A NUTRITION EDUCATION PROJECT FOR HOMEMAKERS AND PRESCHOOL CHILDREN

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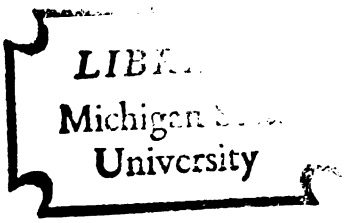

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ABSTRACT

A NUTRITION EDUCATION PROJECT FOR HOMEMAKERS
AND PRESCHOOL CHILDREN

By

Karen Lee Basen

Studies have found diets of many preschool children to be inadequate; nutrition knowledge of homemakers to be limited; and the homemakers are decision makers for the foods that are presented to the preschool children. For these reasons the target group for the nutrition education project are homemakers and their preschool children.

The paraprofessionals of the Expanded Nutrition and Family Program (ENFP), a person to person nutrition education program for low income families, have indicated the desire for additional instructional materials that could be used by the homemakers. The present nutrition education project is a series of leaflets to be used by the ENFP aides with the homemakers and their preschool children.

A total of fourteen leaflets have been developed on a variety of economical foods. Most of the foods were fruits and vegetables although important foods from the other food groups

were also included. The leaflets include nutrition and food information for the homemaker and homemaker and child food centered activities.

Two ENFP counties, Genesee and Calhoun, were selected and cooperation was gained from the staff. Seventy-five homemakers with children ages 3-6 years were randomly selected from a list compiled by the aides for the control (not receiving the leaflets) and experimental (receiving the leaflets) groups. If a homemaker had more than 1 child 3-6 years old, one child was selected for the sample.

A home interview was used to collect data on certain background characteristics and food practices of the homemakers and children, and also the consumption of and attitude toward selected foods for the project by the children.

The families in the counties had approximately five members and were usually one-parent families headed by the homemaker. The average age of the homemakers was 29 years, and most had 11 years of schooling. Over 60 percent of the homemakers said they had a course in nutrition and foods. A majority of the young children were going to school but eating their meals at home.

Most of the homemakers used food stamps during the past year. The average income per month was about $450.00. These homemakers were spending about $135.00 a month for groceries. On an average, one-third of the income was going for groceries.

The twenty foods selected for the project were divided into the groups--milk, meat, fruit, vegetable, and bread and cereals. The foods in the milk and bread and cereal groups were both familiar and well liked by all the children. The milk and meat groups had a few foods that were not as well liked and familiar as the other foods in these groups. The vegetable group had the most unfamiliar and disliked foods.

'Snack foods' were most frequently selected snack items by the preschool children. While in the grocery store, 'snack foods' and breads and cereals were mentioned most often as being selected items.

No differences were found between two preschool children in the same family, preschool children going to school and preschool children not going to school, and homemaker's educational levels as to food practices, food consumption, food attitudes, and homemaker-child food interaction. However, a difference between whites and nonwhites was found most significantly in the frequency the four selected project fruits were consumed.

The attitudes toward the food groups and food in general were directly related. The consumptions of the different food groups were also positively correlated. The variables within the homemaker-child food interaction parameter were generally related but not to attitude or consumption of the project foods.

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A THESIS

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To my parents
whose unwavering support and pride
were a constant source of encouragement

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CHAPTER I

INTRODUCTION

Nutrition education materials are lacking for the population, low-income homemakers and preschool children, where research has found many of the diets in this population to be nutritionally inadequate.

Since selecting a well-balanced diet is not an instinct and purchasing food has been complicated with the greatly increasing kinds and availability of prepared foods, people today more than ever need to be unconsciously aware of proper food choices for a nutritionally adequate diet. From recent food consumption studies and a national nutrition survey, and through the publicity of these findings by various government hearings and conferences, there has been a mounting concern over the nutritional status of the American people. When asked at the hearing before the select committee on Nutrition and Human Needs of the Senate, "Who needs nutrition education?" Dr. Ned Bayley (1972), director of Science and Education for the United States Department of Agriculture, responded "everyone needs nutrition education. There is a need for nutrition education among all income and ethnic groups, according to current research data." The 1965 food consumption

survey as reviewed by Adelson (1968) revealed that 20 percent of the people surveyed had diets that supplied less than 2/3 of the recommended dietary allowances for one or more nutrients or had 'poor' diets and 42 percent of the families with incomes under $3,000.00 had poor diets. The nutrients most frequently not meeting the recommended dietary allowances (RDA) were calcium, vitamin A and vitamin C. Schaefer and Johnson (1969) on the National Nutrition Survey mentions that only 50 percent of the diets studied could be considered adequate in all nutrients especially calories, vitamin A and vitamin C. These studies show that the food choices being made are not providing nutritionally sufficient diets and the need for nutrition education is exhibited.

Nutrition status and food habit surveys of the preschool age population also have indicated inadequate diets are being consumed. Several nutrients consistently low are iron, calcium, and ascorbic acid (Kerry, et al., 1968; Owen, 1969). In a national workshop for Practices of Low Income Families in Feeding Infants and Small Children, Eagles and Steele (1971) presented an in-depth study of food and nutrient intake of children from birth to four years of age from the 1965 food consumption survey which confirmed that intakes of the nutrients, iron, calcium and ascorbic acid, tend not to reach the RDA in diets of young children. Also, for those children with low intakes of ascorbic acid and vitamin A, milk was the food

providing the nutrients. The one food group most often not fulfilling the recommended servings was the fruit and vegetable group. Not only is improvement needed in the number of servings, but also in the selection of various fruits and vegetables within the food group. In general, the studies tend to show a need for increased consumption by some individuals of fruits and vegetables, milk and milk products, and better food sources of iron.

Wagner (1954) stated that food practices result "from repetition of experience with specific foods and the establishment of a habit for those to which one is accustomed." In a presentation to Farmer's Week 1974, Dr. Phillip White stated dietary habits are established before age 5 and that nutrition education K-12 may be too late. Kerry, et al. (1968) proposed:

> Food practices and attitudes established during the early years are believed to affect food choice and consequently nutrition status throughout life.

The early development of food habits has been supported in a thesis study on longitudinal inquiry of food habits and nutrient intake of elementary school children by Beyer (1972) who found remarkable consistency in favorite foods, least liked foods and snacking patterns of the preschool years. This suggests the importance of the preschool years as a training ground for good food practices. If it is true that the preschool years are the time for development of food practices for life, then the nutrition status studies imply that the current food practices developing are inadequate.

Lewin (1943) postulated that the manner in which food reaches the table and the psychology of the "gatekeeper" or person deciding on the choice of food were important determinants of what was eaten. The "gatekeeper" in most cases is the mother. Eppright, et al. (1970) noted that most of the meals of the preschool child were eaten in the home under the direction of the mother. Young, et al. (1956) also found that homemaker's nutrition knowledge was many times limited and faulty and seemed to be directly related to the amount of her education. A greater percentage of homemakers with knowledge about nutrition use all four food groups in their menus than homemakers with little or no nutrition knowledge. Breckenridge (1959) stated that food preferences are an important part of an individual's food habits. Results of a study by Metheny, et al. (1962) revealed that foods unfamiliar or disliked by the parents were unfamiliar to their children. These studies suggest that homemakers of young children should also be involved in nutrition education programs.

A nutrition education program for low-income families funded in 1969 by the USDA is the Expanded Nutrition and Family Program (ENFP). The ENFP has been one of the programs that have made use of paraprofessionals in the field and these nutrition aides have often stated the need for more materials to use with homemakers in the home. Also, Olsen (1967) mentions that programs which involve aides require simple materials to give to the low-income families.

In 1971 a project entitled "Innovative Approaches to Change Food Practices for Better Nutrition" was initiated for interested agricultural experiment stations in the North Central region (NC 108). The overall objectives for the project are:

A. Develop instruments and methodologies to determine personal and social factors related to food choices and eating behavior of selected populations.

B. Based on personal and social factors, devise innovative approaches to change food habits.

C. Determine effectiveness of various intervention techniques and make recommendations for nutrition programs.

This thesis study has been involved with objective B of the NC 108 project. The project hopes to achieve more effective intervention through nutrition education not only by improving the food practices through better understanding of nutrition, but also, by promoting appropriate behavioral change.

The population elected to receive the nutrition education materials are young children and the innovative nutrition education materials devised to change food habits of young children are a series of leaflets on a variety of foods for homemakers of the ENFP and their young children. This research describes the development of the nutrition education materials and also the data necessary for assessing change through the use of the leaflets.

Objectives

1. To develop an innovative nutrition education project for initiating good food practices of preschool children through the homemaker and for use by ENFP homemakers and young children in the home.

2. To assess the background characteristics of the families, certain food practices of the homemaker and young children, and the amount of the homemaker and child food interaction.
3. To quantify the food attitudes toward and food consumption of selected project foods by the young children.
4. To ascertain any relationships between the demographic characteristics of the family and the children's food attitudes, consumption, homemaker-child interaction and practices.

CHAPTER II

REVIEW OF LITERATURE

Food Practices in the United States

As presented previously the dietary practices of people are not satisfactory for optimal nutrition. In a comparison of diets in 1965 to 1955 Adelson (1968) reported an increase in the number of poor diets (less than 2/3 of the RDA for one or more nutrients) from 1955 (15 percent) to 1965 (20 percent). Adelson contributed the change to a shift in food consumption patterns. In 1965 there was a decrease consumption in all food groups except meat and corresponding to this decrease, fewer diets were meeting the allowance for calcium, vitamin A and vitamin C. Fincher and Rauschert (1969) reemphasized that only 10-20 percent of all persons young or old include dark green and deep yellow vegetables in their 24 hour food recall.

The use of convenience foods has increased. Bivens (1969) points out that in 1965 convenience foods were 30 percent of the total food purchased and 27 percent in 1955. The food management of the homemaker becomes even more difficult with the ever-increasing number of food items and factors that need consideration such as time, energy, rising food costs and

quality. In other words, shifts in food consumption toward nutritional improvement cannot be entirely accomplished by changes in income alone (Stiebeling, 1950).

On the preliminary findings of the National Nutrition Survey, Schaefer and Johnson (1969) found many poorly nourished persons. They have reported 60 percent of the children have low iron intake and about 1/3 of the children were anemic. "The most widespread nutritional problem is one of multiple deficiencies such as proteins, vitamins, minerals and calories."

A review of nutrition status studies and dietary evaluation studies by Kelsay (1969) again reported that calcium, iron, vitamin A and vitamin C did not meet the RDA and also there was a high percentage of anemia among preschool children and pregnant women. The majority of the studies reviewed had findings that revealed low intake of three or more nutrients.

The nutrition status studies and food consumption surveys in the U.S. reveal consistently that diets are not meeting the RDA for many nutrients (calcium, vitamin A, ascorbic acid, and iron) and also most inadequate diets have low intakes of more than one nutrient. The low income group has been found many times to have a higher percentage of individuals with nutritionally inadequate food intakes compared to other income groups.

Factors Influencing Food Intake

Investigators have looked at various aspects for establishing food habits. Some of the areas studied are socioeconomic

(income, education, occupation), cultural, physical, psychological, food attitudes and meaning, nutrition knowledge and food buying practices.

Food habits as reported by Livingston (1971) are formed by both objective (physical, biological and technical) and subjective (cultural, psychological and social) factors and the nutritional status of an individual results from a combination of these factors. The Committee on Nutrition of the American Academy of Pediatrics (1964) emphasized emotion, culture, and education as the main determinants of food intake but these will vary with other factors such as age, sex, environment, satiety values. In his study of changing food habits, Lewin (1943) specified the following as factors which affect food choice: values governing the choice of foods (money, health, taste and status), preferences of specific family members and concept of appropriate foods for certain meals, and also, "people like what they eat rather than eat what they like." In summarizing the factors influencing food habits of college students Brown (1967) cited parental influences on foods served, place of residence, income and size of family, influences of peers, pressures of life, influence of eating situation and living arrangements outside the home, ease with which meals can be secured and student's income and job as the most important influences on food habits.

Cultural background is one of the factors influencing the types and amounts of food we select and consume (Panghorn and Bruhn, 1970). Even more basic is that each group's culture determines what is considered food (Anonymous, 1970). Jerome (1968) studied the change of traditional meal patterns of southern born Negroes in a midwest city and found the patterns were only slightly modified suggesting a retention of the traditional meal patterns.

Allen and associates (1970) hypothesized that family commensality and nutritional factors have some direct positive effect on academic performance of high school students. Family commensality as measured by meals eaten together, attractiveness of meals, quality of cooking and who did the cooking positively correlated with certain nutritional aspects such as food likes, diet adequacy and perceived health and academic performance of the children. They concluded by implicating family commensality as a beneficial influence on the academic development and maturation of the child.

Other investigators have looked into the effect of nutrition knowledge, education, and income on adequacy of dietary practices. Young, et al. (1956) did not find a significant correlation between education or income to adequacy of the diet; although, as mentioned previously more homemakers who had some degree of nutrition knowledge had used all of the food groups than those who did not. Another study of education and nutrition knowledge of homemakers by Morse, et al. (1967) found that a

higher level of education and a course in nutrition was related to better knowledge of nutrition. Eppright, et al. (1970) reported that nutrition knowledge was related to nutritive quality of food selection. Also, when comparing the effect of education or income on diet quality, education was more significantly related. In a study of consumers and nutrition by the Pillsbury Company, Breeling (1971) observed that women are generally satisfied that they are meeting the nutritional needs of their family, but when asked to describe a nutritionally balanced menu only 50 percent came fairly close. Cornely, et al. (1963) observed that low income families in general had insufficient information about essentials of an adequate diet; however, the finding showed that families with school age children mentioned more of the four food groups and suggested that the school could be a transmitter of health education.

Another factor studied in relation to dietary practices is shopping practices. Young, et al. (1956) described the factors influencing purchases as 'what's good for them,' attitude, and cost. The younger and more educated did more advanced planning. Shopping was weekly and "for only 1/2 of the homemakers would additional money to spend mean changes in the kind and quantity of food purchased." Coltrin and Bradfield (1970) in a study of low-income, consumer buying practices, reported the majority of homemakers go to supermarkets outside low-income areas. The most frequent reasons given were price and quality. "Trends in

grocery shopping suggest an attempt on the part of the low-income individual to stretch his food bill." Another group studied by Lamkin and associates (1970) were young families. These families shopped once a week; factors affecting food selection were price, and then quality; and one-half used a shopping list and had to keep within a food budget. Their food buying knowledge suggests:

> Opportunities should be provided for better understanding of today's food market, its potential for change, and factors which determine food prices.

A few studies have dealt mainly with the effect of attitude and meanings of food. Smith, et al. (1955) investigated food aversion as related to personality which seems to show that subjects reporting disturbances in affective behavior report an unusual number of food aversions.

A variety of factors have been presented as possible influences on food intake. Some of the factors presented are physical, emotional, attitudes, cultural, environmental and socioeconomic. No clear-cut results have yet been established as to the degree of influence each of these factors play on food intake.

In particular, however, knowledge of homemakers about what constitutes an adequate diet seems to be faulty. Price, quality, preferences, and 'what's good for them' have been mentioned as influencing food purchases.

Nutritional Status and Food Habits of Young Children

During the 1950's Beal (1961) began a longitudinal study of dietary intake of children. Through the research, patterns of intake were discovered. In late infancy and the early preschool period, there is a decrease consumption of several nutrients, calcium, iron, phosphorus, vitamin A and riboflavin while the others remain constant or increase slightly. The preschool period is a time when growth rate has decreased and, therefore, requirement of nutrients for growth has also decreased. Starting in the early school years there is a slow steady rise in intake of all nutrients until adolescence.

A study on the diets of preschool children in the North Central region was conducted. The typical family consisted of parents in the late twenties or early thirties with two children, one under 6 and the other between 6-11 years. The average annual income after taxes $5,000.00 to $7,000.00 (Fox, et al., 1970). When results were analyzed as to the pattern of intake for nutrients, they were quite comparable to the results of Beal. Also, the intakes of nutrients were all found to be adequate except for iron (Fox, et al., 1971; Fryer, et al., 1971). The growth of the children was paralleled with the Iowa growth charts for height and weight (Fryer, et al., 1972).

Hardy, et al (1943) investigated the possible inadequacies in the diets of city children from different socioeconomic levels and found most of the diets inadequate in protein foods and

fruits and vegetables especially at the lower income levels. The low-income diets were again studied after the introduction of food stamps and it was discovered that "with an increase in food budget the diet patterns of most of the children showed improvement but were still below even a minimum adequate level." Consumption of fruits and vegetables was most often inadequate.

As mentioned earlier, Kerry and associates (1968) found the least well-supplied nutrients were iron, calcium, calories, and ascorbic acid. Children from low-income groups had diets that supplied more iron and thiamine and the high-income group had diets supplying more ascorbic acids and vitamin A.

Studies concentrating on low-income, preschool children (Owen and Johnson, 1969; Brown, et al., 1970; Chase, et al., 1971; Hootman, et al., 1967) have consistently revealed the nutrient intake to be below the RDA in iron and ascorbic acid and many times calcium, calories and vitamin A.

A thesis study on preschool children by Sims (1971) distinguished two types of homemakers. Children of Type I mothers (more affluent and nonauthoritarian) tended to have higher intakes of calcium and ascorbic acid whereas children of Type II mothers (lower socioeconomic status and authoritarian mother) ate more calories, carbohydrates, iron, and thiamin. A further analysis (Fong, 1972) of the dietary records of preschool children in the studies of Sims and Beyer comparing best fed (meeting RDA for at

least 6 out of 7 nutrients) to poorest fed (failing to meet 2/3 of RDA for most nutrients) indicated:

1. Poorly fed children consumed only 2/3 the number of different food items that the well fed consumed.
2. All children snacked but poorly fed children snacked about 17 percent more than the well-fed children.
3. The well-fed children consumed more milk and dairy products, vegetables, fruits, meat and protein rich foods.
4. Poorly fed children consumed more soft drink and sugar.

A study conducted by Walker and associates (1973) on the fruit and vegetable acceptance of students concluded that children who had experienced a wide exposure to fruits and vegetables seemed both to accept and to like a great variety of these foods. There was some indication that parent's knowledge of and attitude toward food and the children's behavior at the table influenced the acceptance of fruits and vegetables. Also, acceptability influenced household consumption of fruits and vegetables because most mothers tended to limit fruits and vegetables served to those acceptable to their families.

Several studies on food attitudes of children have mentioned vegetables as the most disliked food group (Dierks and Morse, 1965; Eppright, et al., 1969; Lamb and Ling, 1946). On vegetable dislikes, Eppright, et al. (1969) mentioned that the dislikes were more closely associated with those of older siblings than those of the father or of the mother and also dislikes

in general were associated more with the father than the mother and older brothers than older sisters. In meal planning husband's likes and dislikes were most often mentioned as influencing foods served. Byran and Lowenberg (1958) studied the effect of fathers on food preferences of children and it was concluded: "The father's main influence on child's food preferences appears to be in the limitation of the variety of food offered the child."

