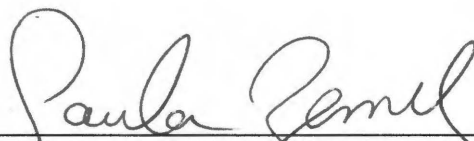


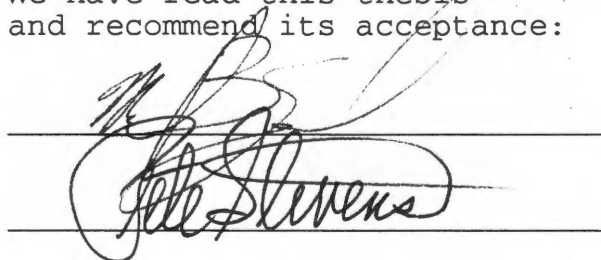
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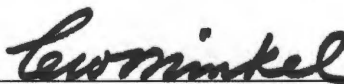


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Identification and Evaluation of Nutrition Education
Materials For Use In Kindergarten

A Thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Mary Katherine Powers

December, 1993

DEDICATION

This thesis is dedicated to my son Casey Patrick Powers.

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ABSTRACT

The purpose of this project was to determine the extent to which nutrition education lesson plans address the objectives covered in a kindergarten curriculum that is representative of other kindergarten curricula across the United States. Incorporating nutrition education into the kindergarten curriculum can allow children to be exposed to nutrition more often without adding additional subject areas and time to teachers' busy schedules.

We recruited volunteer teachers in a metropolitan school system and provided continuing education on the Dietary Guidelines. Teachers determined that four of the Dietary Guidelines were developmentally appropriate for kindergarten students and evaluated 400 lesson plans as to appropriateness for kindergarten and the subject areas addressed. 102 lesson plans were evaluated according to content areas, including language arts, math, social studies, science, health, physical development, art, and music. Content analysis was used to compare the subjects and objectives addressed in the lesson plans to the kindergarten curriculum guide. We found that 77% of the kindergarten curriculum was covered by the nutrition lesson plans. The percent of lesson plans that addressed each content area ranged from 5% for physical development to 78% for language arts. The percent of kindergarten curriculum objectives covered, based on the number of lesson plans that

addressed each content area, ranged from 17% for social studies to 65% for math. The combined efforts of a teacher and a nutrition educator could identify or develop nutrition lesson plans that address the objectives of the kindergarten curriculum.

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PART I

Introduction, Background and Significance of Research

INTRODUCTION

Lifestyle factors in early childhood, including eating patterns, have been associated with disease risk later in life (1,2). For example, serum protein and lipoprotein levels assessed during childhood have been shown to be good predictors of levels in young adulthood (2). Other investigators also found an association between eating patterns and cardiovascular risk factors (3). Therefore, it appears to be important for educators and parents to intervene at an early age with nutrition and food education so children will have the background to make appropriate food choices.

Increasing nutrition education in the schools has been addressed by Healthy People 2000 as a needed objective that can be attained by the schools. This objective states that we should strive to

...increase to at least 75 percent the proportion of the nation's schools that provide nutrition education from preschool through 12th grade, preferably as part of quality school health education (4).

Because dietary habits are established during childhood, comprehensive nutrition education between preschool and 12th grade would give children the knowledge and skills they need to make healthy food choices during the time when they are beginning to make their own food choices (4).

The family is important in developing children's eating habits (5). Therefore, it is important to incorporate a

parent component into an education program. Parent involvement programs can have a great effect on the children, parents, school system, and the community by fostering involvement. In addition, parents can become involved in their children's education as advocates, decision makers, volunteers, paraprofessionals, learners, instructors, or as the audience (6,7). Parent involvement is an important component of nutrition education that can maximize benefits of nutrition education for the child and the family. In particular, there is a need for more parent involvement in elementary nutrition education (7).

Children and their understanding of nutrition and the value of food choices has become a major research topic because of the recent connection between childhood eating patterns and diseases in adulthood. Many children of elementary school age understand that fruits and vegetables are beneficial. However, many do not understand that their eating habits can effect their health later in life. Early elementary age children need more education on nutrition principles such as balance, variety, and moderation (8). The principles illustrated in the *Food Guide Pyramid* (9), which serves as a food guide for implementing the *Dietary Guidelines* (10), can be helpful in conveying these messages. However, there are currently few food and nutrition education resources that are based on the *Pyramid* (9) and the *Guidelines* (10) available to incorporate into a

curriculum.

