

TEACHING NUTRITION TO ELEMENTARY SCHOOL CHILDREN

F 402

Special Investigations

in

Home Economics Education

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## TEACHING NUTRITION TO ELEMENTARY SCHOOL CHILDREN

### I. The Problem:

The purpose of this investigation is to study the nutritional needs and experiences of the elementary school children in grades three, four, five and six and to work out a practical plan for meeting these needs to develop ways to give new experiences in an interesting as well as an educational manner.

### II. The Goals:

#### A. For the teacher:

1. To understand the nutritional needs and the interests of children at the various grade levels.
2. To determine the degree of the difficulty of the problems, the materials, and the technical information for each grade level.
3. To discover activities in teaching nutrition which will maintain interest and emphasize the meaning of the learning experiences.
4. To experiment with methods of presentation in teaching nutrition at the various grade levels to learn which are most effective.
5. To focus attention on good eating habits of elementary children to improve their nutritional status.

#### B. For the Pupils: (General)

1. To develop an understanding of the meaning of nutrition and to recognize signs of good and poor nutrition.
2. To become actively aware of the daily food needs.
3. To develop good food habits and desirable attitudes toward food.
4. To understand that good nutrition is a vital factor in building resistance to disease, in contributing to good posture, in growth, and in building strong, healthy bodies.
5. To develop an awareness of the individual's own responsibility in creating a strong, healthy body.
6. To learn how the food nutrients function in the body.
7. To be willing to try new foods and foods prepared in different ways.
8. To create an interest in learning to like all foods and in overcoming food prejudices.
9. To understand that often less familiar foods are good once they are tried, and to refrain from condemning untried foods.
10. To learn that pleasant surroundings and attractive methods of serving foods affect the appetite.
11. To realize that one's feelings and emotions affect the digestion of food.
12. To understand the simple processes of digestion.

13. To appreciate the importance of cleanliness and proper care in the handling of food.
14. To appreciate the knowledge and labor of the many persons involved in providing our vast food supply.
15. To share with others in the home knowledge gained through the study of nutrition.

### III. The Findings:

- A. I found many problems as I came into a new situation where home economics had been offered from the third grade level up, but where few records were left giving information of what had been taught.

The girls above the third grade level had the idea that they knew just about all that was important to know about nutrition because they had been exposed to it in the years before. What they did possess, however, was familiarity without the knowledge behind it. They did not want to study nutrition. One of my biggest problems, therefore, was to find new and interesting approaches to the nutrition story.

Most of the girls are from homes in which the standard of living is high, education and social activities are of great importance and there is very little evidence of lack of money for essential things. Most of the parents are professional people. Many parents have shown much interest in the school activities of their children.

Check lists, conversations, daily records and observations revealed that good foods in rather generous varieties are available for most of the children, but that they were not always eaten. One mother, a graduate home economist, remarked, "We talk food all the time at our house, but it doesn't do much good."

Check lists of foods consumed over a period of three to five days revealed low scores in many instances and few high scores.

One small girl was observed sucking blood from a pin prick on her arm. Upon questioning such answers as "I like blood," "Yes, I am hungry," "Yes, I had lunch," were given. She named foods in indicate well planned meals. The same child later revealed many nervous mannerisms, such as constantly chewing on something, pencil, crayon, thread, paper, and other such items.

Most of the children do eat breakfast, some very good breakfasts and some poor. Remarks ranged from "I'm always hungry for breakfast" to "I hate breakfast." Interest in learning more about breakfasts was very low, however, interest in "cooking" was greater.

Evidences of good nutrition.

Characteristics of children who do not appear to be well nourished.

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|---|--|
| 1. Weight and height within normal range of given age group.  | 1. Excessively overweight or underweight for heights and ages.   |
| 2. Good muscle tone, firm flesh.  | 2. Poor muscle tone, soft, flabby fat, and thin and weak arms and legs.  |
| 3. Posture very good, relaxed walking and sitting straight, not slumped over.                                       | 3. Posture poor, tense, shoulders hunched forward, back curved, sitting position very poor.  |
| 4. Nerves steady.   | 4. Jittery and jumpy at sounds, cannot sit still even a short time, biting nails, pulling at clothes or hair, chewing objects, easily irritated. |
| 5. Facial expression happy, alert.  | 5. Expression of gloom or anger-antagonistic, pinched, sleepy or dull.   |
| 6. Color good, rosy cheeks and lips.  | 6. Pale color, sallow, lack of color in cheeks and lips.   |
| 7. Hair glossy and smooth, evidence of growth and life, clean scalp.  | 7. Hair dull, dry and brittle, split ends, poor scalp condition.   |
| 8. Skin smooth, free from blemishes, good color, soft.  | 8. Skin rough, cracked and dry, lesions, spotty color.   |
| 9. Teeth sound, well developed gums healthy, firm, pink.  | 9. Teeth decayed, poorly formed. Gums irritated, red, bleed easily, soft and loose from teeth.   |
| 10. Eyes bright, clear, free from irritation, expressive, wide awake appearance, easily adjust to changes of light. | 10. Eyes dull, red streaked, sore, not much expression, half closed, squinting, strained.  |
| 11. Nails well formed, good color.  | 11. Nails poorly formed, split, bitten off perhaps due to nervousness.   |

## SUMMARY

Many of the children observed showed all the evidences of good nutrition. Braces were on teeth and there was little evidence of much decay or poor gum conditions. Hair in most cases showed good care as well as healthy texture. Eyes were usually bright and full of expression, the occasional remarks of "that hurt my eyes" were heard.