Vance (1932) and Vance and Temple (1933) investigated the order in which children finished foods and found that children ate the foods in order of preference, and also, foods served less frequently remained last on the plate.

Korslund and Eppright (1967) found children with lower taste sensitivity accepted greater number of food and had greater enthusiasm for food.

Potgieter and Morse (1955) described the food habits of children. The foods most lacking were dark green and deep yellow foods and ascorbic acid rich foods. Lamb and Ling (1946) stated that the reason for inadequacies of the diets of children was due to faulty meal planning on the part of the responsible adult rather than to a lack of positive liking of the child for these foods. Comparing vitamin A and vitamin C intakes to socioeconomic factors, Hendel, et al., (1965) found these intakes to be positively related to income, degree of urbanization and education of mothers but inversely related to number of children in the family; and also parental criticism and children's and mother's attitudes related to certain fruits and vegetables (Lund and Burke, 1969).

Metheny, et al. (1962) stressed the influence of children on the selection of food for purchase.

Nutrition status studies of preschool children have revealed that the nutrient intake for iron, calcium, ascorbic acid and vitamin A tends to be below the RDA for many of the children especially low-income children.

Food attitude studies of children indicate that vegetables were frequently named as disliked foods. Other members of the family seem to influence, to a certain extent, what foods a child prefers. Exposure to a variety of foods seems to have some influence on what foods a child accepts.

What is Nutrition Education?

Todhunter (1969) defines nutrition education as "the process by which beliefs, attitudes, and understandings about food lead to habits that are nutritionally sound, practical, and consistent with individual needs and available food resources." Food surveys have shown the need for nutrition education by all persons regardless of socioeconomic level. Findings of the recent food surveys have indicated a decline in the nutrition value of diets which "has been associated with increasing urbanization, greater mobility and altered style and manner of living all accompanying the diffusion of affluence" (Parrish, 1971). Methods of nutrition education need to develop a desire in individuals to be conscious of nutritional needs and also to apply that knowledge

(Todhunter, 1969). The two traditional approaches as explained by Poolton (1972), the basic four and the concept approach, are not enough to accomplish the desired results in nutrition education. Nutrition should be given meaning by relating nutrition to an individual's frame of reference. Another viewpoint by Sipple (1971) states it is necessary "to understand the attitudes toward food and reasons for their development" before nutrition education will be effective. Hill (1962) said the goal of nutrition education "is patterns of food selection that offers freedom for cultural and personal preferences that accommodate to various circumstances of income and environment and that are consistent with scientific principles."

Nutrition programs in government agencies have increased over the years. Robinson (1973) in a report on the Interagency Committee on Nutrition Education [concerned with promoting good food habits and nutritional well being (Leverton, 1960)] lists several of these agencies, Maternal and Child Health Services, Head Start, School Lunch Program, Food Stamp Program, Nutrition Program for the Elderly, Vocation Education and Extension Service.

Two branches of the Extension Service are the Cooperative Extension and Expanded Nutrition and Family Program (ENFP). The ENFP was designed to help low-income families improve their diets through the use of paraprofessionals. Most of the aides selected are indigenous to the community (Stewart, 1971) and have a training period usually a minimum of three weeks (Spindler,

et al., 1969). Once the initial training is completed, the aides work with homemakers on a one-to-one basis. This approach was developed for reaching the low-income people because other methods attempted have failed. Two of the methods used for evaluating homemakers are logs of progress at home visits and 24-hour food recall every six months (Spindler, et al., 1969). Several endeavors at evaluating ENFP have been made. In the findings of a pilot study for ENFP, Oliver (1967) stated 40 percent were using better food practices, 44 percent better food preparation skills and 42 percent improve eating habits of ENFP families. Also, there were improvements in other areas such as sewing and cleaning.

When working with low-income families, investigators have expressed several areas that need consideration. Two problems that need to be realized are: (1) low-income families have limited resources available to them and so wise food selections are needed, and (2) these families are difficult to reach and are most often the least competent for making such selections (Hill, 1969). For overcoming the above problems, Beaver (1965) suggested that when working with low-income families best use of available resources should be encouraged and other available resources increased.

Several investigators suggested the need of nutrition education materials for low-income homemakers (Oliver, 1967; Hill, 1962; Wang, 1971; Olsen, 1967).

> In actually working with homemakers around [sic] nutrition, aides sometimes felt handicapped by the lack of instructional materials at a level appropriate to education of homemakers they were working with (Wang, 1971).

Internationally, most countries with Mothercraft centers, nutrition training program for mothers of young children, have shown a decrease in clinical malnutrition from much of the preschool population (King, 1971). The success has been attributed to the fact that children are an important part of their society (Suter, 1971).

During the development of the Head Start program, a portion has been devoted to the development of sound nutritional habits of the child through nutrition education (Nutrition Education for Young Children, 1966). The Head Start program also includes activities with the parents, many concentrating on different aspects of foods and nutrition (Frankle, et al., 1967). An isolated study was conducted to investigate the influence of the Head Start program on the nutritional status of children (Missouri Dietetic Association, 1970). When two sequential sets of children were compared, it was found that the latter group had a lower incidence of anemia. They contributed this change to the influence of parent training and nutrition education of the first group; and since the second group had many siblings of the first group, the group was effected.

Suggestions and studies have been made on changing food habits. Craig (1971) presents a series of steps through which people proceed in accepting a new idea--awareness, interest, evaluation, trial and adoption and states the need for identifying the stage of an individual for most productive learning.

McKenzie and Yudkin (1964) described different types of chance: (1) increased consumption of a food already consumed, (2) persuasion of people to eat a food which was not previously consumed, and (3) decreased consumption of a nutritionally undesirable food; and each type of change would need to be handled differently.

A variety of nutrition education projects have been conducted within the past thirty years. Investigating the effect of various methods, lecture, group discussion, request, and group decision for changing behavior, Lewin (1943) found the group decision method to be the best. A long-term nutrition education project was conducted from 1944-1951 (Whitehead, 1952). The teachers planned nutrition units based on needs of the children from appraisal of food habits and conducted units every year at every age level. A variety of teaching methods were used and after comparing intakes of the food groups over the years an improvement was found in all food groups.

In a nutrition education project for fourth and fifth graders, thirteen daily lessons were developed with two followup sessions, again through the utilization of various teaching techniques (Baker, 1972). Although no significant improvements were found in the diets of these children, there was an indication that learning involving active participation was most effective. Glaser (1957) executed a study with the purpose to try to encourage tasting and eating of new and unfamiliar foods of nursery school children by using a variety of methods. After four months into the

project, some disliked foods were found to be better accepted. F.O.O.D. (Focus on Optimum Development) was developed recently in North Carolina based on an assumption that nutrition of children was a shared responsibility and its "aim is to demonstrate coordination of efforts of various agencies in providing health, nutrition, social and education services; functions with guidance of a joint advisory council of parents, school personnel and representatives of the major community service agencies" (Selph, 1972). A thesis study by Wattler (1972) found participation in the preparation of an unfamiliar or dislike food resulted in higher acceptance of these foods by preschool children. In working with Head Start mothers, Zimmerman and Munro (1972) presented the mothers at a group meeting with two food and nutrition problems, planning snacks and lunches of the children and developing food programs that would meet the needs of the parents. Through involvement of the homemakers in these problems, new foods were gradually introduced with positive reinforcement, and alteration in previously disliked foods were noted. Also, some improvement was made in home diets of these homemakers. After determining the diets of preschool children in two low-income housing projects another thesis study by Gray (1972) developed and presented a food and nutrition education program to mothers in one housing project for eight weeks. The food and nutrition education program consisted of fourteen lessons on various food and nutrition related topics. Comparing the scores on a nutrition and foods

knowledge test and also on the diets of the children no significant differences were found.

Several investigators have concentrated their nutrition education on increasing vegetable consumption. Harrill, et al. (1972) developed a vegetable education program using a variety of techniques for increasing the consumption of four vegetables to be presented 30 minutes before a meal to preschool children. After the lessons, the vegetable consumption increased from initial intakes and the increase in vegetable consumption was greater for three year olds than the older groups. A study by Alfond (1971) reports that education, in addition to the provision of food,was an important factor in the vegetable consumption practices of the children. An investigation of changing vegetables consumption of preschool children through behavior modification was conducted by Ireton and Guthrie (1972). Tokens were given to those children finishing their vegetables which could then be traded in for more popular desserts. From the findings they concluded that behavior modification stimulated the children to eat the vegetables. There was a decrease in consumption of vegetables after the study was terminated but was still higher than initially.

A project in Florida is researching various ways of intervening in an infant's life to break the poverty cycle by teaching mothers to teach their children through paraprofessionals, on the basis that parents are direct intervening agents in the

home. Preliminary results seem to show improvement in cognitive development (Gordon, 1970). Parents become paraprofessional teachers and others have found that one way to learn something is to teach it. Orhan and Radin (1968) reported on a home counseling center for low-income parents. In biweekly home visits parents were shown how to teach certain cognitive concepts in accordance with school curriculum and through the program they found that the children achieved higher scores on the Metropolitan Reading Test and mothers gained on the Cognitive Home Environment Scale.

Recently more government agencies involved in nutrition education have been established. ENFP and Head Start are two programs concerned with nutrition education that have involved both parents and children. Initial results seem to show some success in programs which involve both parents and children in an educational program.

Specific nutrition education studies have shown mixed results, some have been effective in improving food intake over a longer time span, others have been shown to be effective after only a short time span and some have not shown success. Most studies, however, have expressed that involvement of the target group has been beneficial.

Many investigators have stated the need for nutrition education materials that can be used with low-income homemakers.

The studies have shown that diets of individuals especially in low-income group, and also diets of preschool children,

again particularly low-income children, are not nutritionally adequate especially in the nutrient intake of ascorbic acid, iron, vitamin A and calcium. The fruit and vegetable food group quite frequently is found not to meet the recommended servings per day of many individuals.

The "gatekeeper" of food choices in the home is mainly the homemaker and that the preschool children eat most of their meals at home under the direction of the homemaker. Studies have indicated that the homemaker's knowledge of what is an adequate diet is limited.

A variety of factors have been presented as influencing food intake. Food attitudes of children have been studied more closely and there seems to be some indication that exposure to a variety of foods and other members of the family influence food attitudes.

Several recent nutrition education programs for low-income families have involved both parents and children. However, nutrition education materials for low-income families have been noted as lacking.

CHAPTER III

EXPERIMENTAL PROCEDURES

Development of the Leaflets

When developing the leaflets, two factors were considered, the topic, an economical food for each leaflet, and the audience, ENFP homemakers with preschool children. "Plentiful Foods" from the United States Department of Agriculture's publication influenced the initial concept of the leaflets. In the case of the leaflets, however, it was expanded to include activities for young children. Originally, the leaflets were established to be distributed twice a month, July through January. The selection of the foods for the leaflets were on the basis of being either a plentiful food in one of these months or a normally economical food.

The principles emphasized in the development of the leaflets were:

1. Becoming familiar with a wider variety of foods.
2. Recognizing that there are different forms in which a certain food comes.
3. Discovering how food grows and how the food eventually reaches the store.
4. Enjoying and being comfortable in trying new foods.

5. Learning that certain foods are important in building and maintaining strong bodies.

The inclusion of activities in the leaflets were to provide experiences for the homemaker and child with these principles.

The title of the final leaflets were:

Make Room for Apples
Breads--'The Staff of Life'
A Forest of Broccoli
The Pleasures of Cantaloupe
Tips about Cheese
A Cupful of Corn
Colorful Cranberries
Eggs, Good at any Meal
Don't Forget Fish
The Goodness of Milk
Let some Sunshine in your Life with Oranges
An Event for Poultry
It's Time for Winter Squash
Tasty Tomatoes

Most of the foods were fruits and vegetables because research has indicated that low-income families and young children tend to consume less than recommended amounts of the fruit and vegetable group (Eagles and Steele, 1971; Adelson, 1968; Kelsay, 1969; Hardy, 1943); however, foods from the other food groups were also included to encourage or reinforce consumption of these important foods.

The leaflets were composed of three parts. The first part included food and nutrition information for the homemaker. The first page is headed by a logo symbolizing a mother and child together. The areas usually covered in the first part were nutritional information, preparing and serving ideas, and other unique

points of interest about the food. The second part was food related activities for homemaker and child. The activities included in this part were varied; however, there usually was a recipe. Some of the other activities selected were growing plants, tasting, describing, and finger plays. The last part was a food related activity for the child with the homemaker more in a role of a teacher. Here again a variety of activities were incorporated such as numbers, colors, sequence games, vocabulary and small muscle activities (coloring, cutting, pasting). Through the use of the material the homemakers were to be the transmitter of the information by the homemaker and child activities. A copy of the leaflets may be found in Appendix B.

In December of 1973 the leaflets were presented to an easily available ENFP county, Shiawassee, in order to determine the utility of the leaflets with the ENFP homemakers. The 14 leaflets were divided among the aides and one leaflet was presented to a homemaker. The reactions of the homemakers toward the leaflets were gathered by the aides through a short open-ended questionnaire. Because of the structure of the questionnaire no objective findings were able to be determined; however, subjectively the homemakers' responses were very favorable and seem to indicate that the leaflets were usable materials for other ENFP homemakers.

Sample Selection

For testing the effectiveness of the leaflets on influencing food practices of the young children, homemakers with children ages 3-6 years were selected from 2 EFNP counties. EFNP homemakers were chosen as the population for two reasons, (1) the interest of the main investigator with EFNP; and (2) EFNP aides have shown an interest in receiving new materials that could be used with homemakers and also the aides could be used to distribute the leaflets to the homemakers. The aides also were a population over which the investigators had some control and they were also easily identified. The two counties participating in the project are Calhoun and Genesee. The counties were selected on the basis that they were within commuting distance, had a range of situations from rural to urban and a cooperative staff. Preliminary meetings were arranged with the counties to introduce and to 'sell' the project and also to gain the cooperation of the aides. The aides made a list of homemakers who met the qualifications of having children between the ages of 3-6 and would still be in the ENFP at least six months from that time. Keeping the homemakers divided according to aides, the homemakers were then randomly selected for the control group (not receiving the leaflets) and the experimental group (receiving the leaflets). A total of 75 homemakers were picked--50 for the experimental group and 25 for the control group. Also, in order to monitor the effect of the different aides, at least one control homemaker was chosen for each aide whenever possible.

If the homemaker had more than two children within the 3-6 year age range, the two youngest children were selected for the data collection sample. However, one of these two children was randomly selected when the data were calculated; and so for the final sample 75 children age 3-6 years, one per each homemaker, were used.

Data Collection Instrument

The instrument selected was a structured interview schedule to assess the variables for background characteristics, food practices and homemaker-child food interaction and also food attitude and food consumption of the 3-6 year old child in the home by the investigator before and after distribution of the leaflets. (This thesis will be dealing only with the initial interview.) A copy of the interview schedule is included in Appendix A3.

Part of the data collection instrument was already devised for use by all of the North Central region states participating in the nutrition education project. This instrument was an interview schedule on background information and certain personal and social characteristics of the homemaker and to be used only at the initial interview (Appendix A3a).

Description of Variables

The following are the groupings of variables for the project with the individual variables and the item used to test these variables.

Background characteristics: occupation (a 11*), years of school (a 6), food and nutrition course (a 10), income (a 25), food stamps (a 18, 19), amount for groceries (a 24) and food stamps (a 20), value of food stamps (a 21), number in household (a 5), children in the project going to school (b 14).

Food practices of homemaker: frequency in preparing new foods and recipes (b 1, 7).

Food practices of child: type of snacking (b 17), snack food choices--number of food groups the snacks are from (b 17), food selection in grocery store (b 20), grocery store food choices--number of food groups the grocery store food selection are from (b 20), how often children help in food preparation (b 13a), how children help in food preparation (b 13b) and in grocery shopping (b 23).

Homemaker-child food interaction: grocery store (b 18, 19, 22), food preparation (b 8, 10, 11, 12).

Food attitude of the child: general food attitude (b 2-6, 9), attitude toward specific project foods (the selected nutrition education project foods), 4 = like, 3 = neither like nor dislike, but will eat, 2 = dislike, 1 = refuse to eat:

milk group	- 8, 15**
meat group	- 3, 12, 13, 14, 18
breads and cereals	- 4, 9
fruits	- 1, 6, 11, 16
vegetables	- 2, 5, 7, 10, 17, 19, 20.

Food consumption of the child: weekly average servings (frequency) and ounces of the selected project foods.

The items in the NC 108 core items were tested previously in Iowa. The variables, food practices of the homemaker and child in the M.S.U. items, were selected from previous research (Beyer, 1972). Since it was of interest to explore the homemaker-child food interaction of these families, items relating to homemaker-child food interaction were gathered from previous research (Beyer, 1972). When no items were found, questions were developed for areas of food interaction. Because of the nature of the leaflets,

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*a are NC 108 core items (Appendix - A3a); b are M.S.U. items (Appendix - A3b).

**Appendix p. 83.

the investigators were concerned with the attitude toward the consumption of the selected project foods. Other foods were added to the list and so there would be more than one food for each food for each food group. A cross check was developed for the food consumption of twelve of the less popular foods in the list, and food models were used to help estimate size of serving.

Data Collection

The interviews took place late winter and spring of 1974. After briefly acquainting the selected homemakers with the project by the aides, appointments were made with the homemakers for the days when the investigators would be visiting the county; approximately one hour was to be set aside for the interview. Two different approaches were used to describe the project and to solicit the cooperation of the homemakers, depending on if they were in the experimental or control group (Appendix A1). Once the homemaker said she was interested in participating in the project, the investigator read the permission slip to the homemaker (Appendix A2), and then had the homemaker and aide sign it before beginning the interview. An aide accompanied an investigator at the time of the interview; however, all the interviews were conducted by the investigators.

Expected Results

Since the nature of the study was exploratory, no hypotheses were made. However, statements about the expected results among the project variables were suggested and analyzed for the basis of future research.

1. a. There are no relationships among the following variables:

   food preparation participation
   grocery store participation
   item b 1
   item b 7
   number of food groups selected for snacks
   number of food groups selected at grocery store
   general food attitude
   attitude fruits
   attitude vegetables
   attitude breads and cereals
   attitude milk group
   attitude meat group
   consumption fruits
   consumption vegetables
   consumption breads and cereals
   consumption milk group
   consumption meat group

   b. There are relationships among these variables.

2. a. When the homemaker made responses for two children in the 3 to 6 year age range, there are no differences between the two children as to food practices, food attitudes, food consumption and homemaker-child food interaction variables.

   b. There is a difference between the two children in the family as to these variables.

3. a. There are no differences between children going to school and children not going to school as to food practices, food attitudes, food consumption and homemaker-child food interaction.

   b. There are differences between the children going to school and the children not going to school as to these variables.

4. a. There are no differences between those homemakers graduating from high school and those not graduating from high school as to food attitude, food practices, food consumption and homemaker-child food interaction.

   b. There are differences between those homemakers graduating and those not graduating from high school as to these variables.

5. a. There are no race differences as to food attitude, food practices, food consumption and homemaker-child food interaction.

   b. There are race differences as to these variables.

