooked eggs cut into small pieces may be combined with the fish and white sauce.

BAKED SALMON AND PEAS (Six servings)

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| 1 can salmon | 2 c. medium thick white sauce. |
| 1 can peas | |
1. Make white sauce. The liquid drained from the peas may be used with enough milk to make 2 c. for the white sauce.
 2. Add peas and salmon to the sauce.
 3. Put in a baking dish.
 4. Cover with buttered crumbs and brown in the oven.

CREAMED DRIED BEEF (Six servings)

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| ¼ lb. dried beef | 2 c. medium thick white sauce. |
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1. Shred the dried beef. If very salty, pour hot water over it and leave stand 5 minutes. Drain.
 2. Make white sauce.
 3. Add beef to white sauce.
 4. Serve on toast.

NOTE: If desired, the beef may be browned in butter before adding to white sauce. Cooked chicken, pork, beef, or veal could be used in place of dried beef.

SALT PORK AND GRAVY (Six servings)

$\frac{1}{4}$ lb. salt pork (sliced)

2 c. milk.

1. Broil salt pork in hot frying pan until crisp.
2. Make a gravy or white sauce from fat left in frying pan, using 4 tbsp. of flour and 2 c. milk.
3. Pour over salt pork and serve very hot.

NOTE: If pork is very salty, pour hot water over it and let stand 5 minutes, then drain.

QUESTIONS

1. What food nutrients does meat contain?
2. Name six meat substitutes. Why may they be used in place of meat?
3. Why should meat for brown stew be coated with flour and browned before water is added?
4. Give the method for cooking a tough steak. A pot roast.
5. Tell why a simmering temperature is used for cooking meat.
6. What is the advantage in using a double boiler or fireless cooker for tough meats?
7. Why is it a good thing to combine potatoes with meat? Rice with meat?

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HOW TO MAKE AND USE A FIRELESS COOKER

LESSON X

The fireless cooker is easily made and costs little. It makes school lunch work easier. An additional advantage is that it often produces more palatable food. Can your school afford to be without one?

MATERIALS NEEDED FOR THE FIRELESS COOKER

Outside Container: Use any one of the following:

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| a. Any tightly built box | d. Candy bucket |
| b. Old trunk | e. Lard pail |
| c. Small barrel | f. Garbage can. |

The container must have a closely fitting cover and must allow for three inches of packing around the well—top, bottom, and sides.

Suggested dimensions for the outside container are 15 inches square and 16 inches high.

2. Packing Material: Select anything that will pack together closely and that is a poor conductor of heat, such as:

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| a. Tightly crumpled newspaper | d. Ground cork |
| b. Shredded asbestos | e. Excelsior |
| c. Mineral wool | f. Hay or straw. |

3. Inside Container or Well: This may be any straight sided metal or enamel bucket provided with a closely fitting cover that will retain the steam, and should be of such a size that it will allow 3 inches of packing around it. A straight sided bucket 9½ inches in diameter and 10 inches high makes a well of convenient size and is the right size for an outside container 15 inches square and 16 inches high.

4. Collar of the Well: Use one of the following:

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| a. Cardboard | c. Wood. |
| b. Asbestos | |

5. The Cooking Vessel: This may be any kettle with a tightly fitting cover, that fits into the well closely yet slips in and out easily.

Kettles especially made for the fireless cooker are on the market. A kettle $6\frac{3}{4}$ inches deep and $8\frac{1}{2}$ inches in diameter fits in a well that is 10 inches deep and $9\frac{1}{2}$ inches in diameter and allows space for the use of two soapstones.

6. **Cushion or Pad for Lid:** Any heavy cloth and packing material may be used.

7. **Radiator:** This may be anything that will hold the heat, as

- a. Soapstone
- b. Brick
- c. Flat stone

- d. Stove lid
- e. Piece of iron.

TO MAKE THE FIRELESS COOKER

Line the outside container with heavy paper or asbestos. Pack into the bottom of this lined container 3 inches of packing material, tramping or pounding it in with a piece of wood.

Cover the bottom of the bucket that will constitute the well with two layers of sheet asbestos. Then wrap it so there is one layer of sheet asbestos all around it. This covering of asbestos makes it hold heat better and avoids danger of conflagration. Stand it in the center of outside container and pack all around it as firmly as possible the same way as the bottom was packed. The packing material should come to the top of the well, but the box or outside container will lack three inches of being full.

Cut a piece of cardboard, asbestos or wood the size of the outside container. Cut a hole in the center just large enough to fit closely over the bucket that forms the well. This collar covers the exposed surface of the packing material and holds it in place.

Make a cushion or pad 3 or 4 inches thick that will fit into the top of the cooker and completely fill the space between the top of the well and the lid of the outside container. To make this, cut two pieces of cloth the size of the outside container and put them together with a straight strip of cloth 3 or 4 inches wide. Fill with packing material. This pad should be thick enough to cause pressure when the lid is closed. Oilcloth is good material to use for the pad because it does not absorb odors so readily nor soil so easily as cloth.

Use screen door hooks and eyes to fasten the lid securely when closed.

The outside of the container may be painted to make it more attractive.

If placed on casters it may be moved easily.

Radiators maintain a higher temperature in the cooker and thus shorten the period of cooking. Some homemade cookers are used

without radiators but better results are assured with them. Soapstones may be purchased at hardware stores.

A lifter is necessary to carry the heated radiator from the stove to the cooker. A lifter for soapstones may be purchased or made at home with a piece of wire made with a loop at one end for the hand and a hook at the other end to insert in the loop on the radiator. A long button hook may be used.

TO USE THE FIRELESS COOKER

Heat the soapstone on the stove until it browns flour readily. To test, drop a few grains of flour on the stone and if it browns the flour readily it is hot enough.

Place the stone in the bottom of the well and set the kettle in which the food is cooking on top.

If two soapstones are used, put the other stone on the lid of the kettle. If there is space in the well, fill another pan or kettle with boiling water and set on top the kettle of food. This retains the heat better than air.

Food materials that are cooked in water are allowed to boil 15-20 minutes on the stove; then placed in the cooker on top of the heated radiator, and the lid of the cooker is fastened securely. The food is allowed to remain undisturbed for 6 to 8 hours or over night.

It is well to have two kettles—one small and one large, so that they will fit into the well one on top of the other. Then any amount of food may be cooked and the other kettle may be filled with boiling water. In deciding upon the size of the well allowance must be made for the thickness of the soapstones as well as the depth of the kettles.

CARE OF THE FIRELESS COOKER

Dry the well with a clean cloth as soon as food is removed. Air the pad and let the cooker stand with lid open until it is well ventilated to keep it free from odor.

DISHES TO MAKE IN FIRELESS COOKER

Use the directions in the foregoing lessons for the following dishes, except that the food is placed in the fireless cooker for the long period of cooking instead of in the double boiler or oven.

Indian Pudding
Tapioca Cream
Rice Pudding
Cream of Wheat and Dates
Brown Stew, Pot Roasts
Swiss Steaks, Chicken
Baked Beans

Dried Corn and other dried vegetables
Scalloped Corn
Corn Pudding
Scalloped Potatoes
Scalloped Potatoes and Ham
Baked Potatoes
Baked Apples.