Some of the evidences of poor nutrition were found in excessive weight more than underweight though a few were very thin and very small. Nervousness seems to be in evidence in many children--tense-ness seems to be in evidence in many children -- tenseness of body and expression, inability to relax or remain quiet, chewing objects, needing something to "play with." Posture when sitting was often poor but part of this was due to oversized chairs for the smaller people. Extremes in color were observed--some were very pale and had poor color. Most of the children showed a fairly healthy color however.

A third grader expressed this idea -- "A person who looks glamorous is pretty, has nice hair and skin, and doesn't have a temperature."

### IV. The Projects and Activities

#### A. Grade Three (18 girls)

##### 1. Specific Goals:

1. To develop a broad background of knowledge of food names, terms, tastes, uses, and sources.
2. To develop an awareness of the great variety of foods available.
3. To develop a desire to try new foods and overcome food dislikes.
4. To learn the purposes of food as a foundation for more detailed information in later grades.

Technical information--terms as Vitamins, Minerals, was avoided as much as possible in order to keep the information simple and to avoid "familiarity without knowledge" which had become apparent in other grade levels.

#### Cereals:

The study began in correlation with a unit on "China" in their home room, therefore rice was our first cereal to be studied. Rice was cooked and eaten in class. Some did not like it before and said so-- but they ate it with the class group. Such remarks "I don't like rice at home but this is good with chocolate milk on it" were heard. The girls helped with the cooking and serving of the rice and they even begged to help clean up. Different ways of cooking and using rice were discussed and the girls brought to school some favorite recipe booklets 5" X 8" were made to take home. The cover design consisted of letters shaped from white paper "rice grains" to spell RICE.

Actual grains of rice were observed and sampled and later compared with wheat grains. Other grains were discussed and observed. Breads of various types were displayed, discussed and sampled. The girls made cinnamon toast (a committee made the toast for the entire group).

Our first field trip to the A & P Store was made just to study the bakery department and the cereal available there.

Grade III

Milk:

On display were cans of Pet milk, Eagle Brand Milk and an empty glass milk bottle and paper carton. A discussion of various types of containers and bottle caps followed. I then asked what they saw in the glass bottle and told them to use their imagination.

The children were quite attentive as the bottle was passed to each child.

Gene saw milk, Bonnie saw milk and cream. Others saw only air, a few bubbles and streaks. One said "Central Dairy."

I next showed them a painted milk bottle which they thought was really full of milk. I carried the bottle to each table. This time they could see the cream and the milk easily, and some imagined cheese and butter.

Inside the bottle I had suspended on lengths of string, small pieces of colored paper cutout to represent bones, teeth, muscles, a head of hair, two real nails to represent toenails and fingernails, pieces of paper saying "smooth skin," "steady nerves", "vitamins", and "mineral". As each string was pulled from the bottle by a child a brief but very lively discussion followed the guessing of the meaning of each symbol or message. The symbols or keywords were listed on the board.

A milk bottle shape was drawn and cut out to make a booklet for their story of milk.

Pudding using a mix and milk was made and eaten, Junket dessert was also made from milk.

Remarks

Linda - "We don't buy our milk from any dairy in Columbia--and you can really see the cream. It goes way down on the bottle and is more yellow than that."

Elizabeth - "Milk makes strong bones."

Grade III

Cheese:

Stories of the origins of cheese of various types were told and enjoyed. On display were several different cheeses and samples of different flavors and types were tasted. Many of these were

new taste experiences especially taste with identification by a name for the cheese. We visited Krogers and the A & P Store and studied the vast display of dairy products. At one store the children were shown a huge 500 pound New York cheese which had not been entirely removed from its wooden tub packing box. They also were shown how the large cheese are cut and packaged in the store before the packages are displayed for sale. A highlight of that field trip was the samples given them by the clerks cutting and packaging the cheese.

#### Butter:

How butter is made was discussed and demonstrated with a small amount of cream in a jar. Packages were displayed. Butter and margarine were observed when the field trip was taken to observe cheese and milk.

#### Grade III.

#### Eggs:

Several children expressed dislike for eggs and of becoming tired of them whereas others, of course, liked them. In order to show variety in using eggs just in the breakfast meals I demonstrated a dozen or so ways to prepare eggs and some of the ways not to treat eggs in preparation for eating. The children were fascinated with the entire process and the results especially of the hard boiled and hard fried as compared with properly hard cooked and fried eggs. They amazed themselves by eating every bite and generally agreeing on how good they tasted.

At later times when cookies were mixed it was a great treat for the children who were chosen to break the eggs and to beat them.

#### Meat:

Much was to be learned in this area for the third graders. Our first approach was to classify the kinds of animals from which our meats come. We made large charts on newsprint using colored chalk listing each type of animal and the specific animal of value as a source of food. Pictures were later used to increase and emphasize this knowledge. "Domestic" and "domesticated" were new words for these children.

Different cuts of the various kinds of meat were next introduced. Many of these terms were familiar but the proper association was generally new. Emphasis for this was gained by use of cards of construction paper 2 X 5, a portable bulletin board and a closed cannister. The terms "Beef," "Pork", "Lamb", "Veal" were printed on separate cards then placed on the board. The names of the various cuts of meat were printed on other cards which were drawn then from the cannister and placed under the proper term. Cards misplaced were returned to the can for another trial. This was done as a game with competitive sides after it had been used by the entire group as an earlier learning experience.

A colored film strip "How to cook chicken" was shown. Pictures of meats were displayed. A trip to Krogers included a visit to the cold

room for meats and explanation of the various things they saw by Dr. Cunningham, head of the local Kroger store meat department. The children were especially amazed by the huge whole beef liver they saw.