Data Analysis

The information collected was coded and keypunched. The program forming the variables was written by a programmer from the data unit of the College of Human Ecology. Two programs were used for analysis: (1) STAT systems group at Michigan State University for frequency counts and (2) library program named MULTIVARIANCE (Scheifley, 1973) for testing hypotheses.

CHAPTER IV

FINDINGS

Characteristics of Homemakers and Children

The majority of the main food preparers (MFP, 96 percent), were the mothers. The age of the MFP ranged from 10 to 62. The youngest and oldest age representing a daughter and grandmother, respectively, who were the MFP of those families. The mean age of the MFP was 29.0 years with a S.D. (standard deviation) of 7.4 years.

The family size had a mean of 5.1 individuals and S.D. of 2.2 (Table 4.1).

Table 4.1. Family size.

Number of Persons in Households	Number	Percentage
2	4	5.3
3	14	18.7
4	14	18.7
5	20	26.7
6	6	8.0
7	5	6.7
8	7	9.3
9 - 12	5	6.7
Total	75	100.1
MEAN	5.1	
S.D.	2.2	

The percent of one parent households was 66.7.

Most of the homemakers (MFP) had some high school education, a mean of 10.7 years with a S.D. of 1.8 years (Table 4.2).

Table 4.2. Education of MFP by school years completed.

School years completed	Number	Percentage
3	1	1.3
7	3	4.0
8	6	8.0
9	9	12.0
10	8	10.7
11	10	13.3
12	36	48.0
13	2	2.7
Total	75	100.0
MEAN	10.7	
S.D.	1.8	

A few homemakers (8) had some occupational training beyond high school. The percent of homemakers who said they had some schooling in foods and nutrition was 65.3. Of the 3-6 year old children, 58.7 percent were in day care, nursery school or kindergarten.

The occupation for one-half of the heads of household was homemaker (Table 4.3); another one-fourth of the heads of household were unskilled.

Sixty-eight percent of the children ages 3-6 had two or less meals away from home per week.

The annual income for 75.7 percent of the families was $5,999 or less (Table 4.4).

Table 4.3. Employment of heads of households.

Categories of employment	Number	Percentage
Clerical and sales worker	1	1.3
Skilled manual	7	9.3
Semi-skilled	6	8.0
Unskilled	19	25.3
Homemaker	42	56.0
Total	75	99.9

Table 4.4. Annual income of families.

Income range	Number	Percentage
1,000 - 1,999	3	4.1
2,000 - 2,999	2	2.7
3,000 - 3,999	13	17.6
4,000 - 4,999	21	28.4
5,000 - 5,999	17	23.0
6,000 - 6,999	5	6.8
7,000 - 7,999	6	8.1
8,000 - 8,999	2	2.7
9,000 - 9,999	3	4.1
10,000 - 11,999	1	1.3
12,000 - 14,999	0	-
15,000 - 24,999	1	1.3
Total	74*	100.0

*One homemaker did not know her income.

Food stamps were used by 89.3 percent of the homemakers. The length of time the homemakers were using food stamps ranged from one month to 12 months of the past year; 74.6 percent had used food stamps 12 of the past 12 months. The mean amount spent for

food stamps per month was $100.00 and the S.D. was $36.05. The mean value of the food stamps per month was $154.62 and the S.D. was $53.40.

The amount of money spent for groceries for a family in an average week was a mean of $43.31 with a S.D. of $17.25.

The background characteristics of the ENFP homemaker, money for groceries, amount for food stamps, value of food stamps, and income, were used to tabulate the percent of income for grocery purchasing power (GPP) and family grocery money (FGM). GPP is the cost of the groceries purchased in an average month. FGM is the actual money spent for groceries in a month. If a homemaker was on food stamps, the bonus value of the food stamps would be subtracted from the GPP to get the FGM. In the families not using food stamps the FGM would be the same as the GPP. Also of interest was to see if food stamps increased the homemaker's purchasing power in the grocery store.

The average income per month was $450.59 and a S.D. $207.70 and per family member it was $99.04 and S.D. $53.06.

Table 4.5. The percent of income going for groceries.

	Mean	S.D.
GPP as percent of income	44.36	16.32
FGM	135.97	63.68
FGM as percent of income	31.74	13.52
Bonus value of food stamps	48.79	30.49
FGM/family member	27.57	9.25
Bonus value/family member	10.03	5.54

The GPP as percent of income was 44.36 (Table 4.5). The average bonus of the food stamps was $48.79 with a S.D. of $30.49. After subtracting the bonus value of the food stamps, the FGM was $135.97 and a S.D. of $63.68. The FGM as percent of income was 31.74.

The GPP and FGM as percent of income were broken down into percent groups. The GPP showed 84.3 percent of the homemakers spent 60 percent or less of their income for groceries (Table 4.6). When using FGM, it was found that 92.9 percent of the homemakers spent 50 percent or less of their income for groceries (Table 4.7).

Table 4.6. GPP as percents of income.

Percents of income	Number	Percentage
11 - 20	7	10.0
21 - 30	6	8.6
31 - 40	12	17.1
41 - 50	18	25.7
51 - 60	16	22.9
61 - 70	7	10.0
71 - 80	3	4.3
81 - 90	1	1.4
Total	70*	100.0

*Five homemakers whose percentage was over 100 percent were excluded.

Table 4.7. FGM as percents of income.

Percents of income	Number	Percentage
11 - 20	14	20.0
21 - 30	20	28.6
31 - 40	19	27.1
41 - 50	12	17.1
51 - 60	2	2.9
61 - 70	2	2.9
71 - 80	1	1.4
81 - 90	0	-
Total	70*	100.0

*Five homemakers whose percentage was over 100 percent were excluded.

Food Practices of Homemakers and Children

A majority (87 percent) of the homemakers said they either prepared new foods or new recipes weekly or monthly. When they were asked when they last prepared a new food or recipe, again 87 percent said it was within the last week or month.

The mothers were asked to respond to the type of snack and grocery store selections the child made. The responses were placed into five food groups (Table 4.8). The kind of snacks the children select were in the following order: 'snack foods,' fruits and vegetables, milk and milk products, breads and cereals, and finally meat group (Table 4.8). However, of the children picking out foods in the grocery store the order was different. The order was: breads and cereals, 'snack foods,'

fruits and vegetables, meat group, and milk and milk products (Table 4.8).

Table 4.8. Percentage of children reported chosing snacks and grocery items from each of five food groups.

Food groups	Snacks	Grocery Store
Milk and milk products	45.3	12.7
Meat group	28.0	16.4
Fruits and vegetables	58.7	38.2
Breads and cereals	40.0	58.2
'Snack foods'	81.3	54.5

The average number of food groups mentioned by the mother as child's snacks was 2.5 while the child's grocery store selections were 1.4 groups.

When a child helped the homemaker prepare food, it was usually weekly. The largest single way in which the child helped was by getting ingredients and supplies; however, it was usually a combination of mixing, pouring, getting ingredients and supplies. Allowing the children to measure was not mentioned by any of these homemakers.

Of the children that went to the grocery store and helped with the grocery store shopping, the children helped by finding foods (43.2 percent), getting foods from the grocery list (25.0 percent) and other ways, such as putting foods into and taking foods out of the cart and pushing the cart (31.8 percent).

Homemaker-Child Food Interaction

Items 8, 10, 11, 12 of the M.S.U. questionnaire were used to tabulate a score for food preparation participation variable of the project children (children participating in the nutrition education project). Each item had a range of 1-3. The higher score shows a greater amount of participation by the child. The mean score was 1.9. One-half of the children helped prepare foods. About 3/4 of the children always or sometimes helped set the table and clean up after a meal. When mothers were asked if their children help prepare new dishes about one-third responded that there children either helped or sometimes helped make these new dishes.

A score for grocery store participation variable of the children was obtained from averaging the responses to items 18, 19 and 22 of the M.S.U. questionnaire. Each item had a range from 1-3, a higher score indicating greater participation. The mean score for the children was 2.1 with 62.7 percent of the homemakers always taking the young children, 22.7 percent sometimes taking their children and 14.7 percent never taking their children to the grocery store. Of the homemakers taking their children to the store, 56.3 percent allowed their children to select foods in the grocery store, 29.7 percent sometimes allowed them and 14.1 percent never allowed them. The homemakers allowed them to select an average of 2.25 items (S.D., 1.16). The percentage of children helping with the grocery shopping was 40.6 percent; 28.1 percent sometimes helped, and 31.3 percent never helped.

Food Attitude and Consumption of Children

A score for establishing the general attitude toward food of the children was calculated from items 2-6 and 9 of the M.S.U. questionnaire. Each item had a range of 1-2, a higher score implying a more positive attitude toward food. The mean score for the children was 1.67.

Average food attitudes and consumption of the children were compiled for the twenty project foods (Table 4.9). Both foods in the milk group, milk and cheese were well liked. Most of the milk consumption was on a daily basis and cheese on a weekly basis. There was a high variability in the amount of milk or cheese consumed per week. The average for the group indicated over 9 ounces for a serving of milk and over 1.5 ounces for a serving of cheese.

There was more deviation between the food in the meat group. All of the foods except liver were liked by the children. Poultry, eggs, fish and beans were eaten weekly whereas liver was more on a monthly basis. Again, there was quite a bit of variability in the ounces per week; liver had the lowest ounces per week.

The breads and cooked cereals were both popular. As expected, bread was eaten on a daily basis whereas cereal was consumed weekly. A serving of bread was over one ounce and a serving of cooked cereal was over eight ounces.

Table 4.9. Children's attitude and consumption toward twenty project foods.

Foods	Never ate %(N)	Attitude* Mean	S.D.	No. Consuming Food	No. serv./wk. Mean	S.D.	Oz./wk. Mean	S.D.	Oz./serv. Mean	S.D.
Milk Group										
milk	0	3.92	.36	75	21.67	8.87	162.45	74.72	9.20	4.61
cheese	0	3.91	.47	71	4.41	4.65	6.35	6.57	1.61	1.20
Meat Group										
poultry	0	3.91	.44	70	1.77	1.87	5.92	7.47	3.79	2.86
eggs	0	3.79	.58	69	3.68	2.57	9.47	8.14	2.63	1.09
fish	1.3(1)	3.71	.82	57	.93	.70	3.83	4.03	4.42	3.59
beans	4.0(3)	3.43	1.12	54	1.12	1.79	5.89	9.65	5.91	5.10
liver	6.7(5)	2.48	1.39	32	.44	.53	1.25	2.20	2.85	2.97
Breads and Cereals										
breads	0	3.88	.33	75	17.49	8.23	24.48	13.36	1.42	.62
cooked cereal	0	3.65	.78	67	3.39	2.77	27.53	27.70	8.77	5.63
Fruits										
apples	0	3.97	.16	70	5.48	6.34	31.91	40.07	5.87	2.81
oranges	0	3.93	.41	72	6.25	7.23	42.41	68.41	6.43	2.95
cantaloupe	10.7(8)	3.19	1.41	43	1.40	2.28	2.53	4.37	1.97	1.07
cranberries	12.0(9)	2.76	1.47	12	.16	.37	.49	1.01	2.92	2.83
Vegetables										
corn	1.3(1)	3.81	.67	70	1.84	1.31	9.13	7.65	5.56	4.27
potatoes	0	3.79	.55	72	3.84	2.99	20.16	23.17	5.85	4.43
tomatoes	0	3.63	.79	63	1.75	1.74	8.80	10.60	5.37	3.35
carrots	1.3(1)	3.65	.83	62	1.89	2.21	6.93	9.62	3.32	1.71
squash	21.3(16)	1.97	1.49	15	.25	.55	.87	2.37	3.54	4.02
asparagus	33.3(25)	1.67	1.58	17	.25	.50	.87	1.65	4.14	3.43
broccoli	36.0(27)	1.65	1.62	14	.21	.47	.75	2.18	3.00	2.20

*4 = like; 3 = neither likes nor dislikes but will eat; 2 = dislike; 1 = refuse to eat.

The attitude toward fruits was more divided. Apples and oranges were tasted and liked by all the children. For cantaloupe and cranberries there were several children who had never eaten them and for those who had tried cantaloupe and cranberries they were not as well liked as apples and oranges. The consumption of apples and oranges were also on a weekly basis whereas cantaloupe was on a monthly basis and cranberries on a yearly basis. When cranberries and cantaloupe were consumed, the amount eaten was smaller than that for apples and oranges.

Vegetables had the most variability within the food group. Corn, potatoes, tomatoes and carrots were fairly well liked by all the children. Squash, asparagus, and broccoli had never been tried by quite a few children and those who had tasted them did not like them very well. The four more popular vegetables were eaten weekly and the three less popular monthly. Except for carrots the serving size of the more popular vegetables was generally larger than the less popular vegetables.

Direction of Results

Correlation statistics were used to compare the variables, amount of food preparation and grocery store participation, number of food groups selected for snacks and at the grocery store, general food attitude, attitude toward the food groups, fruit, vegetable, bread and cereal, milk, and meat and the consumption for these five groups of the children, and preparing new foods and new recipes of the homemakers (b 1, b 7) in the first expected

result statement. The correlation matrix (Table 4.10) indicated that the general attitude toward food positively related to attitude toward the five food groups and also the attitudes among the various food groups were directly related. The attitudes toward milk and bread and cereal food groups were directly correlated to frequency with which milk or bread and cereal food group foods were consumed per week (.37, .32). The frequency with which the project foods were eaten per week in the various food groups was generally related to other food groups. The homemakers response to how often she prepares a new dish or new recipe (b 1) was directly related (.66) to when she said was the last time she prepared a new dish or new recipe (b 7), but neither of these items were related to the other variables. The reason could be that they were one item variables. The amount of food preparation participation by the children was directly related to the number of food group choices in the grocery store and ounces of fruit consumed. The number of food group choices in the grocery store was also related to the amount of grocery store participation of the children and frequency with which milk was consumed. The amount of grocery store participation of the children was also related to frequency fruits were consumed per week. The number of food groups selected by the children for snacks was not related to any of the variables.

If the homemakers had more than one child in the 3-6 year age group, they were asked to respond for the two youngest children in the M.S.U. item section (Appendix A 3b) of the interview

Table 4.10. Correlation matrix from expected result statement 1.

	Item1	Item7	AttFd	Prepr	Snack	GrSel	GrStr	AtFrt	FrqFrt	OzFrt
Item 1	1.00									
Item 7	.66*	1.00								
AttFood	-.07	.04	1.00							
Prepar	-.03	-.24	.11	1.00						
Snacks	.09	.01	.14	.06	1.00					
GrSelec	-.06	-.17	.07	.38*	.09	1.00				
GrocStr	-.13	-.21	-.02	.29	.12	.58*	1.00			
AttFrt	-.19	-.16	.12	.15	.08	.08	.003	1.00		
FrqFrt	-.13	-.15	.11	.27	.003	.28	.32*	.16	1.00	
OzFrt	-.08	-.19	.08	.34*	.02	.25	.21	.15	.93*	1.00
AttVeg	.004	-.02	.37*	-.003	.15	.04	-.08	.25	.01	-.03
FrqVeg	-.03	-.17	.12	.17	.12	.02	.03	.10	-.06	-.06
OzVeg	-.07	-.16	.15	.16	.18	.02	.01	.10	.03	.03
AttMeat	-.11	-.06	.44*	-.07	-.05	.04	.03	.18	.10	-.02
FrqMeat	.09	.04	.08	-.03	.08	.05	.17	-.003	.06	-.01
OzMeat	.02	-.03	.18	.08	.10	.01	.18	.03	.19	.16
AttMilk	.05	.14	.24	-.06	.15	-.04	-.14	.30*	-.01	-.05
FrqMilk	.04	.05	.11	.09	.28	.32*	.29	.09	.23	.15
OzMilk	.09	.03	.06	.06	.23	.23	.05	.09	.19	.14
AttBdCer	-.25	-.18	.46*	-.03	.06	.02	.02	.45*	.13	.07
FrqBdCer	-.10	-.07	.30*	.01	.14	-.08	-.03	.11	.25	.22
OzBdCer	-.16	-.07	.30*	-.04	-.04	-.13	-.14	.32*	.20	.19

*If $r = .30$ then $\alpha = .01$.

AtVeg	FrqVeg	OzVeg	AtMeat	FrMeat	OzMeat	AtMilk	FrMilk	OzMilk	AtBdCr	FrBdCr	OzBdCr
1.00											
.23	1.00										
.19	.82*	1.00									
.57*	.16	.13	1.00								
.15	.38*	.35*	.22	1.00							
.12	.45*	.55*	.21	.85*	1.00						
.26	.22	.15	.53*	.11	.17	1.00					
.15	.26	.28	.27	.36*	.38*	.37*	1.00				
.10	.23	.25	.17	.31*	.35*	.35*	.71*	1.00			
.27	.12	.21	.41*	.17	.25	.31*	-.01	.03	1.00		
.21	.38*	.43*	.17	.27	.45*	.09	.07	.07	.32*	1.00	
.13	.34*	.40*	.21	.20	.45*	.20	.14	.21	.38*	.59*	1.00

schedule. One of the two children was randomly selected for the calculation of the data because it was thought that there was no difference between the two children. When testing if there were no differences between the two children in the same family, it was found that the cell means of the two children were very close and there were no differences between any of the variables. The P equaled .99 and so there were no differences between the two children.

Also of interest in the findings was that children going to day care, kindergarten, etc. were related to the children not going to school on the variables food practices, food attitudes, food consumption and homemaker-child food interaction. For the variables preparing new foods and new recipes of the homemaker (b 1, b 7), general attitude toward food, amount of food preparation and grocery store participation, and the number of food group choices for snacks and grocery items of the children, the P equaled .18; and for the variables attitude toward, frequency and ounces consumed of the various food groups by the children, the P equaled .35 and so it was concluded that there were no significant differences between the children going to school and those who did not.

When two levels of education (12 - 13 years and <12 years) were compared to some of the variables under the groupings, food practices, food attitudes, food consumption, and homemaker-child food interaction, no differences were found between the homemakers with 12 - 13 years of school and less than 12 years of school.

The variables, preparing new food and recipes (b 1, b 7), attitude toward food, food preparation and grocery store participation, and the number of food group choices in snacks and grocery store, had a P = .67. For the variables, attitudes, frequency, and ounces of five food groups, the P was .89. From these findings it was concluded that there were no relationships between the levels of education and the selected variables.

Race was related to various variables in food practices, food attitudes, food consumption and homemaker-child food interaction. The P was significant (.04) in food attitude and consumption of the twenty project foods. The variables, attitude toward fruit, meat, and breads and cereals, and ounces of fruit and breads and cereals were significant in their relationship (Table 4.11). Frequency of fruit had the highest probability, .009. The cell means of this variable showed that nonwhites consumed the project fruits 16.25 times a week whereas the whites consumed these fruits only 9.74 times a week (Table 4.12).

Table 4.11. Multivariante analysis of food attitude and consumption for race differences.