Presently, there is a movement in professional school organizations to develop a national health curriculum that would potentially improve the children's health and ability to learn. A national health curriculum would not only pave the way for comprehensive health education, but would also promote restructuring of the health care system for children by supporting school-based and community based health care (11).

Many schools are introducing the idea of a *whole language* approach, which is a literature-based, child-centered approach to the curriculum that allows each child to pursue his or her own interests (12). This type of curriculum could provide a curriculum base to integrate health and nutrition education into all facets of the curriculum. Some teachers report that *whole language learning* has broadened the scope of children's knowledge and increased the rate at which children can progress (13). Other schools are having success with a science-centered curriculum that fuses a previously fragmented curriculum into united subject areas (14).

Nutrition education materials could serve as a component in a *whole language* curriculum and provide a link between health education and the kindergarten curriculum. Therefore, the purpose of this project is to compare nutrition education lesson plans to be identified for the

kindergarten classes of Knox County, Tennessee with the *Tennessee Kindergarten Curriculum Guides* (15). This project was planned to address the following specific aims:

- (1) Identify nutrition education lesson plans for Knox County Kindergarten
 - A. Locate possible sources of lesson plans
 - B. Determine *Dietary Guidelines* appropriate for use in Kindergarten (10)
 - C. Assign each lesson plan to one of the *Dietary Guidelines* in 'B' (10)
 - D. Determine which lesson plans are appropriate for use in kindergarten
- (2) Conduct a content analysis to determine the extent to which nutrition education could be incorporated into the kindergarten curriculum
 - A. Determine the subject areas in which the kindergarten teachers of Knox County would use each lesson plan
 - B. Conduct a content analysis of the nutrition lesson plans identified for Knox County kindergarten
 - C. Compare the results of the content analysis to the *Tennessee Kindergarten Curriculum Guides* (15)

BACKGROUND AND SIGNIFICANCE

In order to address the specific aims identified for this project, research from several areas of nutrition and education need to be evaluated. Specifically, these areas include

- Need for nutrition education in the schools;
- Use of the *Dietary Guidelines* (10);
- Use of the *USDA Food Guide Pyramid* (9);
- Parent involvement in education;
- Development of young children;
- Approaches to the elementary curriculum; and
- Content analysis.

Need for Nutrition Education in the Schools

Recent studies have shown that child behaviors making them more at risk for heart disease in adulthood is increasing. Blood cholesterol levels and obesity during childhood have been linked to heart disease, obesity, hypertension, and cancer. From 1984 to 1991 the percentage of overweight children aged three to seventeen has increased from 24 percent to 34 percent. Boys are more likely to be overweight than girls, lower income levels more than higher levels, African American more than Caucasian, and older children more than younger children (16). There has also been an increase in high blood pressure and cholesterol levels among children. There are specific segments of the elementary school population who need nutrition education for specific problems such as obesity (16). Nutrition

education in the school system is an efficient way to reach most of the nation's children because 95 percent of all children are enrolled in schools. Schools can teach healthy food choices through the school food service, communication and curricula, school athletic programs, and school programs involving the family (17).

In 1985, only twelve states required nutrition education as a part of the school curriculum. This problem is addressed by Healthy People 2000 which states a need for expanding nutrition education in the schools (4). A recent survey of children showed an understanding of the basic concepts of a healthy diet, including eating fruits and vegetables, but indicated children need more structured nutrition education in order to form healthy eating habits (16). In addition, although the majority of children know that good health is related to a nutritious diet, they are not incorporating this knowledge into their food choices (4,18). They also do not understand that an increase in the risk of chronic disease can be caused by increased salt, fat, and sugar in the diet. Although 21 percent of children think about nutrition when making food choices, 65 percent choose candy for snacks (19). This is of great importance today because more children are responsible for preparing meals (20).

Recently, the American School Food Service Association (ASFSa) emphasized the need for nutrition education in their

Nutrition Integrity Policy. This policy states, in part, "...to ensure the integrity of child nutrition programs and maximize benefits to students..." The policy recommends an emphasis on increasing variety of foods and dietary fiber and reducing fat, sodium, and sugar in school meals. The policy also recommends that nutrition education be an integral part of the curriculum through high school (21). Zemel and Huntsinger surveyed elementary school teachers in Knox County, Tennessee, who reported that 96% of the teachers teach about foods and nutrition in their classrooms. Respondents reported that they teach nutrition within a variety of subject areas including health, science, language arts, reading, art, math, and social studies. They also reported using a variety of different resources for the teaching of foods and nutrition, but expressed a need for new materials and inservice training on teaching about foods and nutrition (22).