Later the Kroger company showed a film "Never Keep a Good Steak Waiting" to a large group (The students had invited their parents). Ordinarily this would have been too long and advanced for these children but due to this study they were able to enjoy it and gain something of value from it.

### Grade III

#### Fruits and Vegetables:

In order to help clarify thinking as to which foods are fruits and which are vegetables the two groups were studied separately. Vegetables were studied then fruits, following similar activities as for the study of vegetables.

I: introduced this study by telling a riddle about a familiar vegetable. Other riddles followed then as the children's knowledge of vegetables increased they played games with riddles they made. Many new vegetables were introduced to most of the children. Some fresh vegetables were prepared and eaten. Pictures were displayed, posters made, pictures drawn and colored. Field trip to the grocery store to observe the fruits and vegetables available and to see the different forms in which these foods were available as well as how the fresh foods were kept fresh and crisp.

A vegetable salad was made in class.

A movie was shown on "California Cling Peaches."

### B. Grade Four (ten girls)

#### Specific goals:

1. To learn which foods are needed daily to make us grow, to keep warm, and keep us healthy.
2. To learn to work together in preparing simple foods.
3. To develop an appreciation of the many things to do in order to serve a meal.

These children felt that they knew almost all there was to know about what foods they should eat. They listed such items as milk, steak, potatoes, gravy, salad, dessert, orange juice, cereal, eggs, and toast.

They remembered having seen and talked about the poster "Mother Hubbard's Cupboard" (General Mills), therefore there was no desire to talk about it again. However, a note of approval was found in the suggestion to actually make a real cupboard and stock it with foods.

The shop teacher found a large packing crate and made the cupboard for us, similar in pattern to the one on the poster. The girls sanded it, painted it, drew, cutout, transferred and painted the letters "MOTHER HUBBARD'S CUPECARD" across the top. They also designed and made shelf paper for each of the seven shelves, using small drawings or caricatures of the foods from the particular shelf for the design around the name of the particular group. The term "Basic seven" was avoided for this group, but the discussion centered around the Seven shelves or groups of food. Shelf number seven was shared with a space for Mother Hubbard's dog and was labeled "For the Dog". Food cartons, cans and fresh foods or other real foods were placed on the shelves for the display

A small amount of meal planning was done by choosing foods from their Cupboard for the entire day's meals. Emphasis was placed on including something from each shelf every day in the meals. These children actually planned and prepared a breakfast for themselves, working in three families. They surprised me by finishing and being cleaned up and ready to leave by the end of the period. We had asked for them to be excused to come to Home Economics a few minutes early in order to be finished. They were so excited each had to see what each other group was doing as well as what every other girl in her group was doing. They were very proud of their achievement and in the final analysis were able to see why they had had to plan so carefully everything that was to be done. They had not been happy when they learned they could not cook their breakfast the minute they divided into family groups the week before.

Some time was spent in practicing serving foods and waiting on the table.

The girls made cookies for a class party.

The Cupboard was displayed in their class room in the main corridor of the Education Building, and pictures were in the local newspapers.

#### C. Grade Five (fifteen girls)

##### Specific goals

1. To become actively aware of the daily food needs.
2. To understand the relationship between good food habits and good health.
3. To overcome strong prejudices and accept new things.
4. To learn to prepare simple foods.

These children were very adverse to "studying about nutrition" because they too "knew so much about it already". But being an especially active group the idea of making a train that would actually roll appealed to them. "This is fun" was frequently heard.

Boxes of equal and similar sizes were found for the cars and milk bottle caps were saved for the wheels. With the help of the boys in the shop the girls cut wooden circles to fit within the bottle caps. The boys fastened these to the boxes for us. The cars were then painted various colors with tempera and a section from a notebook size chart of the "Wheel of Good Eating" was pasted on the outside of each box--now cars. The engine and the milk cars were of oatmeal boxes and were painted black and white respectively. Additional cars were the coal car, containing a box of vitamin pills, and pictures representing sunshine, exercise and fresh air; and the caboose, painted bright red containing pictures representing the jam, jelly, candy, gum, and soft drinks. The girls considered this a very important part of the train and these items very important in their diets. However, we tried to increase the emphasis on the other cars and other foods in our diets. The Basic Seven cars were filled with pictures of foods from each group. The pictures were mounted on tag board and cut with a stand or extension which was placed in crumpled paper in each car so that the pictures would stand up and could be seen above the edge of the car.

The train measured seventy-five inches long when ready to roll. The boxes were tied together with binder twine and could really be pulled along. The top on the engine was the red top from a Redi-Whip

can and the "cowcatcher" was cut from a tin can.

The girls chose the name "Tastyville Express" after much discussion. The train was displayed in our department, in the main corridor of the Education Building, in the fifth grade home room, and in the big display case during a state conference of Elementary Classroom Teachers. Pictures were in the newspapers. It will probably be used in the crippled children's clinic later.

The fifth grade girls also prepared gingerbread, hot biscuits, cinnamon toast, and muffins.

### Grade Six

#### Specific Goals:

1. To develop a better understanding of the meaning of nutrition.
2. To practice choosing foods from the Basic 7.
3. To develop an awareness of the individuals responsibility in creating a strong healthy body.
4. To understand the functions of food in the body.
5. To learn how foods are digested.

### "The Wheel of Good Eating"

These girls showed much interest in learning more about the parts of their bodies so some time was given to studying physiology by way of large charts, pictures, questions and answers. Thus the process of digestion received attention and from there we moved into our work in nutrition.