Variables	Univariate F	P <
Attitude toward fruit	4.31	.041*
Frequency of fruit	7.33	.009*
Ounces of fruit	4.02	.049*
Attitude toward vegetables	1.77	.187
Frequency of vegetables	1.92	.170
Ounces of vegetables	.50	.483
Attitude toward meat	5.00	.029*
Frequency of meat	3.49	.066
Ounces of meat	2.64	.109
Attitude toward milk	.48	.491
Frequency of milk	.54	.465
Ounces of milk	2.62	.110
Attitude toward breads and cereals	4.84	.031*
Frequency of breads and cereals	2.76	.101
Ounces of breads and cereals	3.86	.053*

* $P \leq .05$.

Table 4.12. Cell means of significant variables.

	Att. Fruits	Freq. Fruits	Oz. Fruits
Whites	3.58	9.74	57.14
Nonwhites	3.77	16.25	94.87
	Att. Meat	**Att. Brd. and Cer.**	**Oz. Brd. and Cer.**
Whites	3.43	3.66	44.60
Nonwhites	3.66	3.86	58.45

CHAPTER V

DISCUSSION AND CONCLUSIONS

Data collected on Michigan ENFP (1974) families showed a lower percentage (67.0) of the families on food stamps than in this study (89.3). The percentage of families with incomes under $4,000.00 was only 24.3 for the present study, but in Michigan the percentage was 46.4. The percentage of whites in this study was 46.7 while in Michigan it was 55.5; and for nonwhites the percentage was 53.3 and 44.5. The reasons for the variance could be the particular counties or the homemaker population selected for the project.

The percentage of income for groceries does indicate that the homemakers on an average spend about one-third of their income for groceries. In general, the use of food stamps does increase the families' pruchasing power for groceries. The grocery purchasing power (GPP) as percent of income was over 40, whereas the family grocery money (FGM) was approximately one-third. Compared to the national average of <17 percent (Bunting, 1970) the FGM of these homemakers was almost doubled. Five homemakers had to be excluded because of an obvious error (more than 100 percent of income spent for groceries) in either the recording of income or the money for food stamps or groceries. These discrepancies need to be considered when looking at these figures.

Vegetables, as presented in the food attitude and consumption results of the twenty project foods, were not as well liked as the other food groups. Dierks and Morse (1965), Eppright, et al. (1969), and Lamb and Ling (1946) have all found that the most frequently named disliked foods were vegetables. The vegetables selected in the project show some indication of either a dislike or have never tasted the more unfamiliar vegetables. Fruits were the next group where several foods were never eaten by some children and there were also less favorable attitudes. The consumption of the less popular fruits and vegetables also tended to be less frequent and to have smaller serving sizes than in the other food groups. Studies (Sims, 1971; Eagles and Steele, 1972) have noted the consumption in the fruit and vegetable food group was lower than the recommended servings. Even though the sample of fruits and vegetables in the project was small, the consumption of the selected fruits and vegetables appear to agree with these investigators.

The two most popular food groups in the grocery store selections by the children were breads and cereals and 'snack foods.' Gussow (1972) made a survey of the type of commercials that ran during 29 hours of children's television and found 82 percent were food, drink, candy, gum or vitamins, or "ingestible items." Further analysis showed the three main groupings of commercials were breakfast cereals (38.5 percent), cookies, candy, gum, popcorn and other snacks (17 percent), and vitamins (15 percent). Dr. Scott Ward at Harvard School of Business Administration

found that the greatest attention to commercials was by the youngest children (Gussow, 1972). The Children's Television Advertising Guidelines (1972) noted that after parents, school and church, television influenced the shaping of values and judgments. Our findings may also be partially the result of influential commercials on the children's grocery selections. 'Snack foods' were also the most frequently mentioned snack item and so snacks may also be influenced by commercials.

When the variables in the first expected result statement were compared, it indicated that if a child had a positive attitude toward food in general, he also had a positive attitude toward all five food groups. It was also found that a positive attitude in one food group was directly related to the other food groups. However, a positive attitude toward a food group or food in general did not relate to frequency or the ounces a food was consumed in the other food groups; but in milk and breads and cereals a positive attitude was related to frequency and ounces a project food was consumed within those food groups. Triandis (1971) and Rokeach (1972) along with other studies have stated that attitude is frequently unrelated to overt behavior.

How often a homemaker says she prepares a new food or recipe (b 1) agrees with when the last time she said she prepared a new dish or recipe (b 7). The majority of these ENFP homemakers, then, prepare new foods or recipes either weekly or monthly.

There seems to be some interrelation in the homemaker-child food interaction variable. Children who helped in the kitchen were also making more food choices in the grocery store. Also, those who go to the grocery store and help with the shopping were making more food selections in the store. However, the items used to measure the homemaker-child food interaction were not related to food attitude or food consumption of the twenty project foods.

No differences between the two children in the same family from the 3 - 6 year age group were found. The reasons for finding no differences between the food practices, attitude and consumption could be: (1) that they were two children from the same family and within a small age range. Eppright, et al. (1969) revealed a relationship between food attitudes, particularly toward vegetables, and older siblings. (2) the way in which the interviews were carried out with homemakers of two children may have lead the homemakers to answer similarly for both children. Lastly, the project foods and other items selected for the questionnaire may not have been ones that would discriminate between two children in the same family.

Children going to school were found to be no different as to food attitude, food consumption, food practices and homemaker-child food interaction than the children not going to school. It was also discovered that the majority of the children ate only 1-2 meals away from home a week. Both of these findings seem to

support Eppright, et al. (1970) that most meals of preschool children are eaten at home under the direction of the mother; and so, even though many of the children were going to school, the items used to measure the variables for the two groups of children were not correlated.

Morse, et al. (1967) did find a relationship between homemaker's nutrition knowledge and education; however, Young, et al. (1956) did not. For the variables selected in this study; no differences between those homemakers graduating and those not graduating from high school were found.

The consumption of the four project fruits by the non-whites was significantly higher than whites; however, because the project was interested in only four fruits no general conclusions beyond this project can be made. These findings seem to be supported by a study of food practices of Blacks in Los Angeles county which found that one of the "good" food practices was "inclusion of a variety of fresh fruits in meals or between meals" (Gladney, 1972).

Limitations of Present Research

1. Several of the foods selected for the leaflets could have been changed to include foods that would reinforce food practices of the ethnic groups in the ENFP program.

2. When interviewing people there is always the problem regarding the accuracy of the responses for items that require

recall such as food consumption or are considered private information such as income.

3. Also, the homemaker's accuracy on the children's food consumption may be subject to question.

4. The influence of the aide's presence at the interview on the responses must be considered.

5. The items in the interview were not always in a form which could be easily converted for analysis of the variables.

Summary and Conclusions

The study has presented nutrition education materials for homemakers with young children. The materials also provide the ENFP aides with additional instructional resources. The materials are a series of leaflets on a variety of foods with nutrition and food information for the homemaker and also activities for the homemaker and child in the home. The information and activities are simply written and use foods and materials that are either inexpensive, familiar or readily found in the home.

The ENFP counties selected for the study were Genesee and Calhoun. Data was collected by an interview schedule. The results of the interviews were based on a sample of 75 homemakers with 1 child between 3-6 years old per each homemaker.

A majority of these families in the counties were headed by the homemaker who was an average of 29 years old. The average

family size was five. Most of the homemakers had 11 years of schooling and the occupation of over half of the heads of households was housewife. Over 60 percent of the homemakers said that they had some training in foods and nutrition. Even though over half of the young children go to school, they still ate a majority of their meals at home.

Ninety percent of the families used food stamps. The findings showed food stamps did increase their grocery purchasing power. The average income was $450.00 a month with approximately one-third of their income going toward groceries.

The most popular items selected by the children for snacks and at the grocery store were 'snack foods,' and also at the grocery store, breads and cereals were frequently selected foods.

After dividing the foods selected for the project into five food groups, the vegetable group had the most foods that the children disliked or had never tasted. The foods in both the bread and cereal and milk group were popular and well liked. The fruit and meat group had more variance between the selected foods.

It was found that there were no differences between two children selected from the same family, children going to school and children not going to school, and education levels of the homemakers. When comparing whites and nonwhites, nonwhites were found to consume more of the selected fruits than the whites.

Correlation statistics for the variables, number of food group selections for snacks and grocery items, amount of grocery store and food preparation participation, general food attitude and food consumption of the food attitude toward the foods selected for the project by the children, indicated that children with a positive general food attitude had a positive attitude toward all five food groups, and also children with a positive attitude toward one food group also had a positive attitude toward other food groups. However, attitudes were not related to the children's consumption in the food groups except in the case of the two food groups, bread and cereal and milk, where attitude toward these foods was related to consumption. There also seemed to be some indication of a relationship between amount of grocery store and food preparation participation of the children; however, they were not related to food consumption or food attitude.

Suggestions for Future Research

1. A resurvey of these homemakers to determine the effectiveness of the nutrition education leaflets in terms of improving food attitude and consumption of the project foods and food practices or homemaker-child food interaction through the leaflets and also to specify the leaflets or parts of the leaflets that are more useful and to whom they are more useful.

2. The study shows that most of the homemakers are taking their young children to the grocery store. The grocery

store could provide many learning experiences for homemaker and child and so nutrition education project for use in the grocery store would be beneficial.

3. Besides this study many other studies have indicated vegetables and also fruit consumption as not meeting the recommended amount needed per day. Some nutrition education programs which emphasized increasing vegetable consumption have shown success; others have not. Most of the studies determine effectiveness shortly after the nutrition education project has been completed. Studies should be made to see if the change is long term and to make a detailed investigation into the attitudes and any possible relation to behavior in the case of vegetable and fruit consumption.

4. Again, this study shows the most popular snacks are 'snack foods.' A nutrition education project directed toward snacks would be helpful since snacks are an important part of the day's total food intake.

5. The homemaker-child food interaction may still be an important factor in influencing eating habits and so a study to assess a measure for homemaker-child food interaction for future use could have some utility.

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APPENDICES

APPENDIX A

INTERVIEW

1. Interview Introduction
2. Permission Slips
3. Questionnaires

    A. NC 108 items
    B. M.S.U. items

APPENDIX A - 1

INTERVIEW INTRODUCTION

The approach the researcher used to describe the project and to solicit cooperation and participation of the experimental group of homemakers will be as follows:

"Hello, I am _____, a graduate student from Michigan State University. We want to try something new with the Expanded Nutrition Program. It is especially for families with preschool children. This is something you can participate in but you do not have to. We'd like to give you some leaflets that have information and activities for you and your preschool child.

"Here is an example of one of these leaflets. This one is about _____. As you can see it has some information about _____, and activities for you and your child. If you would like to participate I will give you a leaflet and then, _(aide's name)_ will give you other leaflets when she visits you at home.

"Also, I have some question I would like to ask you about your family's food practices. What I am interested in is really just how you feel about certain things. You can be sure the information you give me will be kept confidential. I do not even intend to put your name on it--just a number. Do you have any questions?

"After you have been given all the leaflets someone will be interested to find out how you like these leaflets. Would you like to participate in our project? (If yes, continue.)

"I need to prove to my supervisor that I was here and that I have your permission. To do this I'd need to read you these statements (read permission slip). Since you would like to participate would you please sign here? The aide will be signing it, too."

The control group of homemakers:

"Hello, I am _____, a graduate student from Michigan State University. We are interested in getting information about food preferences and attitudes of young children that we will combine with other information from homemakers of other states. We would like very much for you to contribute to this information but you don't have to.

"You can be sure the information you give me will be kept confidential. I do not even intend to put your name on it--just a number. Do you have any questions so far?

"We are not only interested about what's happening now but also would like to come back in about six months to see if anything has changed. Would you like to participate in our project? (If yes, continue.)

"I need to prove to my supervisor that I was here and that I have your permission. To do this I'd need to read you

this statement (read permission slip). Since you would like to participate, would you please sign here? The aide will be signing it, too."

APPENDIX A-2

PERMISSION SLIPS

EXPERIMENTAL GROUP

Permission--Proof of Home Call

The Nutrition Education Project has been explained to me.

I am willing to participate in the project with my preschool children and I understand that there is no obligation to stay in the project.

I understand that I will be interviewed now and following the distribution of the leaflets.

_____
Homemaker

_____
Aide

_____
Date

CONTROL GROUP

Permission--Proof of Home Call

The Food Attitude Survey has been explained to me.

I am willing to participate in the survey with my preschool children and I understand that there is no obligation to stay in the survey.

I understand that I will be interviewed now and following the distribution of the leaflets.

_____
Homemaker

_____
Aide

_____
Date

APPENDIX A-3a

NC 108 Items June, 1973

NC-108 Regional Core Items
Department of Sociology & Anthropology
Iowa State University
Ames, Iowa

FACE SHEET

THIS INFORMATION IS TO BE COMPLETED BY INTERVIEWER.

Date of Interview: _____, 19___

Location of interview: _____ (City), _____ (State)

Size of City: _____

Sex of Respondent (Circle the correct letter) M F

Name of Interviewer: _____

1. Who is the main food preparer in this household? _____

RECORD RESPONSES TO QUESTIONS 4 AND 5 BELOW. STAR (*) THOSE PERTAINING TO THE MAIN FOOD PREPARER.

5. What is the age and sex of each person in this household (including the main food preparer)?

MEMBERS OF HOUSEHOLD

	Relation to Head	Age	Sex		Relation to Head	Age	Sex
1.	Head of Household			6.			
2.				7.			
3.				8.			
4.				9.			
5.				10.			

4. What is the relationship of each person to the head of household (including the main food preparer)?

(CIRCLE THE APPROPRIATE NUMBER. NOTE IF THE RESPONDENT OR HEAD OF HOUSEHOLD HAVE COMPLETED OR RECEIVED HIGH SCHOOL DIPLOMAS THROUGH HIGH SCHOOL EQUIVALENCY PROGRAMS, RECORD AS COMPLETION OF HIGH SCHOOL (12).)

6. What is the highest grade that you have completed in school?

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20+

7. What certificates or degrees have you earned beyond high school?

   _____ _____

   0 = Not applicable no high school degree
   1 = High school diploma only
   2 = Technical school, Specify: _____
   3 = Associate Arts Degree
   4 = Bachelor's Degree (B.A. or B.S.)
   5 = Master's Degree or equivalent
   6 = D.V.M. or M.D. or D.O
   7 = Ph.D or equivalent
   8 = Other, Specify: _____

8. What is the highest grade that the head of household has completed in school?

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

   19 20+

9. What certificates or degrees has head of household earned beyond high school? _____

   0 = Not applicable no high school degree
   1 = High school diploma only
   2 = Technical school, Specify: _____
   3 = Associate Arts Degree
   4 = Bachelor's Degree (B.A. or B.S.)
   5 = Master's Degree or equivalent
   6 = D.V.M. or M.D. or D.O.
   7 = Ph.D or equivalent
   8 = Other, Specify: _____

10. Have you had any high school and/or college training in food preparation and nutrition? _____

    1 = No
    2 = Yes

11. What is the occupation of the head of this household? (BE SPECIFIC.)

    _____

    _____

12. Do any of your children participate in the school lunch program? _____

    1 = No
    2 = Yes

(If no, go to question 14.)

13. How many children participate in the school lunch program? ___ ___

14. Do any participate in a school breakfast program? _____

    1 = No; 2 = Yes

(If no, go to question 16.)

15. How many children participate in a school breakfast program? ___ ___

16. Do any receive free or reduced cost school breakfast or lunch (excluding mild snacks)? _____

    1 = No; 2 = Yes

(If no, go to question 18.)

17. How many children participate in a free or reduced cost school breakfast or lunch (excluding milk snack)? ___ ___

18. During the past year, have you used food stamps? _____

    1 = No; 2 = Yes

(If no, go to question 22.)

19. How many months during the past year did you use food stamps? _____

(RECORD NUMBER OF MONTHS.)

20. When you are using food stamps, what is approximately the amount you spend on food stamps per month? $_____ _____

(RECORD DOLLAR AMOUNT.)

21. What is the money value of your food stamps per month? $_____ _____

(RECORD DOLLAR AMOUNT.)

22. Approximately, how many meals which you eat are prepared and eaten in your home per week?

    0__, 1__, 2__, 3__, 4__, 5__, 6__, 7__, 8__, 9__, 10 or more___

23. Approximately, how many meals which you eat are prepared at a restaurant, cafeteria, or obtained from a vending machine per week?

    0__, 1__, 2__, 3__, 4__, 5__, 6__, 7__, 8__, 9__, 10 or more___

24. Approximately how much money do you spend for groceries in an average week, including milk and meat but excluding cigarettes and beer? $_____ _____

(RECORD TO THE NEAREST DOLLAR.)

25. Using the categories on CARD, which of these categories best represents your total family income, before taxes? _____

1. Under $1,000
2. $1,000 to $1,999
3. $2,000 to $2,999
4. $3,000 to $3,999
5. $4,000 to $4,999
6. $5,000 to $5,999
7. $6,000 to $6,999
8. $7,000 to $7,999
9. $8,000 to $8,999
10. $9,000 to $9,999
11. $10,000 to $11,999
12. $12,000 to $14,999
13. $16,000 to $24,999
14. $25,000 to $49,999
15. $60,000 or more

26. Are you satisfied with the kinds of foods you are eating? _____

1 = No (GO TO QUESTION 27.)
2 = Yes (GO TO QUESTION 28.)

27. If no, what kind of changes would you like to make in the foods you eat?

_____

_____

_____

28. If yes, would you make any changes in the kinds of foods you are eating? If yes, what changes would you make?

_____

_____

_____

We are interested in your feelings or opinion about the following statements. You will probably agree with some of these statements and disagree with some of them.

After each statement, tell me if you agree with the statement or disagree with the statement. After you have done this please indicate how strongly you agree or disagree with the statement. For example, if it really doesn't make much difference to you if you agree or disagree with the statement you would rate the statement one (1). If you very strongly agree or disagree with the statement, you would rate it five (5). For some statements, the numbers 2, 3, or 4 may better describe how strongly you agree or disagree with the statement. If this is the case, you would rate the statement the appropriate number.

(CIRCLE THE CORRECT ANSWER IN EACH COLUMN. CIRCLE AD FOR NO OPINION.)

(IF R. ASKS FOR INTERPRETATION OF STATEMENT, SAY:

"Take the statement as it is.")