Shannon and coworkers conducted a three year nutrition education study and found that the nutrition education program greatly increased the levels of nutrition knowledge in the children, but not necessarily their attitudes and behaviors. The researchers concluded that attitudes and behaviors would come later and have a great effect, if there was a knowledge base to build on. They indicated the nutrition education program was adequate for the needs of the children (23). Contento and associates also found that

knowledge about nutrition could be increased in the children, but a change in their attitudes and behaviors would require a cognitive theory based approach and a parent component (5).

The amount of time currently devoted to nutrition education can either be used to increase knowledge of nutrition or to change attitudes and behaviors. Many educational methods can be used to elicit gains in nutrition knowledge. However, cognitive theory based methods are needed in order to change behavioral skills, self-efficacy, and behavioral intentions (5). The social-cognitive theory, which emphasizes the importance of role models in a child's life, has been adapted from classical and operant conditioning. Proponents of this theory believe that children do not always need reinforcement to learn. Rather, children learn and imitate behaviors from the important adults in their lives. The proponents of this theory also believe that children can learn from observation and do not need personal experience to learn (24).

Support from administrators has been shown to be an influential factor in nutrition education programs (25). Frongillo and coworkers also found that administrators play an important role in the nutrition education programs of their schools. Research is needed to discover how administrators and teachers can work together to promote foods and nutrition education (26).

Nutrition education can increase the nutrition knowledge of children, and, with parent involvement, it can help shape healthy attitudes about nutrition, which can foster healthy food choices. School based nutrition education should include experiences in the classroom as well as in the cafeteria. Nutrition education integrated into the science or health curriculum is beneficial, but integration into other areas of the curriculum can help reinforce the principles of nutrition education (19) without adding another subject to the teachers' already busy schedule (14). Access to healthy foods and parental support can greatly increase the likelihood that children will use their knowledge to make healthy food choices (19).

Use of the Dietary Guidelines

Zemel and Huntsinger reported that teachers would benefit from access to a comprehensive nutrition curriculum and inservice education addressing the *Dietary Guidelines*. Nutrition education materials need to address a variety of areas so that they can be used across the curriculum (22). Demicco found that school food services did not implement the *Dietary Guidelines* (10) for a variety of reasons, including the lack of classroom education and parental support (27). A nutrition education curriculum which incorporates the *Dietary Guidelines* (10) could bring the

support needed to implement these *Guidelines* in the cafeteria.

Use of the USDA Food Guide Pyramid

The *USDA Food Pyramid* (9) (Appendix A) can add to the effectiveness by giving an easy visual for the children to follow. The *Pyramid* is based on the *Dietary Guidelines* (10) and on research by the USDA representing the best food choices and the nutrients in these foods. The average American diet contains too much fat. Therefore, the *Pyramid* focuses on the amount of fat in each food group. This can help one keep total fat and saturated fat intakes low. A diet low in fat can then improve health and help maintain weight (9). This is especially important due to the recommendations of the National Cholesterol Education Program (28) that state that all children over two years of age should receive no more than 30% of their total calories from fat.

Recent research has found that the *Pyramid* (9) is understandable across all ages, races, and income levels. Therefore, it can be quite useful in the elementary classroom. If added to the curriculum, the *Pyramid* could teach children moderation, proportion, and variety, three areas which are lacking from the knowledge of elementary children and may influence food choices (29).

Parent Involvement in Education

Researchers at the Center on Families, Communities, Schools, and Children's Learning found that children from households with more knowledgeable, encouraging, and involved parents are higher achievers and exhibit more positive attitudes and behaviors. They also found that the majority of parents want to become involved in their children's education, but are discouraged by the school system. The researchers stated that parents can become involved in their child's education as a communicator, a volunteer, a teacher, and a representative of other parents and the community (30). Fuller stated that in order to improve parental involvement, the schools must understand the families from which their students come, and communication between schools and parents provides a better education for the students (31).

Nutrition education programs for young children should incorporate a parent component which could include phone calls or meetings with parents and worksheets to be sent home with children (5). Roberts-Grey et al. found that changes in knowledge and attitudes will not always bring about changes in behavior (25). A model is needed that will adequately address knowledge, attitudes, and behavior.