The construction of the real "Wheel of Good Eating" involved first of all a study of the Basic Seven food groups and the items to be placed on the real chart. A large circle was drawn on heavy brown paper which was mounted on cardboard and tacked onto a wooden frame. Appropriate lettering was done in ink and tempera paint on the chart and within the points of each section of the wheel. Actual foods and empty cartons and cans were collected. An ice pick was used to punchholes through the wheel and each food, can and carton was tied securely in place.

The girls helped with the construction and division of the circle but this part proved to be a bit too difficult for this group and not very interesting for them. They made their own arrangements of the food items before placing them on the Wheel.

This was displayed in their homeroom, and in the main corridor of the Education Building and pictures were in the local papers.

### E. Other suggested activities for specific food groups:

#### Milk:

1. Let milk sour to show curds and whey.
2. Make cottage cheese, butter.
3. Collect pictures of different animals which furnish milk for human use in various countries.
4. Measure and compare amount of milk different sized glasses hold.
5. Use food models and flannelgraph to show foods made from milk.
6. Make something from Eagle Brand Condensed milk.
7. Reconstitute dried milk and taste it.

8. Make cocoa from dried milk.
9. Taste fresh sweet clabber, freshly churned buttermilk.
10. Soak a chicken bone in vinegar to show what our bones would be like if they contained no calcium.
11. Prepare different kinds of milk drinks, sample them.
12. Show how to "drink a banana."
13. Make ice cream in a freezer.
14. Make junket custard.
15. Make maps of U. S., of the world, showing dairy states and nations.
16. Study picture "Woman Churning" by Millet.
17. Count bottles or cans of milk the family uses daily.

#### Meat, Fish, Poultry, Eggs

1. Collect pictures of different animals which give us meat or other food.
2. Cook eggs in different ways—wrong and correctly to show how protein is toughened by high temperature and cooking too long.
3. Figure number of eggs needed weekly for individual families.
4. Visit a poultry house to see different kinds of poultry.
5. Visit a produce house or store to see eggs being candled.
6. Visit a poultry farm if possible.
7. Set an old hen then care for the baby chicks - watch their growth and gain in weight, feather changes, etc.
8. Make a feather collection.
9. Make finger paintings of sea life.
10. Collect pictures of sea foods and fresh water foods.
11. Make a list of the ways you eat eggs for a week.
12. Display boxes of plain and iodized salt.
13. Find stories about ways of preserving meats.
14. Observe meat being cured if possible.

#### Cereals

1. Locate areas producing different cereal grains on a map.
2. Pop corn to see starch burst through shattered grain.
3. Display samples of different grains.
4. Display stalks of different grains.
5. Make breads from different cereals and flours.
6. Visit a bakery.
7. Study big products of corn. Make poster or booklet.
8. Cook a hot cereal.
9. Display breadwrappers, floursacks, cereal boxes.
10. Grind and cook some whole cereal grains.
11. Plant some grains in indoor boxes.
12. Jumble names of cereals. Make a game of figuring them out.
13. Collect recipes for using cereal products.
14. Display different forms of macaroni, noodles, etc.

#### Fruits and Vegetables

1. Plant a vegetable garden or box garden.
2. Bring to class different vegetables. Cut cross sections to see different composition as layers in an onion, skin and center or

heart of potatoes, layers of leaves growing from stem of cabbage, leaves and flowers of the cauliflower, pulp and seeds of squash, etc.

3. Bring to class different fruits. Cut open to show seed.
4. Find the star in an apple.
5. Did roots of plants we do not use for food compare with roots of plants we do use for food?
6. Care for a pet rabbit.
7. Study sources of vegetables - classify as to bulbs, roots, etc.
8. Have a raw vegetable party.
9. Learn to handle a paring knife and chopping board.
10. Make attractive arrangements of fruits and vegetables as centers of interest.
11. Use fruit and vegetable arrangements as models for drawing.
12. Learn the color families of vegetables.
13. Make a vegetable parade - making animated figures from vegetables.
14. Dramatize stories about fruits and vegetables.
15. Read story of the discovery of vitamin C.
16. Read stories of early sea voyages.
17. Bake apples, make apple sauce.
18. Make recipe books, scrapbooks of collected recipes.
19. Display pictures of fruits and vegetables.
20. Cook or prepare a less familiar vegetable in an appetizing way, to introduce the flavor and texture.
21. Contrast colors, flavors, textures in vegetables.
22. Make apple cider and apple butter.
23. Make a calendar of vegetables and fruits showing which ones are best in which months.
24. Scramble names of fruits or vegetables for a game.
25. Prepare vegetables and fruits for class demonstrations.

#### F. ADDITIONAL SUGGESTED ACTIVITIES

The same activity in most cases can be adapted for use at different grade levels. Exact repetition should be avoided if the program is a continuing one to avoid lack of interest for the children next year. Children of various grade levels tend to become unhappy if other grades are doing exactly the same thing their group is doing. For older children who have had little or no background in nutrition education the most simple experiences and experiments may be used effectively. Many activities may be adapted for use in each of the different food areas and some activities may embrace all of the food areas.

##### Suggested activities to create interest in good food habits.

1. Read or tell stories of animal experiments.
2. Have good health books and stories available.
3. Show pictures of well nourished and poorly nourished children and animals.
4. Show pictures of plants growing in good soil and in poor soil.
5. Collect pictures of healthy and unhealthy looking children.
6. Make a booklet "Food makes the difference."
7. Make cover for the booklet, write stories for it.
8. Arrange posters of food habits.
9. Dramatize food habits, give talks.