Time spent by a person in finding out about new ideas and practices is time well spent.	A	D 1 2 3 4 5
I think traditional ways are the best ways of doing things.	A	D 1 2 3 4 5
The man who stands alone is the man who is admired.	A	D 1 2 3 4 5
About the only thing that science has accomplished for the individual is to make life more complicated.	A	D 1 2 3 4 5
Education is valuable but it will never be as valuable as experience for success.	A	D 1 2 3 4 5
Everything considered, all of the scientific developments in this country have done about as much harm as good.	A	D 1 2 3 4 5
Fate seems to decide some people will be successful--others failures.	A	D 1 2 3 4 5
It is more important for people to make decisions on the basis of past experience than to try to find new ways of doing things.	A	D 1 2 3 4 5
Many people have become so scientific they have forgotten the importance of good practical judgment.	A	D 1 2 3 4 5

One of the best indicators of whether a man will be successful is his ability to make his own decisions.	A	D 1 2 3 4 5
If a man wants a thing done right, he must do it himself.	A	D 1 2 3 4 5
Young people today are too willing to take chances because they have never known how tough times can be.	A	D 1 2 3 4 5
Actually you can rely on very few people.	A	D 1 2 3 4 5
The future is in the hands of fate and we might as well accept it.	A	D 1 2 3 4 5
The most important function of education is to teach a person to be independent.	A	D 1 2 3 4 5
In making decisions it is more important to follow one's own judgment rather than to do what other people are doing.	A	D 1 2 3 4 5
I regard myself as the kind of person who is willing to take a few more risks than the average person.	A	D 1 2 3 4 5
Everyone should have some money laid aside for a "rainy day."	A	D 1 2 3 4 5
I'm not concerned about whay my neighbors think of the way I live.	A	D 1 2 3 4 5
Probably the best guide in making decisions is what has worked in the past.	A	D 1 2 3 4 5
The best advice to a young family is to be cautious.	A	D 1 2 3 4 5
There is really no reason for man to explore outer space.	A	D 1 2 3 4 5
We should view whatever happens to us as planned by forces beyond our control.	A	D 1 2 3 4 5
In making decisions it is better to think in terms of minimizing losses rather than maximizing profits.	A	D 1 2 3 4 5

The person who gets ahead fastest is the one who sticks to the old proven way of doing things.	A	D	1	2	3	4	5
I would rather invest money in a savings account in a bank than in the stock market.	A	D	1	2	3	4	5
Man's future depends primarily upon the technical advances made by scientific research.	A	D	1	2	3	4	5
Scientific information is a necessity to a person in making decisions.	A	D	1	2	3	4	5
Much of the scientific information people receive is too impractical to be of value.	A	D	1	2	3	4	5
Man is the victim of circumstances beyond his control.	A	D	1	2	3	4	5

GOALS

CERTAINTY METHOD:

People vary greatly in the goals which they consider important. Card _____ contains a list of goals some people feel are important. However, not everyone agrees on just how important these goals are. We would like to know how you feel about these goals. After each goal is read, tell me whether you feel that goal is important or unimportant to you. Then, tell me how strongly you feel about the importance or unimportance of the goal. For example, if the goal is only slightly unimportant to you, you would say the goal is unimportant; and then give it a one. If you feel very strongly that the goal is unimportant, you would give it a 5. For some goals, the numbers 2, 3, or 4 may better describe how strongly you feel about the importance or unimportance of the goal.

(CIRCLE THE CORRECT ANSWER IN EACH COLUMN. CIRCLE IU FOR NO OPINION.)

(IF R. ASKS FOR INTERPRETATION OF STATEMENT, SAY: "Take the statement as it is.")

1.	Be a good manager of money and time	I U 1 2 3 4 5
2.	Gain and maintain the respect of people outside the family.	I U 1 2 3 4 5
3.	Maintain or improve the quality of my diet.	I U 1 2 3 4 5
4.	Maintain or improve my physical fitness.	I U 1 2 3 4 5
5.	Be active in community or church affairs.	I U 1 2 3 4 5
6.	Increase money income.	I U 1 2 3 4 5
7.	Learn and practice preventive techniques for heart disease and other diseases.	I U 1 2 3 4 5
8.	Obtain security - financial, etc.	I U 1 2 3 4 5
9.	Reduce debts or increase savings.	I U 1 2 3 4 5
10.	Maintain or achieve desirable weight.	I U 1 2 3 4 5
11.	Clothe myself and family attractively.	I U 1 2 3 4 5
12.	Maintain or improve the outside appearance of the house and yard.	I U 1 2 3 4 5

CARD

IMPORTANT	slightly 1 2 3 4 5	very
UNIMPORTANT	slightly 1 2 3 4 5	very

APPENDIX A-3b

M.S.U. Items

In this part I am interested in your child's attitude toward some foods. For each food I'd like for you to say how well your child likes or dislikes a food. Your child may like, dislike, neither like nor dislike but will eat, refuse to eat or never ate this food. (Showing cards with these responses one at a time and reading the response.)

I also would like to find out of the foods he does eat, how often he eats it and how much your child eats of it at one time.

The next page has a list of foods for which I would like your response. Let's start with apples.

Attitude:

0 = never ate
1 = likes
2 = dislikes
3 = neither likes nor dislikes but will eat
4 = refuses to eat

Frequency:

0 = never ate	0 = never ate
1 = daily	1 = once
2 = weekly	2 = two times
3 = monthly	3 = three times
4 = yearly	4 = four times
	5 = five times
	etc.

Amount: Food model number, homemaker's description or measurement.

	A		B		C	
	Child 1	Child 2	Child 1	Child 2	Child 1	Child 2
1. Apples						
2. Asparagus						
3. Beans, red						
4. Breads						
5. Broccoli						
6. Cantaloupe						
7. Carrots						
8. Cheese						
9. Cooked Cereal						
10. Corn						
11. Cranberries						
12. Eggs						
13. Fish						
14. Liver						
15. Milk						
16. Oranges						
17. Potatoes						
18. Poultry						
19. Squash						
20. Tomatoes						

People begin to develop food habits at an early age which involves food preferences and general attitudes toward food. Many things seem to influence them but we still need to learn a lot more. That is why I'd like to ask you a few questions about your family's food habits. (Food habits are different for each family and so there isn't any right or wrong answers.)

Do you have any questions before we begin?

1. How often do you prepare new foods for your family?

   0 = never
   1 = daily
   2 = weekly
   3 = monthly
   4 = six months
   5 = yearly

2. Does your child usually try these new foods willingly?

   1 = yes
   2 = no

3. Does your child refuse to eat any foods?

   1 = yes
   2 = no

4. Does your child ever miss meals?

   1 = yes
   2 = no

5. Does your child like most foods?

   1 = yes
   2 = no

6. Is your child hungry at meals?

   1 = yes
   2 = no
   3 = so so

7. When was the last time you prepared a new dish?

   0 = NA
   1 = past week
   2 = past month
   3 = past six months
   4 = past year

8. Does your child usually help you prepare these new dishes?

   1 = yes
   2 = no
   3 = sometimes

9. Does your child generally try new dishes willingly?

   1 = yes
   2 = no

10. Does your child help set the table at dinnertime?

    1 = always
    2 = sometimes
    3 = never

11. Does your child help clean up after a meal?

    1 = always
    2 = sometimes
    3 = never

12. Does your child ever help you prepare foods?

    1 = yes
    2 = no

13. If yes, how often does your child help you prepare foods?

    0 - NA
    1 = at least once a day
    2 = at least once a week
    3 = at least once a month
    4 = other, specify: _____

    and in what way does your child help you prepare foods?

    1 = mix, stir
    2 = pour
    3 = measure
    4 = getting ingredients and supplies
    5 = other, specify: _____

14. Does your child go to day care or nursery school?

    1 = yes
    2 = no

15. How many meals away from home does your child eat per week?

    0 ___, 1-2___, 3-4___, 5-6___, 7-8___, 9 or over_____

16. How many meals a week does your child eat at home?

    1-4___, 5-8___, 9-12___, 13-16___, 17-20___, 21-24___,

    25 and over _____

17. What kind of snacks does your child generally eat?

    1 = milk group
    2 = meat group
    3 = fruit and vegetable group
    4 = bread and cereal group
    5 = 'snack foods' (potato chips, pop, candy, etc.)
    6 = combination of above, specify: _____
    7 = other, specify: _____

18. Do you take your preschool child to the grocery store?

    1 = yes
    2 = no
    3 = sometimes

(If no, questionnaire is completed)

19. Do you allow your child to pick out some foods he (she) likes in the grocery store?

    1 = yes
    2 = no
    3 = sometimes

(If no, go to question 22)

20. What kind of foods does he(she) usually pick?

    1 = milk group
    2 = meat group
    3 = fruit and vegetable group
    4 = bread and cereal group
    5 = candy, pop, other 'snack foods'
    6 = combination, specify: _____
    7 = other, specify: _____

21. How many of these items do you usually let him (her) pick out?

    1____, 2____, 3____, 4____, 5 or more____

22. Does your child help you with your grocery shopping?

    1 = yes
    2 = no (If no, questionnaire is completed)
    3 = sometimes

23. How does your child help you with your grocery shopping?

    1 = finding foods
    2 = picking out foods from grocery list
    3 = other, specify: _____

For this part I would like to find out when your child last ate some foods. Here I have listed a few foods and I'd like for you to tell me how long ago you think it's been since your child ate these foods. It may have been within the last 7 days or week, within the last thirty days or month, within the last six months, within the last 12 months or year or never. (Show card as they are listed.) As I name a food I'd like for you to point to the card that comes closest.

0 = NA never ate
1 = within the last 7 days or week
2 = within the last 30 days or month
3 = within the last 6 months
4 = within the last 12 months or year

		Child 1	Child 2
1.	Beans, red		
2.	Broccoli		
3.	Carrots		
4.	Cheese		
5.	Cooked Cereal		
6.	Corn		
7.	Cranberries		
8.	Fish		
9.	Liver		
10.	Oranges		
11.	Squash		
12.	Tomatoes		

APPENDIX B

NUTRITION EDUCATION LEAFLETS

1. Make Room for Apples
2. Breads--"The Staff of Life"
3. A Forest of Broccoli
4. The Pleasures of Cantaloupe
5. Tips about Cheese
6. A Cupful of Corn
7. Colorful Cranberries
8. Eggs, Good at any Meal
9. Don't Forget Fish
10. The Goodness of Milk
11. Let Some Sunshine in Your Life with Oranges
12. An Event for Poultry
13. It's Time for Winter Squash
14. Tasty Tomatoes

FOOD TIPS FOR MOMS & TOTS

MAKE ROOM FOR APPLES

MOTHER -

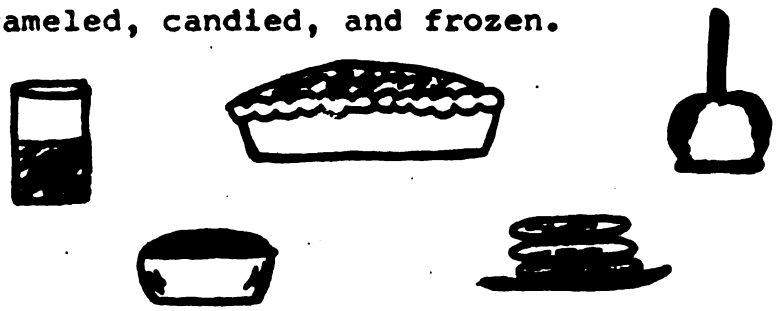
Apples have a little of a lot of different nutrients like vitamins A and C. Apples help to reach the amounts you and your child need every day.

Apples were brought to this country by early settlers and much credit for their population in the U. S. is given to John Chapman (Johnny Appleseed), a 19th century missionary who traveled the midwest planting apples and preaching the Gospel.

Crab apple is a smaller fruit more tough and fibrous and used mainly in jelly and pickling.

If you ever wondered how in the pictures they keep the apples looking so white it may be that they coated them with lemon or orange juice or they are in a sirupy mixture. Both methods prevent browning.

Apples can be used in many, many ways. To name a few: fried, baked, sauce, juice, dried, pies, crisps, cider, pancakes, canned, carameled, candied, and frozen.

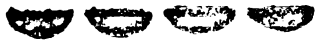
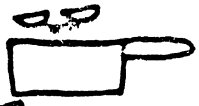
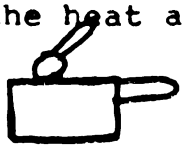
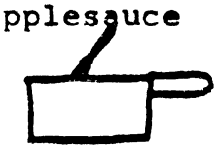
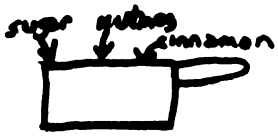
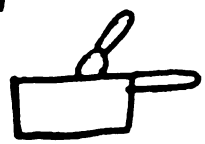


Apples are a good <u>easy</u> <u>snack</u> <u>food</u> for your children.

Making Applesauce

It is an interesting experience for your child. They can see how <u>firm</u> <u>raw</u> apples become <u>mushy</u>, <u>cooked</u> apples.

Ask your child to describe the apple and apple sauce. Let them taste the <u>cool</u> apple and the <u>warm</u> applesauce.

STEPS FOR:	MOTHER	CHILD
1.	4 medium cooking apples 	
	pared 	
	quartered 	
	cored 	
2.		Place apples in saucepan
3.		Help your child measure 1 cup water 
4.		Add water
5.	Heat the apples and water over medium heat to boiling	
6.	Once the apples and water **boil** reduce the heat and **simmer** 	
7.		Help your child to occasionally stir the applesauce
8.	Cook 5 to 10 minutes or until the apples are tender (test with a fork)	 
9.		Help your child measure  1/2 cup sugar  1/4 teaspoon cinnamon  1/8 teaspoon nutmeg
10.		Add sugar, cinnamon and nutmeg to cooked apples
11.		Stir until the sugar is dissolved
12.	**Then it is ready to serve or chill** (Makes 4 cups)	

Alternate Method: If you have a Foley Food Mill your child will enjoy using the Foley Food Mill on the cooked apples to make them mushy.

YOUR CHILD

Your child will need your help to learn this game. Follow the lines and motions and play the game together. Soon you will both know it.

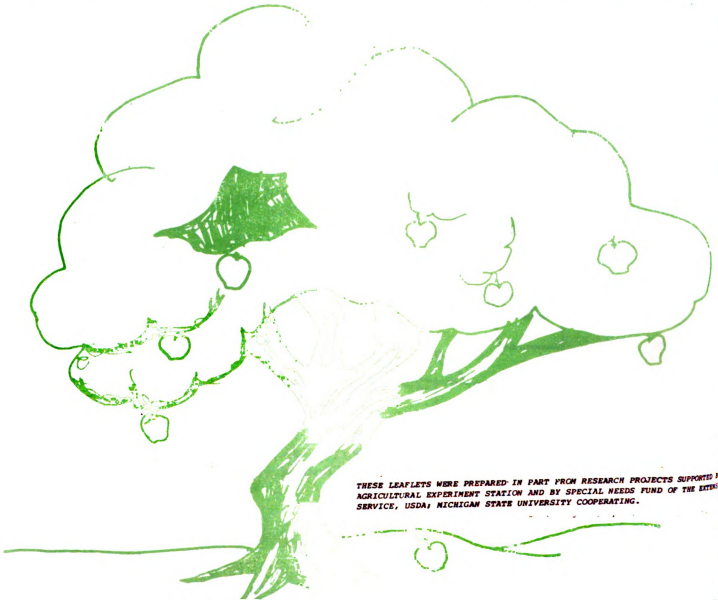
Apple Tree

Hold hands above head, form circles with thumb and forefinger of each hand.
Smile.
Put hands out as if on a tree and shake.
Hands above head and lower to ground.
Rub tummy.

AWAY UP HIGH IN THE APPLE TREE

TWO RED APPLES SMILED AT ME
I SHOOK THAT TREE AS HARD AS I COULD
AND DOWN THEY CAME,

AND H-MMMMMM WERE THEY GOOD!



THESE LEAFLETS WERE PREPARED IN PART FROM RESEARCH PROJECTS SUPORTED BY THE AGRICULTURAL EXPERIMENT STATION AND BY SPECIAL NEEDS FUND OF THE EXTENSION SERVICE, USDA; MICHIGAN STATE UNIVERSITY COOPERATING.

FOOD TIPS FOR MOMS & TOTS

BREADS - "THE STAFF OF LIFE"

MOTHER -

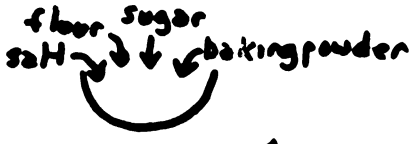
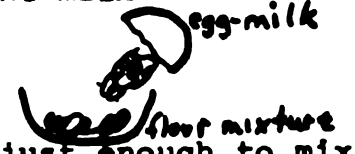
Breads are an important part of your and your child's diet. Breads are a good source of energy which is needed each day in your diets and also bread has some B vitamins. Most breads and flour are enriched and are important sources of B vitamins and iron. Whole wheat bread is also a good source of these nutrients.

Included in breads are quick breads -- popovers, griddle cakes, waffles, muffins, biscuits and pastry; or yeast breads -- rolls and coffee cakes.

Every culture has some type of bread and for a long time bread has been considered "the staff of life" and still is in some countries; but the form it takes varies from country to country. In Sweden, they eat limpa, a sweetened rye bread, the Norwegians eat a flat bread. The bread in Mexico is the tortilla. You can probably think of others.

YOU AND YOUR CHILD

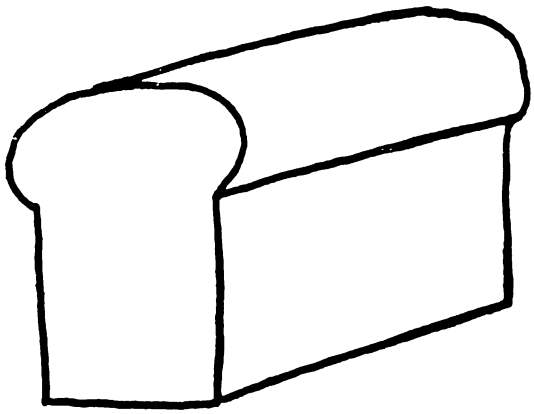
You and your child may want to try making bread. Here is a recipe for <u>peanut butter bread</u> -- remember, peanut butter is a good source of protein making the bread even more nutritious.

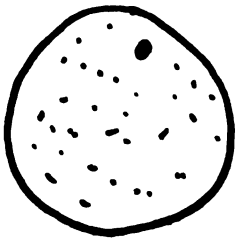
STEPS FOR:	MOTHER	CHILD
1.	Measure ingredients: 1 3/4 cups  flour 1/3 cup  sugar 1 tablespoon  baking powder 1 teaspoon salt 1 cup  peanut butter 2 eggs 1 1/2 cups  milk	
2.	Preheat oven at 350° (moderate oven 	
3.		Grease loaf pan
4.		Mix sifted flour, sugar, baking powder and salt in a large bowl
5.		Mix in the peanut butter with a fork until crumbly
6.		Beat eggs slightly in another bowl
7.		Add the milk
8.	Add the milk-egg mixture to the flour mixture 	
9.		Stir just enough to mix
10.	Fill the greased loaf pan half way 	
11.	Bake for one hour 	

YOUR CHILD

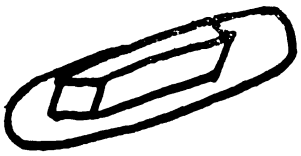
Help your child to name all the foods. Then, have your child point to the foods you can spread on bread.
Let them color all of the pictures.

potatoes





orange



butter

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FOOD TIPS FOR MOMS & TOTS

A FOREST OF BROCCOLI

MOTHER -

The Italian word broccoli means 'arm' or 'branch'. Like other cabbage-like vegetables, broccoli is thought to be native to the Mediterranean area and Asia Minor. Broccoli has been extensively used in the U. S. only in the last 25 years.