In a study of kindergarten through third grade classes, parents reported their children's dietary intake for the

previous 24-hours. Children in the parent plus student instruction groups reported a higher quality and diversity diet as compared to students who only received instruction (32). Cognitive scores of students in kindergarten and first grade were higher in the schools with parent involvement programs. A follow up study showed that these children made better food choices five years later in pre-adolescence and early adolescence (33). Similarly, a study using the Minnesota Heart Health Program in the third and fourth grades showed that children in the school-plus parent involvement group had significantly more behavior change, reduced fat intakes, and more nutritious choices on their food shelves than those who were in the school based group. The researchers concluded that parent involvement can elicit changes in behavior that can lead to changes in attitudes about food choices (34).

Development of young children

Young children can especially benefit from integrating nutrition education throughout their curriculum because of their developmental readiness. Between the ages of three and five, a child masters many basic skills including fine motor development. Lesson plans that involve preparation of food can be used in a variety of subject areas including math, language, science, colors, shapes sizes, and culture.

Research has shown that preschool children are able to categorize foods into food groups and are able to identify nutrient dense foods (35).

Preschool children whose parents demonstrated healthy eating habits were able to group foods, recognize origins of food, and make simple choices according to energy balances even if they did not understand why they were making these choices (36). However, many parents rely on the child-care or school setting to help their children develop proper eating behaviors because of the time spent in these facilities.

Food behavior development of the four to six year old child may influence food behaviors later in life, thus influencing health status (37). Inclusion of nutrition education in the schools is essential to help children today form healthy eating habits. However, few schools include nutrition education as part of a mandated curriculum.

Approaches to the Elementary Curriculum

In order to maximize benefits for students and teachers, elementary schools are introducing new approaches to the elementary school curriculum. *Whole language learning*, a child-centered, literature-based approach, has been shown to increase knowledge and skills of the children involved in the program (12). Other schools systems are

using a science-centered approach which unites the previously fragmented curriculum by related science to the lessons in each subject area (14). The philosophy of the kindergarten curriculum based on the belief that children at this age can think creatively and begin to develop the foundation of their education (38).

Whole language learning in the kindergarten curriculum

Whole language learning is one philosophical basis for the elementary school curriculum. In a *whole language* setting, the children learn the skills of reading and writing by participating in reading and writing. The philosophy is that the child must learn the "whole" of what they are learning in order to internalize the importance of learning the skills to obtain the "whole". This type of teaching is child-centered as opposed to teacher-centered (39).

Whole language learning involves reading, writing, talking, and viewing in every lesson. It is language kept whole. It is child-centered in the respect that the curriculum encompasses broad themes in which each child can pursue his or her own interests. It is literature-based, and requires a large amount of reading by or to the child. In *whole language learning*, children are encouraged to write even before they have learned spelling or grammar. The

children are also encouraged to observe and verbally express their thoughts and feelings. Whole language learning is activity based. Children are expected to use what they have learned and continue learning through activities that center on specific objectives (12).

This type of learning follows Piaget's theory of cognition (39). This theory states that children interact with the environment in a certain way, and they change these interactions as they gain new insight and information. According to Piaget, the ordering of thought is called a schemata. Children assimilate, or fit new ideas into their existing schemata and accommodate, or change their schemata as a result of the new information (24). Children learn through experimentation and interaction of real reading and writing experiences. The technique of accurate reading and writing comes later (39).

Nutrition education could provide the experimentation and interaction needed for a whole language approach. Furthermore, because nutrition education can be accommodated to teach a variety of subjects, it could serve as the link to connect subjects that have previously been fragmented and unrelated.

Science-centered curriculum

The California State Department of Education has developed a program to unite the entire curriculum. This program, California Science Framework, replaces the commonly fragmented curriculum with separate, unrelated subject areas. Teachers were asked to develop a theme for each month of the school year that would blend science, language arts, social studies, mathematics, and fine arts. Unlike other improvement programs, the teachers were not asked to add another subject to their already busy schedule. Instead, they were asked to unite the subject areas, making science the ingredient that unites the other subjects. For example, the students were asked to read and write about science and solve science problems using math skills.

At the end of the first year of implementation, statistically significant gains in student achievement and teacher creativity were shown (14). Potentially, this framework could be used to incorporate a *whole language* approach and an educational program with health and nutrition as the link that connects all subject areas.