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9. Dramatize food habits, give talks.

10. Keep weight and height charts, emphasize individual gain, individual, classroom.
11. Discuss foods for gaining weight.
12. Discuss what an overweight person can do to normalize his weight.
13. Conduct animal feeding experiments.
14. Make a play cafeteria and choose meals from it.
15. Mount pictures of all kinds of foods on tag board to be used in the cafeteria.
16. Mount food pictures on cotton flannel to be used on flannel-graph.
17. Make a flannelgraph. Use food models to set up good and poor meals, between meal snacks.
18. Find out what foods Admiral Byrd took with him on the antarctic expeditions to keep the men well and warm.
19. Make paper drinking cup. Drink water from it.
20. Clean the school drinking fountains.
21. Find out how the school (and the home) is supplied with water.
22. Boil water and sample it.
23. Find out under what conditions water should be boiled for drinking.
24. Make clock faces. Put on them in red the numbers that tell meal times.
25. Make table decorations.
26. Make a tray cover.
27. Make place cards for a special occasion.
28. Practice pleasant conversation suitable for the table.
29. See films.
30. Plan ways of elimination waste.
31. Keep a record of foods eaten and score for the basic groups.
32. Start a "good breakfast club" or "clean plate club."
33. Serve Milk or fruit juice at mid morning or mid afternoon recess.
34. Set up a food display and exhibits.
35. Prepare simple foods in the classroom.
36. Use the bulletin board.
37. Write articles for the school paper.
38. Make experiments to show that plants need good soil, water, air.
39. Compare food customs in America with those in other lands.
40. Show picture of Empire State Building or other tall building - ask why it is so straight, strong, and tall.
41. Mix up various mixes of cement - Compare with bones.
42. Compare sticks - some young pliable, some old and brittle, stiff and crooked. Compare with human bodies. Give reasons.
43. Make large clay tooth in cross section - Use different colors of clay for different layers.
44. Discuss importance of teeth in good health - digestion and resulting from good or poor food habits.
45. Develop a library of materials on health and nutrition.
46. Hold parent conferences on nutrition and health needs of the individual child.

47. Have a picnic - children plan and pack own lunches.
  48. Plan, prepare and eat a good breakfast and/or lunch.
  49. Plan menus from basic food groups - from Mother Hubbard's cupboard, The Nutrition Train, or Wheel of Good Eating.
  50. Take rides on the Nutrition Train - tickets could be food pictures to fill the seven food cars or in getting ready to go they should take with them something for each car.
  51. Study individual food habits evidenced at lunch time.
  52. Compare individual breakfasts.
  53. Give assembly programs featuring various grades and student groups, outside nutrition speakers, good nutrition and health films.
  54. Carry on a poster campaign built around food needs of school and community.
  55. Place exhibits in business places.
- E. Neige Todhunter, in the University of Alabama Publication, "Everyday Nutrition for School Children", says, "Learning to select adequate meals and to like a wide variety of foods is just as much a part of the child's education as is reading and writing." Also--"Taste buds of the mouth must learn to know and respond to the flavors and the textures of different foods."

## V. THE CORRELATION POSSIBILITIES

Every area of study offers possibilities for correlation with a nutrition unit - language arts, social studies, arithmetic, fine arts, and science.

Some examples of correlated activities follow:

### Grades 3 and 4

A unit on "China" led to a study of cereals in the third grade home economics class. Rice was the first grain studied. It was cooked, eaten, compared with other grains, and recipe booklets of favorite recipes were made for the mothers. A study of other cereal grains then followed.

A unit on "Bees" was given emphasis by having a "honey tasting party" and followed by a discussion of uses of honey in food preparations.

A unit on the Netherlands and Belgium was paralleled by an extensive study of milk and milk products.

For a class party the children decorated paper napkins, and made the cookies. They worked in committees which included hostess, serving, and clean up.

### Grades 5 and 6

The culminating activity for a unit on Mexico and Latin America was a rather elaborate Mexican dinner for the entire group and several invited guests. The master of ceremonies, the waiters, the entertainers were all children - chiefly boys. The girls dressed pipe cleaner dolls as part of the table decorations and both boys and girls helped with the preparation of the food and the clean up work.

In an effort to correlate a study of foods and nutrition with a unit on "World Neighbors" foods of different countries were studied. Representative dishes were prepared and eaten by the children. The culminating activity for this unit was a program for the parents after which punch and cookies which the children had planned for and prepared were served.

### Other Possibilities

Making a grocery store is suitable for primary and intermediate elementary grades. This type of activity will embrace many areas and offer varied experiences. This will involve planning, measuring, building, gathering supplies, making arrangements and displays, making models of some foods, working together, serving others (clerk in the store) selection of foods, manners in a store, making change, managing money, and how to shop.

In the Language Arts Area - reading, language, writing, spelling - stories may be read and composed; poems, riddles, talks made; dramatizations carried out, terms related to nutrition used in spelling lessons, word meanings, use of dictionary and reference materials; and other similar activities

used effectively. Still life pictures of fruits and vegetables and other foods may be studied, arrangements made and used as models for drawing lessons. Food models may be made for display or use in the classroom grocery store or play cafeteria. Art principles may be taught and applied regarding lettering and making posters, and table decorations. Murals depicting sources of food, contributions from other nations, or some other theme relating to nutrition and the social studies or science could be made. Floral arrangements, table decorations, centerpieces, holiday decorations and similar activities may be used to emphasize the importance of attractive surroundings at meal times.