Broccoli is a very nutritious vegetable. Not only is it a very good source of vitamin A and C, but it also has some calcium, iron and riboflavin.

Broccoli is a tall cabbage plant with clusters of smaller flowers on top of a tall stalk. When buying broccoli look for: fresh, clean, compact bud clusters; firm and tender stems and branches. (Tough, woody stems and opened yellow buds show overmaturity.)

Ways to serve: buttered with salt and pepper; topped with different

seasoned butters or grated cheese or a cream sauce or a Hollandaise sauce; season with nutmeg or oregano. If broccoli is overcooked an undesirable strong flavor develops.

YOU AND YOUR CHILD

When you have mashed potatoes with your broccoli, have your child 'plant the little trees in the potatoes' before they eat them.

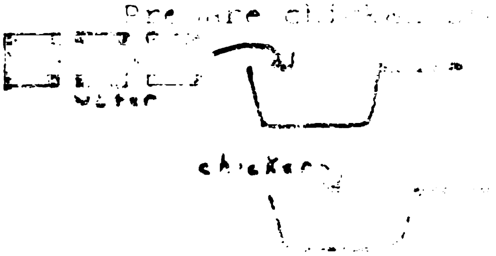
Explain to your child that broccoli is a tall plant and that the clusters on the top of the stalk are the flowers. Ask them what the color is -- is it green or red; what does it taste and smell like -- is it mild or strong.

Try this colorful [illegible]

[illegible]

STEPS FOR: [illegible]

1. Pre[illegible]re chi[illegible]:



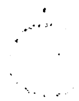
[illegible] water to a [illegible]

Add [illegible]

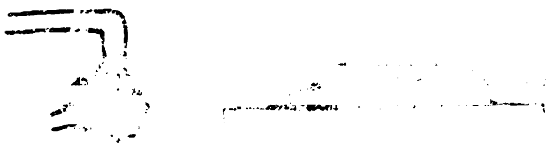
Bri[illegible] to boil; [illegible] heat an[illegible]

[illegible]

2. [illegible]



3. Trim off la[illegible] cut off tou[illegible] stems of 2 [illegible]li



4. [illegible] broccoli

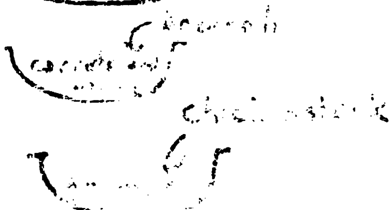
5. Clean and ch[illegible] 1/[illegible] carrots

6. Chop 3/4 cup [illegible] Me[illegible] 3/4 [illegible]

7. [illegible] ts and [illegible]

8. [illegible]

9. [illegible] crumbs)



10. Bake the vegetables until the[illegible] are tender (te[illegible]) about 1 hour

11. Serve.

YOUR CHILD

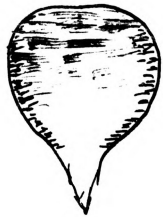
Name the foods, then have your child name them. Broccoli is a green vegetable. Help your child pick out the other green vegetables. Have your child color them. (Dark green vegetables are a good source of vitamin A.)

carrot

spinach

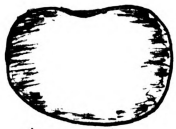
broccoli

escarole



rutabaga

asparagus



tomato

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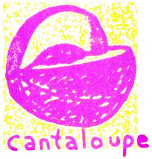
FOOD TIPS FOR MOMS & TOTS

THE PLEASURES OF CANTALOUPE

MOTHER -

You probably heard cantaloupe called muskmelon but really muskmelon also includes casaba and honeydew melons. Each of these melons are spherical , but the cantaloupe and casaba have a netted surface and orange flesh whereas honeydew melon is smooth with a greenish-white flesh.



Cantaloupe has a large amount of vitamin A and vitamin C needed for growth, vision, and repair of blood vessels.

Cantaloupe also has a large amount of water which is important for regulating many processes in the body like your body temperature.

Unlike vegetables which change from sugar to starch when ripening, fruits like cantaloupe change from starch to sugar when ripening.

Extra cantaloupe can be frozen in balls or cubes and covered with a syrup.

Cantaloupe may be served as a refreshing, tasty, low calorie dessert but it also can be used in salads, at breakfast and is especially good for lunch.

It can be fixed in many ways, mixed with other fruits. When you scoop out the seeds, fill it with other fruits or whatever that seems appropriate.

YOU AND YOUR CHILD

If you are making a fruit cup or fruit salad, let your child help scoop out the seeds and mix or arrange the fruit.

Help your children 'discover' cantaloupe! Ask your child if cantaloupe is sweet or sour, juicy or dry, orange or blue, firm or runny, is it chewy or crunchy.

Have your child inspect the whole cantaloupe; show them the 'netting' and how it is grown underneath the netting. Cut open the cantaloupe and have them inspect the inside; show them the seeds and have your child scoop out the seeds.

YOUR CHILD

In this game, point to each object and name them for your child, then have your child name the objects. Next, have your point to the things we eat. Have your child color all of the objects.

car

cheese

pear

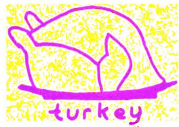
apple

shoe

hat

bread

purse



turkey

carrot

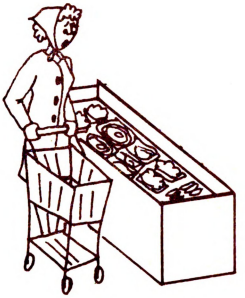
These leaflets were prepared in part from research projects supported by the Agricultural Experiment Station and by Special Needs Fund of the Extension Service, USDA; Michigan State University cooperating.

FOOD TIPS FOR MOMS & TOTS

TIPS ABOUT CHEESE

MOTHER -

It's a time for the high cost of meat. Because cheese is a good source of protein, cheese is various dishes can be used instead of meat to help keep your food cost down. (Protein is needed for building tissues in growth especially in childhood and pregnancy and also for the upkeep of tissues already built.)



Cheese, like milk, has a high amount of calcium. (Calcium is important for healthy bones and teeth in adults and especially for your growing children.)

Children need 2 to 3 cups of milk a day. If your children do not like milk, try using cheese as part of this amount. (2 slices of cheese, 3/4 cup macaroni and cheese is equal to 1 cup of milk.)

Uses of cheese with children - Cheese can be used as a finger food for snacks, in salads, sandwiches, cooked dishes, as a sauce and with desserts.

When preparing a meal with cheese this could be the time to have your children discover cheese with the 4 senses, smell, taste, sight and touch. Have them smell it, is it strong or mild; have them feel it, is it firm or runny; have them taste it, is it salty or sour, is it chewy or crunchy; and have them look at it, what color is it, does it have holes.

Did You Know:

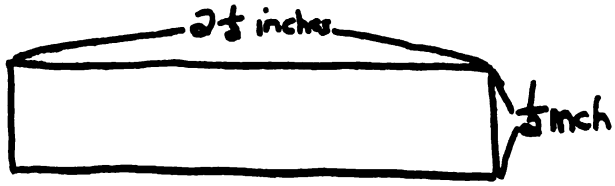
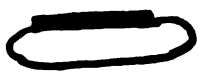
When milk is mixed with another substance and sets for a while, the milk becomes curdled or lumpy. The liquid (whey) is separated from the curds and these curds are pressed together. Sometimes the curds are cured for a longer period of time to develop the flavor.

'Cheese comes from milk'

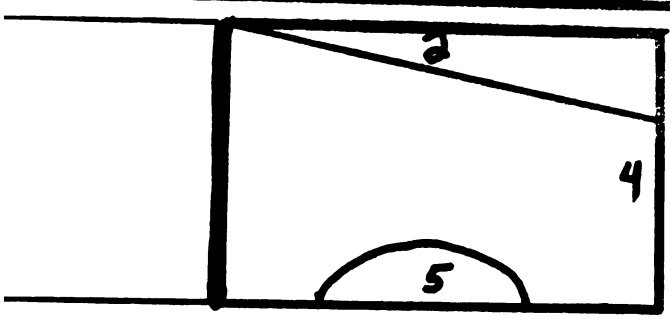
With this game compare milk and cheese with your child. Taste, smell, touch and look at milk and then cheese. (Milk is runny, white, mild, wet, a liquid and has no particular smell; whereas cheese is firm, different colors, some have a mild and some have a strong taste and smell.)

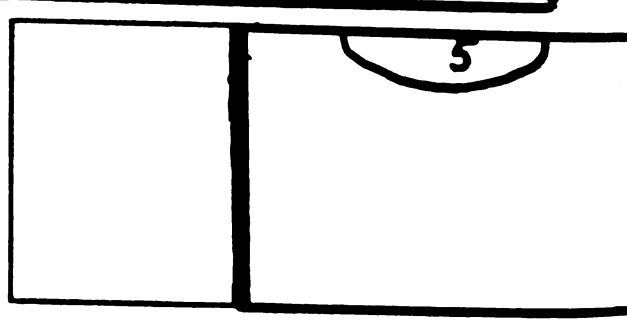
CHEESE BOATS

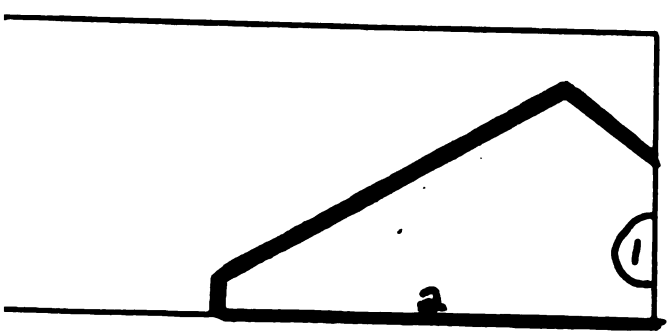
5 servings (2 hotdogs each)

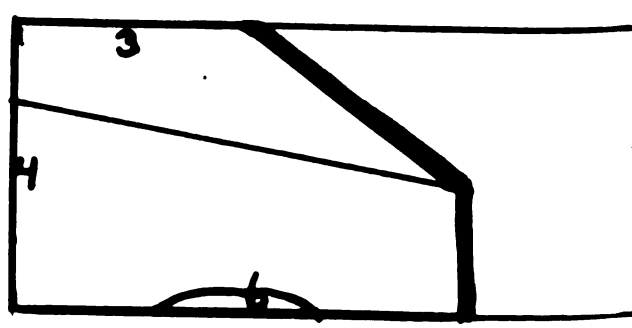
STEPS FOR:	MOTHER	CHILD
1.	Split 10 hotdogs lengthwise, not cutting through completely	
2.	Cut 10 strips of cheese, about 2½ x ½ x ¼	
3.		Place strip of cheese in split
4.		Wrap each with a slice of bacon
5.		Secure with tooth picks
6.	Place cut side down on broiler pan	
7.	Set oven control at Broil or 550° - Hot oven!	
8.	Broil 5 inches from heat about 10 minutes	
9.	When bacon is crisp, turn with tongs or fork	
10.	Broil until the other side is crisp about 5 minutes	
11.	Serve	

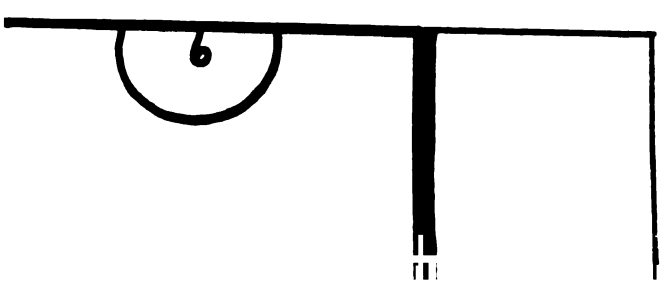
Explain to your child how he or she can play this game. Have them cut out the 6 rectangles below with blunt scissors. Help your child match 1 with 1, 2 with 2, and so on, and you will have a piece of cheese. Then, paste the piece of cheese together in the frame below.

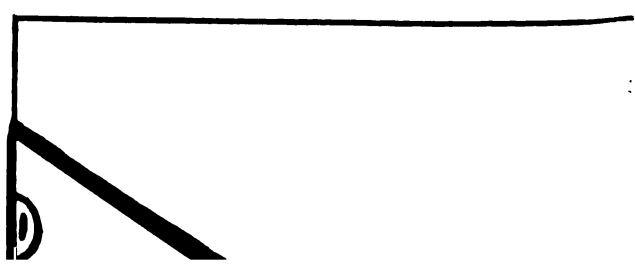












FOOD TIPS FOR MOMS & TOTS

A CUPFUL OF CORN

MOTHER -

Yellow corn is high in vitamin A but not white corn because vitamin A is carried in the yellow color. (Vitamin A is important for growth, vision and teeth development.)

Although corn is in widespread use around the world it is native to the Americas and was first grown by the Indians. It was quickly accepted in many other countries because it was easy to grow and ripened early.

Corn is made from many flowers. Each kernel is a flower and the silk is really the part that is used to fertilize the flower.

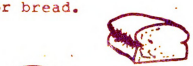
Young vegetables such as young corn have a high sugar content but as they mature it turns to starch.

These leaflets were prepared in part from research projects supported by the Agricultural Experiment Station and by Special Needs Fund of the Extension Service, USDA; Michigan State University cooperating.

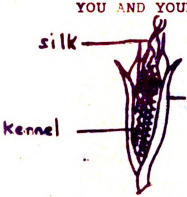
Because of its starch and vitamin content corn can be used instead of bread at a meal.

If you have freezer or shelf space, freezing or canning corn saves money. Corn can be frozen on or off the cob.

Have leftover corn? Use it in fritters, chowder and mixed with other vegetables. Fresh corn can be roasted or boiled or cut off and mixed with other vegetables. Corn meal can be made into corn meal mush, stuffing or bread.



YOU AND YOUR CHILD

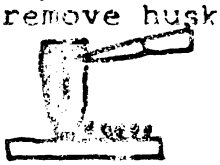
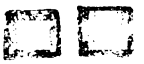
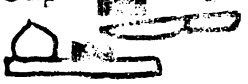
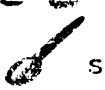
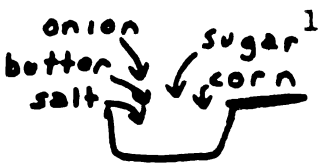
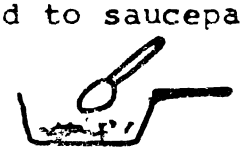
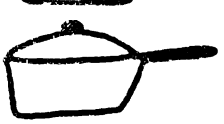
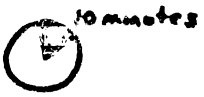
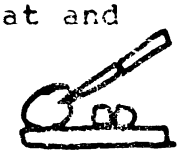
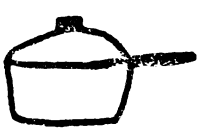


1. Show the husk covering the corn, the silk, kernels and cob and explain how corn comes from flowers.
   Have your children help husk the corn.

2. Add a little water to cornstarch and mix. Looks watery but is sticky.

3. Make popcorn - show the closed seed and explain how it 'explodes' when it is heated to expose the white popcorn.

4. Tomatoed Corn

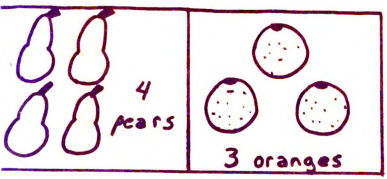
STEPS FOR:	MOTHER	CHILD
1.	4 ears of fresh corn  or 2 cups corn  If you are using fresh corn, remove husk and silk.	
2.	Cut kernels from the cob 	
3.		Measure 2 cups corn 
4.	Measure:	
	1/4 cup  butter	
	1/4 cup  chopped onion 	
	2 tablespoon  sugar	
	1/2 teaspoon  salt	
	1/4 cup  green pepper (optional) chopped	
5.		Add to saucepan
6.	Cook and stir over medium heat for a few minutes	
7.	Cover saucepan	
8.	Turn down to low heat and cook for 10 minutes	
9.	Cut up 1 tomato	
10.		Add to saucepan. Stir
11.	Cover. Cook 5 minutes longer.	 
12.	Serve.	

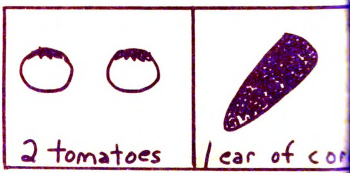
YOUR CHILD

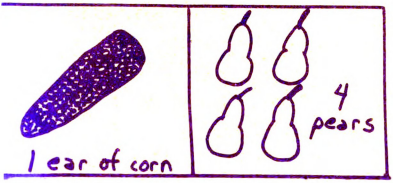
In this game help your child to cut out the rectangles with blunt scissors. Have them match the blocks with the same number and food, touch the edges of the blocks together.

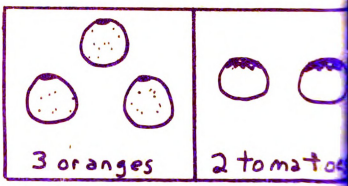
Example:

Help them paste the rectangles below in the right way inside the frame.







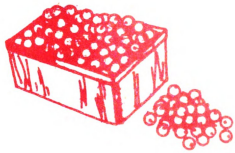


FOOD TIPS FOR MOMS & TOTS

COLORFUL CRANBERRIES

MOTHER -

Cranberries are an economical food which not only taste good, but also add color.



You can make your own sauce from fresh cranberries, or you can buy either whole cranberry sauce or jellied cranberry sauce. Either way they are delicious as an addition to any meal.

YOU AND YOUR CHILD

Using jellied cranberry sauce for dinner? Open a can of jellied cranberry sauce. Cut off a slice for your child to use.

Talk about the 4 senses. (taste, smell, touch and sight) Talk about the color and what other things are the same color. Let your child cut it with a fork - what does it feel like? Let him or her taste it - what does it taste like? What does it look like? When serving it for dinner let your child tell the rest of your family what he or she learned.

Stringing Cranberries and Popcorn

1. Buy fresh cranberries and/or pop some corn.

2. Use a darning needle with heavy thread.

3. Knot the thread.

4. Also knot around the first cranberry and so it won't fall off.

5. String the cranberries and/or popcorn to the length you want.

6. When you come to the end make sure to tie around the last cranberry like you did for the first one.

7. Many families use strings of cranberry and/or popcorn to decorate their Christmas trees.

Cranberry - Apple Crunch

Another way of serving cranberries is in a dessert. Here is a recipe that your child will like and you will, too. A nutritious recipe with apples, oatmeal and nuts.

Let your child compare the soft tangy cranberry sauce and crispy sweet apples.