In the Science Area - science, health, agriculture, may lie the greatest possibilities of all for teaching nutrition in the elementary program. Some of the units or topics which may be correlated with nutrition are: health habits, developing a hearty body, how the body functions, prevention and control of disease and infections, micro-organisms, cleanliness. Animal life, plant life, change of seasons and how they affect changes in our food supply, story of refrigeration, story of ice as related to food preservation and transportation, plant growth as related to nutrients in the soil, balanced rations for live stock, soil erosion, cereal grains and other food crops, and many others. Various activities may be carried on in the areas such as animal feeding experiments, plant growth experiments in rich and poor soil, growth of micro-organisms and food and unclean dishes, simple chemical experiments to determine sugar and starch content of foods, and many others.

These have been a few suggestions for possibilities of correlating the nutrition unit with other areas of study. There are many more which should present themselves in the classroom situation. Children learn by doing and seeing, feeling, and tasting. Memories of such activities are longer lasting than are memories of facts told them or even facts they may read for themselves.

## VI. THE EVALUATION

In the article, "The Road Ahead in Nutrition Teaching," Janet L. Cameron states, "Children carry home much that they learn at school. Emphasis on 'take it home' might enlarge the nutrition education program considerably." (Journal of Home Economics, October, 1950, p. 641-43)

During the progress of the nutrition activities explained here I often wondered if any real progress of lasting impressions were being made or if there was any carry over value at all. Then, within a short time some parent would have a comment for me regarding the work we were doing, things the children related at home, things "Miss Hutton said," and other items regarding the children and food. New foods were tried, children helped with the shopping with a keener awareness of the different foods, and the parents were very much aware, too, that emphasis was being placed on good food habits. Months later I find that many bits of information have been retained, especially by the younger children.

One afternoon the leader of the Blue Bird group asked the girls what was the nicest thing that had happened to them that day. One little girl replied, "going to home ec."

Various techniques may be used to evaluate the nutrition program such as conferences with parents, casual conversations with parents, conversations with children, observations of food habits as shown in the lunch room and at the corner delicatessen, remarks of children as they come into the classroom, class discussions, showing pictures to the children and having them choose or identify the characteristics or items desired, free expression as in dramatizations or creative writings, simple pencil and paper tests for older children, and oral question and answer sessions.

Some examples of questions that might be asked as a device to evaluate the various goals of the program follow. The children will bring up many more questions and their answers will lead to many more. These are only examples.

### An Evaluation Device

#### Pupil Goals:

1. To develop an understanding of the meaning of nutrition.

#### Ask questions such as:

1. What does it mean to be healthy?
2. Do you believe all boys and girls are well nourished? Why?
3. How can you tell if someone is or is not healthy?
4. Have you ever been hungry?
5. How do you feel when you have not had enough to eat?
6. Does eating all you want mean that you have eaten all that you should?
7. Will eating only what you like best always make you strong and healthy?

2. To become actively aware of the daily food needs.
  1. How many glasses of milk did you drink yesterday?
  2. Have you had any fruit or fruit juice today?
  3. If you do not like milk, why drink it?
  4. Our body cannot store vitamin C. How can we be sure to get some everyday?
  
3. To develop good food habits and desirable attitudes toward food.
  1. Why should you take time to eat lunch when you have a chance to play all noon hour?
  2. If you were visiting a friend and her mother serves a vegetable your mother does not serve, what should you do?
  3. When is the best time to eat a candy bar?
  4. Do you chew with your mouth open or closed?
  5. Why should you chew food thoroughly?
  6. If you mother serves baked potatoes for dinner and you like them better mashed what would you do - refuse to eat any potatoes at all, pout and fuss because she did not fix them "your way" or eat the baked potatoes and hope she will serve mashed potatoes tomorrow.
  
4. To understand that good nutrition is a vital factor in building resistance to disease, in contributing to good posture, in growth, and in building strong healthy bodies.
  1. Are you constantly bothered with bad colds?
  2. Do you squint when you go outside to play?
  3. Which foods help us to see and help keep our eyes healthy?
  4. Will you be apt to grow tall and strong if you drink cokes and soft drinks with your meals and between meals too?
  5. Do you get tired easily when playing?
  6. Can you hike as far as the rest of the group without becoming exhausted?
  7. Does a headache always mean poor eyes.?
  
8. Does what you eat have anything to do with making you happy?
9. Show pictures of children, animals, plants. Ask children to find signs of good or poor nutrition.

5. To develop an awareness of the individual's own responsibility in creating a strong healthy body.

1. Do you have to be fat just because your mother or father is fat?
2. Does going to a beauty shop or getting a home permanent mean you will have beautiful hair that is soft and shining?
3. What can you do to help make your eyes bright, clear, and sparkling?
4. Do you enjoy playing with someone who is grouchy and easily upset?
5. When you have a choice of the food you may eat do you choose only the foods you like best?

6. To learn how the food nutrients function in the body.

1. Which foods should we eat more of to give you extra energy?
2. Why do growing boys and girls need lots of milk, cheese, and ice cream?
3. Why are sunshine and fresh air so important to us?
4. How do fruits and vegetables help keep us well?
5. "Never pass a drinking fountain without stopping for a drink." Is this a good idea?
6. Would it be a good idea to eat chicken or fish all the time and eat no other meat at all?
7. Do you think you would like a steady diet of only hot dogs or hamburgers?
8. What organ in the body is called the body storehouse? Why?
9. Is it possible to drink too much milk or eat too many potatoes?

7. To be willing to try new foods and foods prepared in different ways.

1. See goal 3, questions 2 and 6.
2. If you were eating in a hotel or cafe and the menu lists a food prepared a new way would you like to try it?
3. Have you ever eaten in a cafe that specializes in foreign foods or sea foods?
4. Do you think it would be fun to travel and make it a point to find new and interesting foods and ways of serving them?

8. To create an interest learning to like all foods and in overcoming food prejudices.

5. Have you ever eaten with chop sticks?
6. As we grow older we do not always like the same stories, games, movies or even best friends. Is it possible that our food likes may change, too, and that some foods we may not have liked last year might taste pretty good to us now?

9. To understand that often less familiar foods are good once they are tried, and to refrain from condemning untried foods.

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9. To understand that often less familiar foods are good once they are tried, and to refrain from condemning untried foods.

7. Have you tried to overcome any food dislike you have had?
  8. Have you learned to like any new foods?
  9. How can we help our food habits "grow up?"
10. To learn that pleasant surroundings and attractive methods of serving foods affect the appetite.
1. How have you tried to make meal time a pleasant time for your family?
  2. What are good topics of conversation at meal time?
  3. What do you usually discuss at lunch time?
  4. Did you ever fix a tray for a sick person?
  5. How do you serve your plate if a bowl of food is passed to you?
  6. Do you like to see food dribbled over the edge of bowls and plates?
  7. How do you feel if you go into a cafe and discover dirty tablecloths on the tables and the waitresses wearing dirty aprons?
11. To realize that one's feelings and emotions affect the digestion of foods.
1. What sort of games do you play just before or just after eating lunch or supper?
  2. Do you ever tease your little brother or sister and make him cry just before his mealtime?
  3. When mother accidentally scorches some food, do you make a fuss about it?
  4. Is at the dinner table a good place to tell everything that has gone wrong for you?
  5. If you should become hurt badly enough to cry or become upset, should you try to eat right away?
  6. Were you ever too tired to eat?
12. To understand the simple processes of digestion.
1. How do your teeth help digest food?
  2. What happens to food in your stomach?
  3. Where is your stomach?
  4. How can a glass of milk help make your fingernails?
  5. How and where do food materials become waste materials?
  6. Have you ever been sick or had a tummy ache after eating?
  7. Why should you rest a little after eating?
  8. Do you go swimming soon after eating?

9. What do the intestines have to do with the food you eat?
  10. How often should you go to the bathroom?
  11. How can "an apple a day keep the doctor away?"
  12. Did you ever watch an old cow chew her cud?
13. To appreciate the importance of cleanliness and proper care in the handling of food.
1. See goal 10, question 7.
  2. Do you ever squeeze orange juice the night before in order to hurry breakfast next morning?
  3. How must milk be cared for?
  4. Why must dairies be inspected frequently?
  5. Did you ever see live stock being vaccinated?
  6. Did you ever see the purple stamp on a piece of meat?
  7. Why was Columbus seeking a new trade route to the East?
  8. Who was Marco Polo?
  9. Why were spices so valuable and so important?
  10. Who was Louis Pasteur?
  11. What did Napoleon do that was important in the story of foods?
  12. What does "Grade A" mean on food?
  13. Have you ever heard of large numbers of people becoming sick after eating at some large gathering?
  14. Are open tin cans poisonous to foods?
  15. What is the first rule to observe in handling foods?
  16. Why should you always wash your hands before leaving the bathroom?
  17. Will scrubbing your hands before breakfast get them clean enough to last all day?
  18. Does it make any difference to foods how they are stored?
  19. Should all foods be stored alike?
  20. Why do clerks in grocery stores wear aprons?
  21. Do you like to see a butcher with a bloody apron on?
  22. Do you share your apple and candy bars with friends by giving them a bite?
  23. Do you ask your friends for a bite of their fruit or candy?
  24. Do you share or take candy or fruit from a younger brother or sister?

14. To appreciate the knowledge and labor of the many persons involved in providing our vast supply of food.

1. Where does a loaf of bread come from?
2. How does the milk get to the grocery store?
3. How can we have fresh carrots in the wintertime?
4. What has our government done to protect us in regard to canned foods? Fresh foods? Meats?
5. What do our world neighbors contribute to our pantry shelves?
6. How does our country help feed other nations?
7. How many workers do you suppose helped make and bring this candy bar to you?
8. Where do pineapples grow? Bananas?
9. How do the grocerymen keep vegetables fresh?

15. To share with the home knowledge gained through the study of nutrition?

1. Did you play the vegetable guessing game with your family? Could they guess all of your riddles?
2. Did you go shopping with mother and select a new vegetable?
3. Did you tell mother how easy it was to make cookies from condensed milk and ask her to let you show her?
4. What did your daddy say when you told him yellow sweet potatoes were good for his eyes?
5. Did you fix a table decoration? Did the family enjoy it?
6. Did you prepare a new milk drink for a bedtime snack?

Examples of Evaluation Devices:

Score Card for Good Eating Habits in the School Lunch Room

	Yes	No	Part of it
1. I ate all of my vegetables - - - - -			
2. I ate everything on my plate - - - - -			
3. I drank all of my milk - - - - -			
4. I ate all of my bread and butter - - - - -			
5. I ate my dessert last - - - - -			
6. I did not hurry as I ate- - - - -			
7. I did not talk with my mouth full- - - - -			
8. I chewed my food well - - - - -			
9. I sat up tall and straight at the table- - - - -			
10. I ate neatly and quietly - - - - -			
11. I did not chew with my mouth open- - - - -			
12. I washed my hands before going to the lunch room - - - - -			
(Other questions may be added to fit the situation or the wording changed to fit different grade levels.)			
Totals			

## Evaluation Devices for Smaller Children

Write directions on cards which the children may choose, then read and do what the card says.