STEPS FOR: MOTHER CHILD

1. Measure ingredients:

   1 cup whole cranberry sauce

   1 cup apples pared, cored, chopped

   1/2 cup quick-cooking rolled oats

   1/3 cup brown sugar, packed (press down)

   3 tablespoon flour

   1/4 teaspoon salt

   3 tablespoon melted butter or margarine (melt in small saucepan over low heat, when melted set aside)

   1/4 cup chopped nuts, if desired

2. Preheat oven at 350°

3. Grease 8 inch square baking pan

4. Combine cranberry sauce and apples in a bowl

5. Spread in the baking pan

6. Combine rolled oats, brown sugar, flour and salt. Add melted fat and mix until it is crumbly

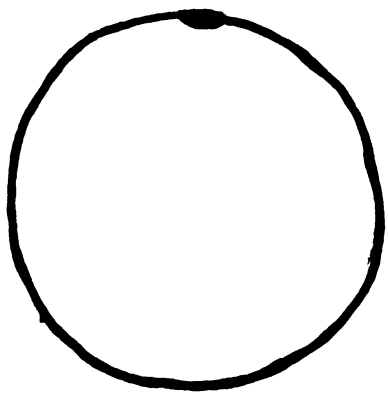
7. Sprinkle over fruit. Top with nuts, if desired

8. Bake 45 minutes or until apples are tender (test with a fork)

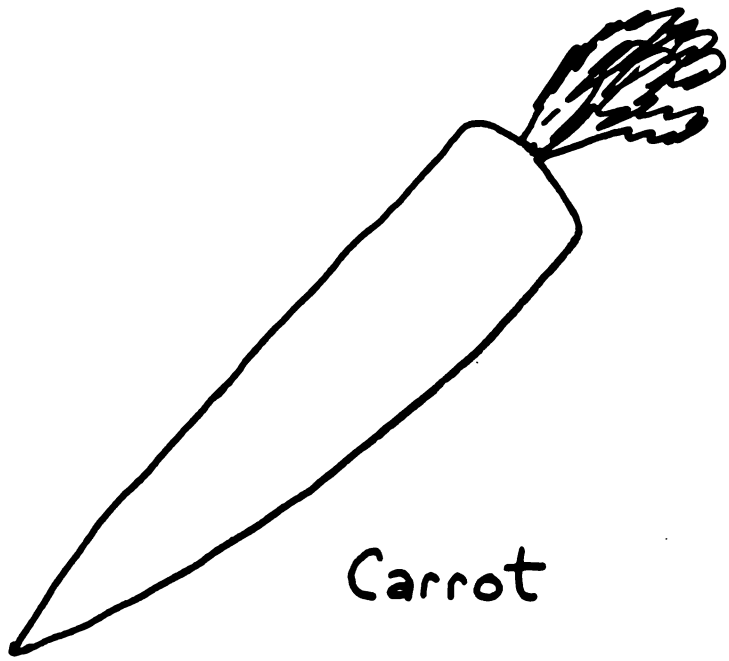
9. Serve warm.

YOUR CHILD

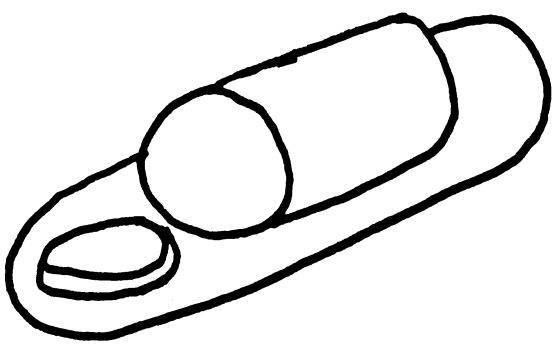
With this game help your child pick and color the food that is red, the one that is orange and the one that is yellow. Ask him to point to the food that is white.



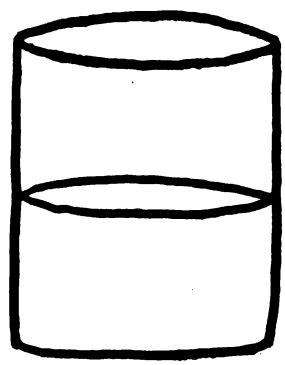
Grapefruit



Carrot



Cranberry Sauce



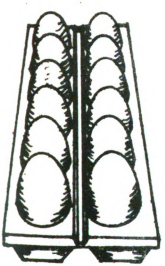
Milk

FOOD TIPS FOR MOMS & TOTS

EGGS, GOOD AT ANY MEAL

MOTHER -

Like meat and milk eggs are high in protein. Even with their rising cost they are still a bargain source of protein and other nutrients such as vitamin A which is needed for growth and to see well in dim lights.



Eggs can be cooked in many ways. How many of these have you or your children tried?

hard cooked
soft cooked
poached
scrambled
fried - 'sunny side up' or 'over easy'
omelet

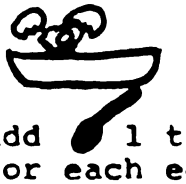
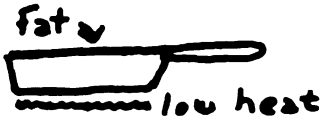
Eggs are also used for meringues, in custards, puddings and pie fillings, as coating such as for breading foods, a binder such as in meat loaf, and as a leavener when egg is beaten.

Egg combines well with many other foods such as meat, vegetables, cheese, and noodles.

YOU AND YOUR CHILD

Recipe for Scrambled Eggs

Scrambled eggs can show the child how the raw, runny eggs are changed to solid scrambled eggs.

STEPS FOR:	MOTHER	CHILD
1.		Use 0 or 00 eggs for each person
2.	Break the 00's into a bowl	
3.		Add 1 tablespoon of milk for each egg. (help the child measure)
4.		Season with salt and pepper
5.		Beat the mixture with a fork or wire whip until well blended
6.	If you want, add other ingredients to the egg mixture after it is well blended. (It is good plain, but some people like to add crispy fried bacon bits or 1/2 cup of cubed cheese.)	
7.	Melt just enough fat (margarine, oil, butter, or shortening) in frying pan to coat the bottom using low heat	
8.	Cook over low heat setting	
9.		Stir once and a while to let the uncooked portion flow to the bottom. (your child will need some help)
10.	Serve.	

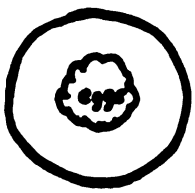
SERVING SUGGESTION

SCRAMBLED EGG BUTTERFLY

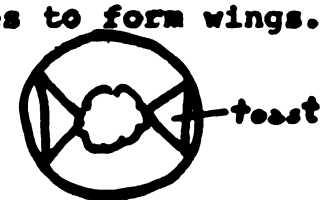
Make one slice of toast and butter it.

Cut it in half diagonally.

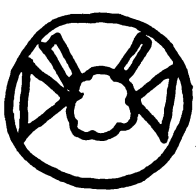
Place a mound of scrambled eggs in the middle of a plate.



Arrange toast triangles to form wings.

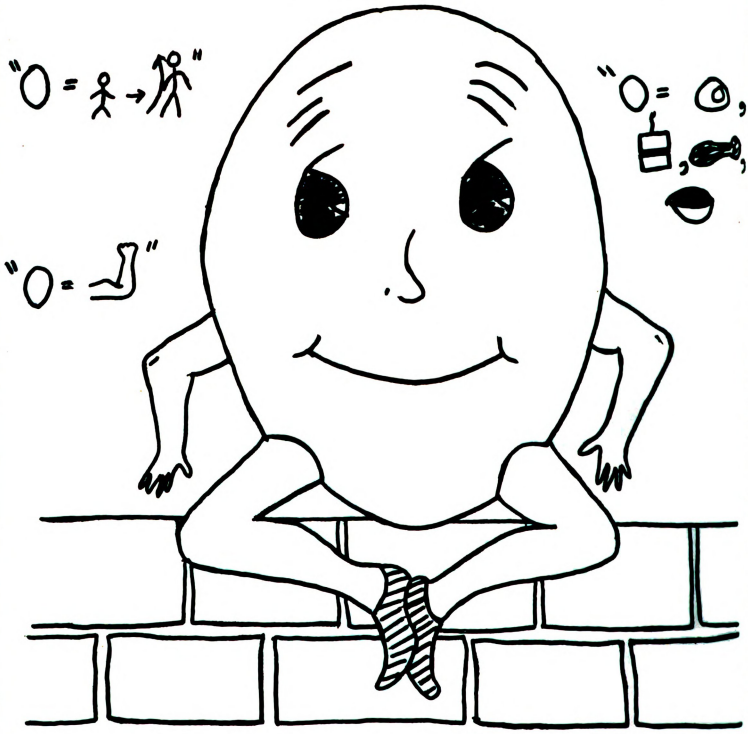


Use bacon strips, cheese chunks or carrot stick for feelers (or whatever else that's available).



YOUR CHILD

HUMPTY DUMPTY SAYS:



"Color Me"

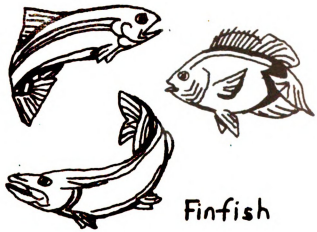
FOOD TIPS FOR MOMS & TOTS

DON'T FORGET FISH

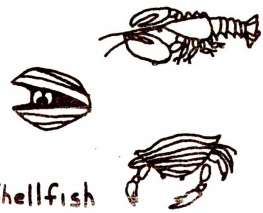
MOTHER -

Fish is another substitute for meat like cheese and fish also adds variety.

It contains the same amount of nutrients as meat except it is not as high in fat. Fish is a good protein source which means it builds and upkeeps your tissues.



Fish also has a high amount of niacin which is important in making compounds needed in the function of your body. Some iron is available in fish but not as much as meat.



There are two classes of fish - finfish (trout, cod, haddock) and shellfish (oysters, shrimp, lobster).

Fish is easy to prepare! Fat fish such as salmon can be broiled or baked. Lean fish such as cod and turbot can be brushed or basted with oil before broiling. Whole fish can be stuffed and

then baked. All fish can be steamed, fried, boiled or poached. To poach fish is just like for eggs, simmer in a salted or seasoned water until the fish flakes easily.

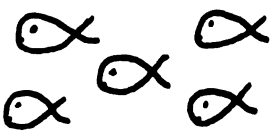
If you think fish is dull, try a seasoning of lemon or parsley butter. Fish can be used in salads and casseroles. Some fish are even used as appetizers - smoked and pickled.

YOU AND YOUR CHILD

'Fish' is an easy shape in which foods can be served. Try it with a tuna salad or with fruit. Let your child decorate by adding eyes, mouth fins, etc. with the foods you may have available.

If you have fresh fish available have them feel the <u>scales</u> and see how it is cleaned. Show the <u>bones</u> and how it gives the fish shape and also how our bones give us our shape. Have them feel their bones. Let them feel the fish. Also you can show them the <u>gills</u>, <u>mouth</u>, <u>insides</u> and tell them that these are used to keep the fish alive.

YOUR CHILD



<u>FIVE LITTLE FISHES</u>

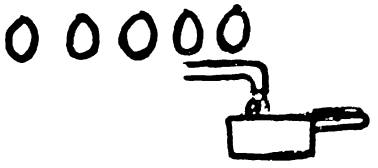
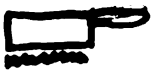
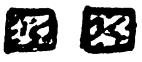
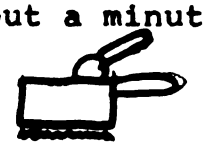
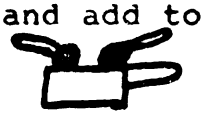
Your child will need your help to learn this game. Follow the lines and motions and play the game together. Soon you will both know it.

(Hold up 5 fingers, starting with the thumb, bend down one finger at a time as the verse progresses.)

FIVE LITTLE FISHES WERE SWIMMING NEAR THE SHORE
ONE TOOK A DIVE, THEN THERE WERE FOUR.
FOUR LITTLE FISHES WERE SWIMMING OUT TO SEA
ONE WENT FOR FOOD, THEN THERE WAS THREE.
THREE LITTLE FISHES SAID
"NOW WHAT SHALL WE DO?"
ONE SWAM AWAY AND THEN THERE WERE TWO.
TWO LITTLE FISHES WERE HAVING GREAT FUN,
BUT ONE TOOK A PLUNGE, THEN THERE WAS ONE.
ONE LITTLE FISH SAID:
"I LIKE THE WARM SUN."
(Put hand behind back) AWAY HE WENT AND THEN THERE WERE NONE.

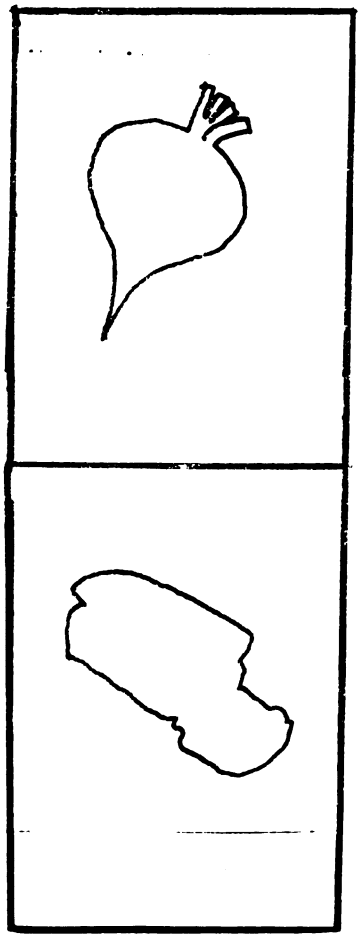
Fish and Egg Sauce

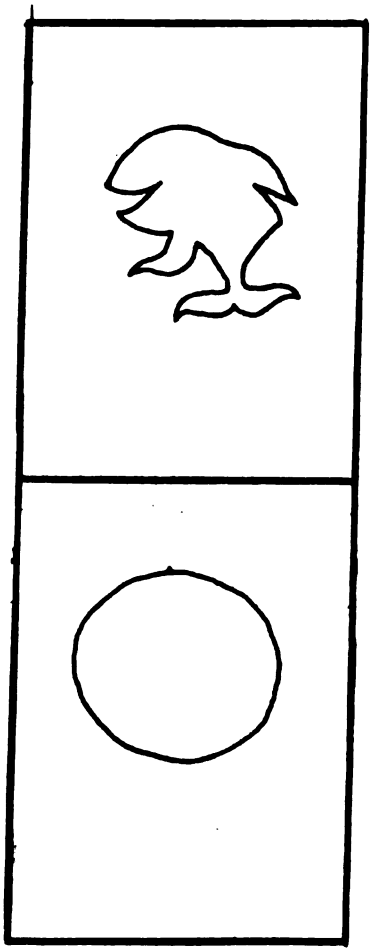
A simple nutritious recipe you and your family will enjoy. Let your child taste and describe the foods before they are mixed and after to see how the different tastes will blend together.

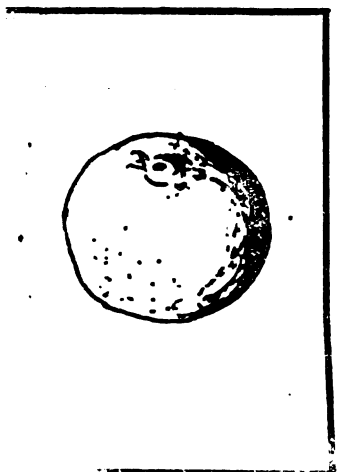
STEPS FOR:	MOTHER	CHILD
1.	Warm 5 eggs in warm water	
2.	Add enough water in a saucepan to cover the eggs	
3.	Heat water until it almost boils	
4.	Add warm eggs and turn heat down and simmer 20 minutes	
5.	Cool eggs in cold water	
6.		(Help your child measure) Measure 1/3 cup flour and 2/3 cup instant non-fat dry milk. Mix together in a bowl
7.		Measure 2 cups water and add to a saucepan. Set aside.
8.		Tap cool egg on hard surface to crack egg
9.		Roll between hands to help loosen the shell
10.	Open can of fish, drain (1 7 oz. can of tuna or 1 lb can of mackerel)	Peel. (Holding egg under running cold water may help ease off the shell)
11.	Sprinkle flour-milk mixture over water. Stir until it thickens. (Once it boils it will take about a minute) 	With a table knife cut the eggs into small pieces 
12.	Turn off heat	Measure 2 tablespoons butter or margarine and add to sauce 
13.		Add eggs and fish to sauce and stir until well blended 
14.	Season if desired	
15.	Serve on toast or over boiled noodles	

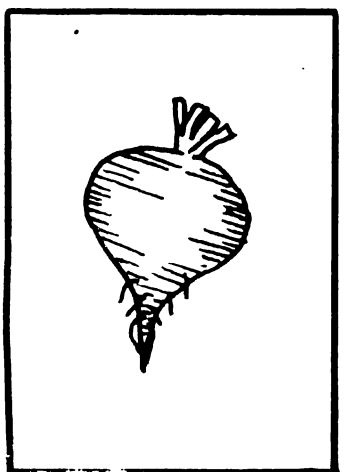
YOUR CHILD

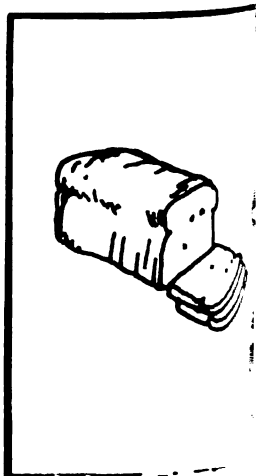
This is a game where you can help your child to cut out the foods in the rectangles at the bottom of this page with blunt scissors and have your child paste the foods onto the right shapes in the other rectangles. Once they dry have your child color them.











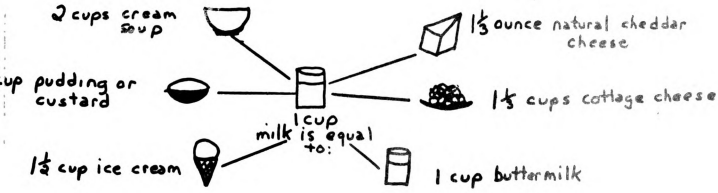
FOOD TIPS FOR MOMS & TOTS

THE GOODNESS OF MILK

MOTHER -

Everyone needs the goodness of milk. Children should have 1c + 1c to 1c + 1c + 1c cups of milk each day.

Milk can be served in many ways. If your child doesn't drink as much milk as he should, try serving:

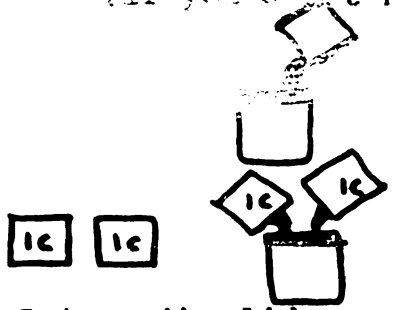


Milk provides the protein to help build muscle and blood. It also provides calcium which is important for building strong bones and teeth. Vitamin D found in milk also helps in building strong bones and teeth.

Powdered milk is a good source of protein and calcium and is also much more economical than buying fluid milk. Let your child help you make it -- he will see that water is a large part of milk, but milk has more than just water. Increase the protein content by adding powdered milk to: cooked cereals, cream soups, meatloaf, meatballs, mashed potatoes to name just a few.