### Examples:

a. Show someone:

1. How to drink from a fountain.
2. What to do before eating an apple.
3. A good way to wash your hands.
4. When the clock says lunch time at school.

b. Tell someone:

1. What to give a little cat to eat.
2. What to give a little rabbit to eat.
3. What children should eat every day.
4. What you should be sure to drink every day.

Set up food models, nutrition train, Mother Hubbard's Cupboard, or a cafeteria line and ask the child to choose his breakfast of school lunch. Ask a child to choose foods to make a poor breakfast a good one. Choose foods which are good to eat between meals and after school.

Examples of Pencil and Paper Types of Evaluation Devices

Grades 3 and 4

A. Which sentence in each pair of sentences is right, a or b?

- \_\_\_\_\_ 1. a. The best time to eat candy is between meals.  
b. The best time to eat candy is soon after a meal.
- \_\_\_\_\_ 2. a. Crackers and milk make a good mid morning lunch for children.  
b. Candy and cola type drink make a good mid morning lunch for children.
- \_\_\_\_\_ 3. a. We should eat fruits every day.  
b. We only need to eat fruits once or twice each week.
- \_\_\_\_\_ 4. a. Candy is better for us than fruit.  
Fruit is better for us than candy.
- \_\_\_\_\_ 5. a. We need three good meals every day.  
b. We need only one good meal every day.
- \_\_\_\_\_ 6. a. Children should have a pint of milk daily.  
b. Children should have a quart of milk daily.
- \_\_\_\_\_ 7. a. Vegetables help keep us well.  
b. We do not need to eat vegetables if we drink milk.
- 

B. 1. Oatmeal, rice, and cornmeal are all \_\_\_\_\_.  
bread  
cereals  
fruits

2. The brown coat of the cereal grain is called \_\_\_\_\_.  
bran  
heart  
starch  
flour

3. Grapes, apples, and tangerines are all \_\_\_\_\_.  
vegetables  
fruits  
flowers

4. Carrots, beets, radishes and parsnips are all \_\_\_\_\_.  
leaves  
stems  
roots

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b. We need only one good meal every day.
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b. Children should have a quart of milk daily.
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B. 1. Oatmeal, rice, and cornmeal are all \_\_\_\_\_.  
bread  
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fruits

2. The brown coat of the cereal grain is called \_\_\_\_\_.  
bran  
heart  
starch  
flour

3. Grapes, apples, and tangerines are all \_\_\_\_\_.  
vegetables  
fruits  
flowers

4. Carrots, beets, radishes and parsnips are all \_\_\_\_\_.  
leaves  
stems  
roots

Source Materials:

1. American Institute of Baking  
1135 West Fullerton Ave.  
Chicago 14, Illinois  
The Wheel of Good Eating  
Our Daily Food  
Good Cooks - Good Eating  
My Growth Record
2. Armour and Company  
General Offices, Union Stock Yards  
Chicago 9, Illinois  
Meat and You  
Charts  
Leaflets
3. California Fruit Growers Exchange  
Educ - Div. Sunkist Eldg.  
Los Angeles, California  
Leaflets
4. Cereal Institute, Inc.  
Chicago 3, Illinois  
A Basic Breakfast Pattern  
Teachers Source Book  
Breakfast, Why, what, How to do it
5. Food Education Bureau  
655 Chestnut St.  
Johnstown, New York  
Kit for teaching gelatine  
(Knox Gelatine)
6. General Mills  
Education Department  
Minneapolis, Minnesota  
Educational Materials such as:  
A Nutrition Guide  
A Story of Cereal Grains  
Chart of Vitamins and Minerals  
Information  
For Primary grades:  
Eat & Grow, Letters to Tony,  
Working and Playing Together,  
Health is not Just Luck,  
A day with the Wide Awakes  
For Intermediate Grades:  
Letters to Tony, Food then  
and Now.
7. National Canners Association  
Home Economics Division  
1133 20th Street N. W.  
Washington 6, D. C.  
Story of Canned Goods Charts
8. National Federation of Coffee  
Growers of Columbia  
120 Wall Street  
New York 5, New York  
Story of Coffee
9. Ralston Purina Company  
Checkerboard Square  
St. Louis 2, Missouri  
A Handbook of Cereal Grains
10. United Fruit Company, Educ. Dept.  
Pier 3, North River  
New York 6, New York  
Teaching Kit on Bananas

Source Materials: (cont.)

- |  |  |
|--|--|
| 11. United Sugar Beet Association<br>Tower Building<br>Washington 5, D. C.             | Teaching Kit on Story of<br>Sugar Beets.   |
| 12. Wheat Flour Institute of the<br>National Millers Federation<br>Chicago 6, Illinois | My Guide (for teachers)<br>Dick 's Plan and How It Grew<br>From Wheat to Flour<br>Through Silken Sieve<br>Design for Better Living<br>Recent Nutritional Surveys in<br>Newfoundland<br>A Kernel of Wheat<br>Wheat in the United States<br>We work Together<br>A Modern Health Experiment |
| 13. Wisconsin Alumni Foundation<br>Department of Education<br>Madison, Wisconsin       | Dickies Dream of the Vita-Men<br>Educ. playlet Gr. 1, 2, 3<br>Building Strong<br>Educ. playlet Gr. 4, 5, 6   |