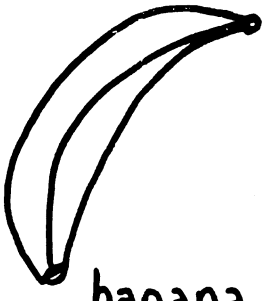
YOU AND YOUR CHILD

Instant Pudding

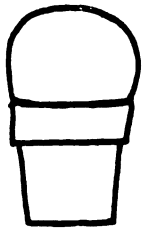
STEPS FOR:	MOTHER	CHILD
1.	Get 1 package of instant pudding 1 large jar with tight lid (if you don't have a jar use a bowl)	
2.		Pour 1 package of instant pudding into the jar
3.		Measure and add 2 cups milk
4.	Put on the lid	
5.		Shake until it thickens about 30 seconds (If you do not have a jar do the same thing only use a bowl and stir instead of shake. This takes longer but it works just as well. It's ready in about 2 minutes.)
6.	Pour into dishes; the pudding is ready to eat in 5 minutes. (If stored in the refrigerator, cover with wax paper or plastic wrap.)	
7.	Makes 4 - 1/2 cup servings	

YOUR CHILD

Milk is a part of many foods. Name each of the foods for your child and then have your child name them. Have them circle the foods made from milk. Let them color all of them.

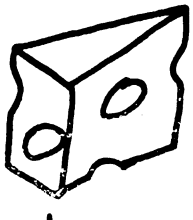


banana



ice cream

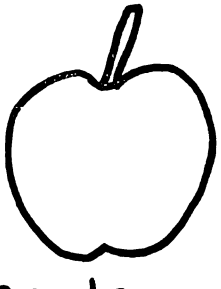
carrot



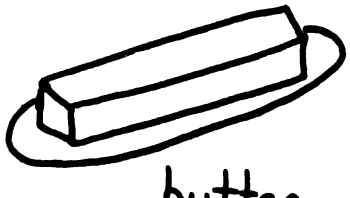
cheese

buttermilk

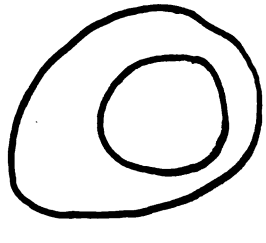
cottage cheese



apple



butter



egg

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FOOD TIPS FOR MOMS & TOTS

LET SOME SUNSHINE IN YOUR LIFE WITH ORANGES

MOTHER -

As you know oranges are a good source of vitamin C; 1 orange provides a preschool child with enough vitamin C for a whole day.

When you think of oranges you probably think of sweet oranges which are the most popular oranges but there are two other types of oranges, the mandarin from China and the sour orange from Spain.

Navel orange is named because of the umbilical mark on the blossom side of the fruit.

If you ever been to Florida, California or Texas you may have noticed that the oranges are not really orange on the trees but really a greenish-brown. Before they come to the stores coloring is added to the skin to make them orange.

Oranges are used for desserts, salads of all kinds, juice, at breakfast or anytime you may enjoy one. Oranges like apples

4. Covering the container and dirt with plastic wrap will help the seeds to sprout faster. The seedling should appear in 1 to 2 weeks. (You can keep the orange plant outside only when the weather is warm. Orange plants are sensitive to temperature changes.)

5. In about a month the seedling will grow shiny green leaves.

6. If you have the plant for a year or two it will blossom but only in certain climates will they have oranges.

Don't forget all plants need water and sunshine!

YOUR CHILD

Row of Boats

Have your mother take a knife and make a strip around the orange. Easy peel oranges work best, this includes most California oranges but usually not Florida oranges.

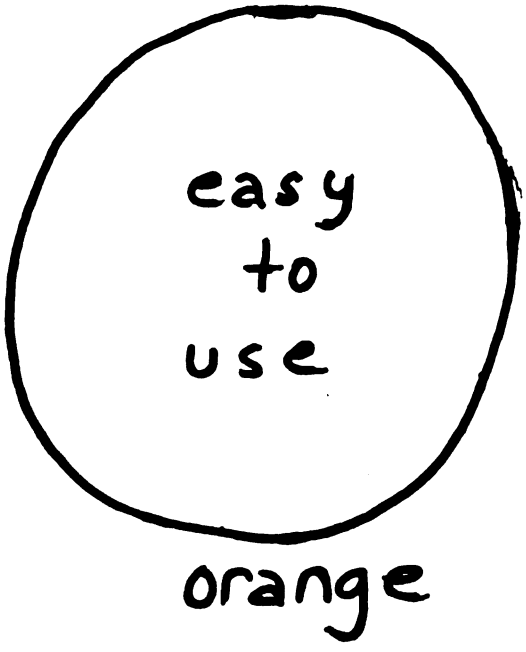
Leaving the strip, peel the rest of the orange.

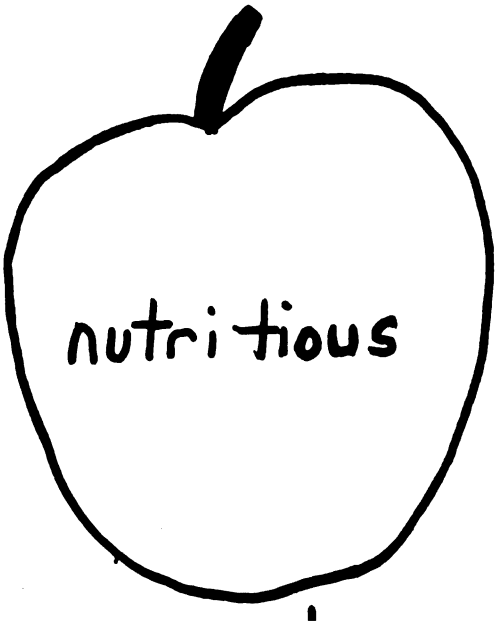
Split open the orange and you will have a row of boats!

This is a game for you to play with your child. Help them name the fruit and pick out the right color for the fruits (yellow, orange, red, or green). Read to your child the phrase that is on the fruit.

Then, let your child color the fruits.

Fruits are:





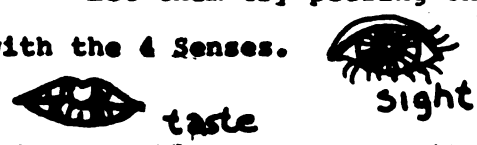
make a good easy snack food for your youngsters. The peeling is used for flavoring in some foods.

Orange drink is not orange juice and does not supply the nutrients like oranges. Orange drink is made with orange flavoring and sweetening.

YOU AND YOUR CHILD

Do your children like fresh squeezed orange juice? Well, let your children squeeze it next time. It is a good way for the preschool children to develop their small muscles (fingers, hands).

Let them try peeling one and let them discover oranges with the 4 Senses.



Ask your child what color it is; how does the outside covering (peel) feel - rough, smooth, waxy; how does it taste - sweet or sour; how does it look - square or round; how does the inside look - one piece or sections; and how does it smell - strong or mild.

Growing Orange Seeds

1. Take the bottom half of a plastic gallon container and fill with dirt until it is about 1 inch from the top
2. Place the seeds from an orange on the dirt and lightly cover with other dirt
3. Water

FOOD TIPS FOR MOMS & TOTS

AN EVENT FOR POULTRY

MOTHER -

The holidays are just around the corner -- time for turkey. But don't forget about whole chicken for those smaller families who get tired of turkey leftovers.

When buying either turkey or chicken plan on 2 to 3 servings per pound.

Thawing a frozen turkey is safest if done in the refrigerator it takes about 24 hours for every 6 pounds - an 18 pound turkey will take 3 days. Be sure to keep it tightly wrapped. If thawed at room temperature be sure it is tightly wrapped with several layers of newspaper or placed in a doubled brown grocery bag tightly sealed.

Do you know the difference between "stuffing" and "dressing"? Stuffing is placed inside a thawed turkey or other meat and cooked with it -- dressing is baked in a separate container. The food is the same.

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YOU AND YOUR CHILD

Giblet Stuffing for Poultry

STEPS FOR:	MOTHER	CHILD
1.	Measure ingredients:	
		
	3/4 cup minced onion	
	1 1/2 cups chopped celery (stalks and leaves)	
	1 cup or 2 sticks margarine	
	9 cups soft bread cubes	
	2 teaspoon salt	
	1 1/2 teaspoons crushed sage leaves (optional)	
	instead of these seasonings you can use 2t poultry seasoning	
	1 teaspoon thyme leaves (optional)	
	1/2 teaspoon pepper	
	giblets (liver, heart, gizzard, neck)	
2.	Simmer heart, gizzard from the chicken or turkey in seasoned water 1 to 2 hours until tender	
3.	Add the liver the last 5 to 15 minutes of cooking	
4.	Drain the water off the giblets. Chop.	
5.	Melt the butter in a large frying pan. Add the onions and celery. Cook until onions are tender.	

MOTHER CHILD

6. 

Add in about 1/3 of the bread cubes. Stir.

7. Turn into a deep bowl.

8. 

Add remaining ingredients and toss. (Also, giblets)

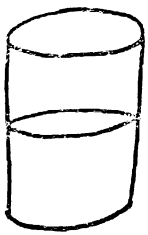
9. Stuff turkey just before roasting. (Don't let the warm stuffing set in the bird; stuff the bird when you are ready to cook it)

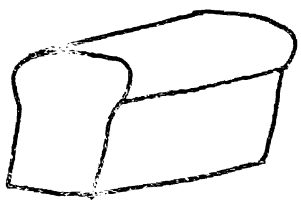
Makes 9 cups. Enough for a 12 pound turkey. (Need ¾ cup stuffing per pound of poultry)

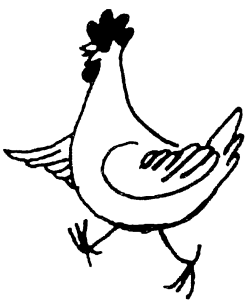
YOUR CHILD

Food Comes From?

Talk to your child about where we get our food. Then, let him draw a line to the plant or animal from which the food came.







FOOD TIPS FOR MOMS & TOTS

IT'S TIME FOR WINTER SQUASH

MOTHER -

Squash is native to the Americas.

Some names for winter squash that may be found in your stores are Acorn (Table Queen), Butternut, Buttercup and Hubbard. They have a tough, ridged green or yellow-orange rind.

Squash can be served in many different ways. Here are some of these ways -- either buttered with salt and pepper or removed from the rind and mashed with one or two of the following: cream, nutmeg, brown sugar, crumbled crisply fried bacon, candied ginger, grated orange peel or orange juice.

Squash is a good source for alot of different nutrients such as vitamin A, needed for growth and seeing in dim light, vitamin C needed for healthy gums and repair of blood vessels; and that's not all, squash also provides some calcium needed for healthy bones and teeth and some iron needed to carry oxygen in your body.

Winter squash lasts a long time when stored in a cool, dry, well ventilated area.

YOU AND YOUR CHILD

GROW SOME SQUASH SEEDS

1. Cut off the bottom half of a plastic gallon container.

2. Fill with dirt until it is about an inch from the top.

3. Place about 4 or 5 squash seeds on top of the dirt and cover with some other dirt. Water. Set the container in a sunny area.

4. In a week or two the seedlings will sprout.

5. Within a month large green leaves will begin to appear.

Have some extra apples then try them with your squash.

Here's a recipe to do just that.

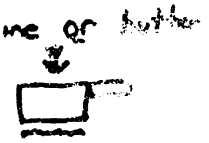
Squash and Apple Bake
(Makes 6 servings)

STEPS FOR: MOTHER CHILD

1. Measure ingredients:

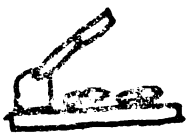
   2 pounds butternut or buttercup squash

   1/2 cup  brown sugar, packed (press down)

   1/4 cup  butter or margarine, melted in small saucepan 

   1 tablespoon  salt

   1/2 teaspoon  mace, if desired

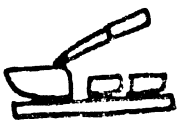
   2 baking apples 
   washed, cored, 
   cut into 1/2 inch slices 

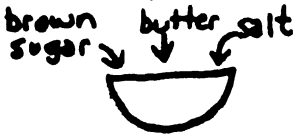
2. Heat oven to 350° 

3. Cut squash in half 

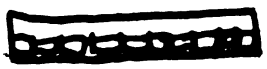
4.  Remove seeds and fibers

5. Pare squash 

6. Cut into 1/2 inch slices 

7. 

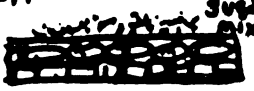
   Stir together remaining ingredients, except apple slices, in a bowl

8. 

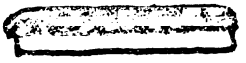
   Arrange squash in ungreased large baking dish

9. 

   Top with apple slices.

10. 

    Sprinkle sugar mixture over top

11. Cover with foil and bake 50 to 60 minutes or until squash tender (test with a fork) 

YOUR CHILD

In this game help your child by pointing to the food and naming it, then have your child name the foods. Help them pick out the vegetables. Have them color the vegetables.

THESE LEAFLETS WERE PREPARED IN PART FROM RESEARCH PROJECTS SUPPORTED BY THE AGRICULTURAL EXPERIMENT STATION AND BY SPECIAL NEEDS FUND OF THE EXTENSION SERVICE, USDA; MICHIGAN STATE UNIVERSITY COOPERATING.

FOOD TIPS FOR MOMS & TOTS

TASTY TOMATOES

MOTHER -

Tomatoes are a good source of vitamin C. This is important for growing bodies, as well as for adults. Vitamin C helps keep gums healthy and plays an important part in the blood, too.

Since tomatoes grow from flowers and have seeds they are really fruits but people eat them like vegetables.

When cooking tomatoes, the heat destroys some of their vitamin C so don't forget to sometimes serve tomatoes raw.

Have you tried these different varieties of fresh tomatoes?

1. the typical round tomato
2. the oval shaped Italian tomato
3. the tiny cherry tomato

Canned tomato products also come in many ways -- tomato paste, tomato sauce, tomato puree, tomato juice, tomato soup, tomato catsup, canned tomatoes.

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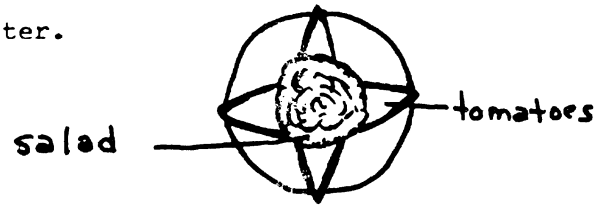
Serving Idea

Wash a tomato and cut it into wedges. You may want to remove the skin if it is thick.

Have your child place 4 wedges on a plate and put a scoop of tuna or chicken salad in the center.



Big kids like it too!

Family Goulash

STEPS FOR:	MOTHER	CHILD

1. Measure ingredients:

4 oz. noodles

1 lb. ground beef

1 medium onion , chopped

1 lb. (16 oz.) corn

1/4 lb. grated cheese or slithered cheese food about ½ cup

1/2 cup catsup

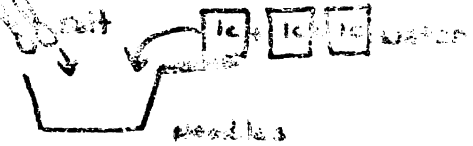
1 can (14 1/2 oz.) tomatoes

2 teaspoon salt

1/4 teaspoon pepper

1 green pepper , chopped (optional)

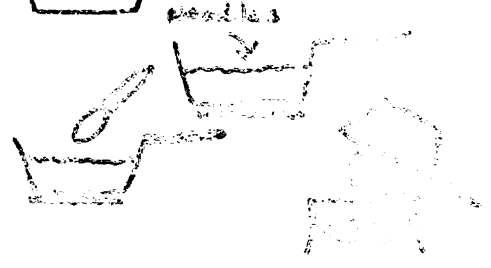
2. Add 3 cups water and2 teaspoon to sauce pan



3. Bring to boil and add noodles

4. Boil uncovered, stirring occasionally for 7 - 10 minutes

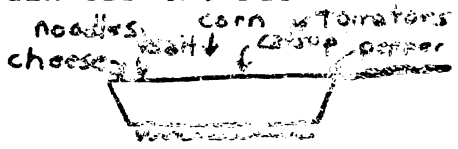
5. Drain in sieve of colander



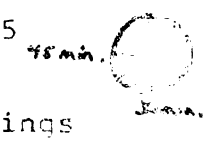
6. While noodles cook, cook and stir ground beef and onion in large skillet until meat is brown and onion is tender

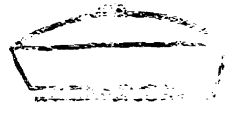
7. Drain off the fat

8. Stir in drained noodles, corn cheese, catsup, tomatoes, salt and pepper



9. Cover and simmer for 30-45 minutes.

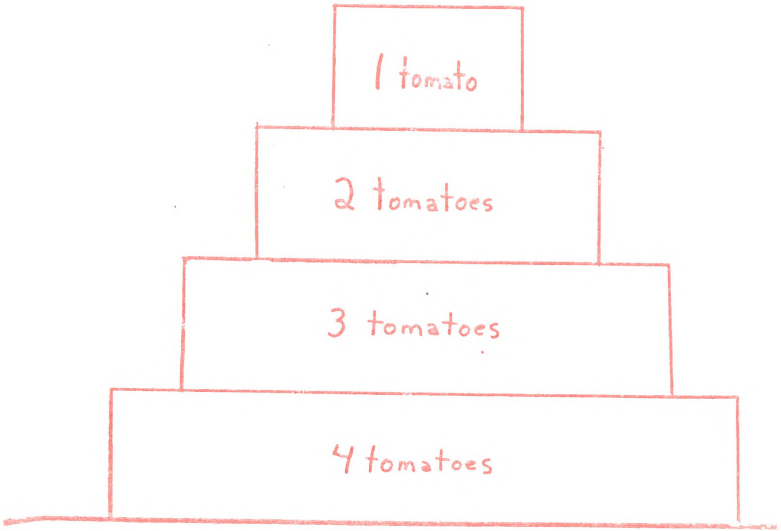


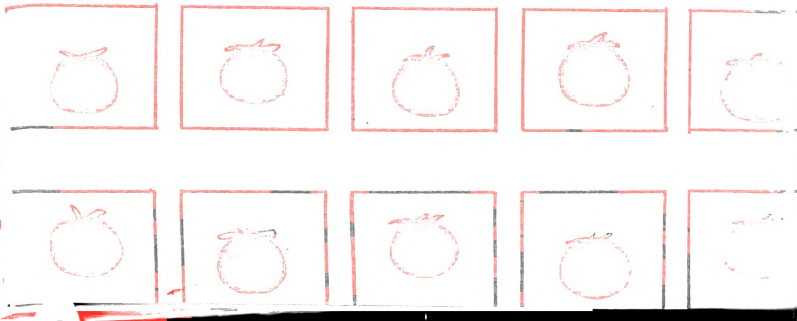


10. Serve. Makes 5 to 6 servings

YOUR CHILD

Help your child countdown the tomatoes by having him cut out with blunt scissors 4 squares of tomatoes from the bottom and paste in the rectangle "4 tomatoes"; 3 squares of tomatoes for "3 tomatoes"; 2 squares of tomatoes for "2 tomatoes" and finally 1 square of tomato for "1 tomato".





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