Kindergarten curriculum

In their *Kindergarten Curriculum Guide*, Bell and associates explain that the philosophy of kindergarten is

based on the belief that the kindergarten child is in his formative years (38). They believe that at this age, children must begin to think and communicate creatively and cooperatively. They also believe that some academic concepts can be developed during these years. Included in the goals of the kindergarten curriculum are the following:

- to assist the child in understanding the relationship between written and oral language;

- to help each child understand the concept of "number";

- to help each child understand that science is everywhere; and

- to establish good health habits.

The subject areas included in the guide include art, health and nutrition, language arts, math, music, physical education, social studies, play, and science. Knowledge of these concepts and subjects could be achieved through a whole language curriculum which includes nutrition education (38).

The *Tennessee Kindergarten Curriculum Guide* (15) (Appendix B) includes many of the subjects that Bell and associates suggest, including language arts, mathematics, social studies, science, health, physical education, visual art, music, computer education. The language arts curriculum includes grammar, spelling and word identification, comprehension, alphabetizing skills and writing readiness. The mathematics curriculum includes

numeration, whole-number operations, measurement and geometry. Many other states, including Virginia, Idaho, Oregon, Connecticut, Arkansas, Pennsylvania, Mississippi, Maryland, Kentucky, and Alaska have similar curricula (40-50). Therefore, if materials were identified that met the Tennessee educational objectives for these areas and included nutrition education; Then these materials would likely be applicable to other state curricula as well.

The Arkansas State Department of Education developed a nutrition education curriculum that would be an added subject rather than being integrated into other subjects (45). This curriculum includes six major concepts:

- food is essential for all living things;
- nutrition is the food you eat and how the body uses it;
- food is made up of different nutrients needed for health and growth;
- all persons need the same nutrients, but in different amounts;
- food production and sanitation affect food quality; and
- eating is a behavioral activity affecting individuals emotionally, socially, and physiologically.

A kindergarten curriculum incorporating nutrition would be more beneficial because it would allow nutrition to be taught throughout the entire year without requiring more class time or omission of other subject areas.

Content Analysis

A content analysis is "a technique for making inferences by objectively and systematically identifying specified characteristics of messages" (51). The raw material used for conducting a content analysis is usually some form of written material. Content analysis is usually used to provide descriptive information, cross validation of research findings, or testing of hypotheses. This study used content analysis to provide descriptive information. The researcher can determine where the emphasis lies after the data have been collected (51).

There are some advantages to content analysis techniques. The content analysis studies text or transcripts of human communication, which are the central aspects of social interaction. The content analysis combines both qualitative and quantitative operations on the materials. The content analysis is unobtrusive and will not have an effect on the data being collected (52).

The central theme in a content analysis is the classification of many words of a text into several categories. In order for inferences to be valid, the classification procedure must be reliable, consistent, and checked by another coder. There is no right way to do content analysis. Each investigator must use methods appropriate for the research (52).

A content analysis can be used for a variety of research materials. Story and Faulkner used a content analysis to analyze the eating behaviors and food messages in television program content and commercials. They found that food references occur about 4.8 times per thirty minutes and over half were low nutrient items (53). Brown used a content analysis to describe food and nutrition programming of The Agricultural Extension Agency. She analyzed the program content, target audience, delivery methods, evaluation tools, and expected impact (54). Content analysis has also been used to analyze methods of nutrition presentation in high school textbooks (55) and frequency of sugar containing foods in elementary reading materials (56). Thus, content analysis is a useful technique for describing and evaluating nutrition education.

Summary

Current research illustrates the importance of reaching young children with nutrition education. A nutrition education program incorporating parent involvement can effectively elicit gains in knowledge of nutrition and changes in attitudes about food choices. The *Dietary Guidelines* provide a basis for developing nutrition education materials for use in kindergarten. Integrating nutrition and health into the curriculum would create a

whole language learning base for the current kindergarten curriculum. A content analysis is an appropriate means for determining whether or not nutrition and health can be integrated into the kindergarten curriculum while abiding by the requirements of the curriculum model.

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APPENDICES

APPENDIX A
USDA Food Guide Pyramid

Food Guide Pyramid

A Guide to Daily Food Choices

Fats, Oils, & Sweets
USE SPARINGLY

KEY
☐ Fat (naturally occurring and added) ☒ Sugars (added)
 These symbols show fats, oils, and added sugars in foods.

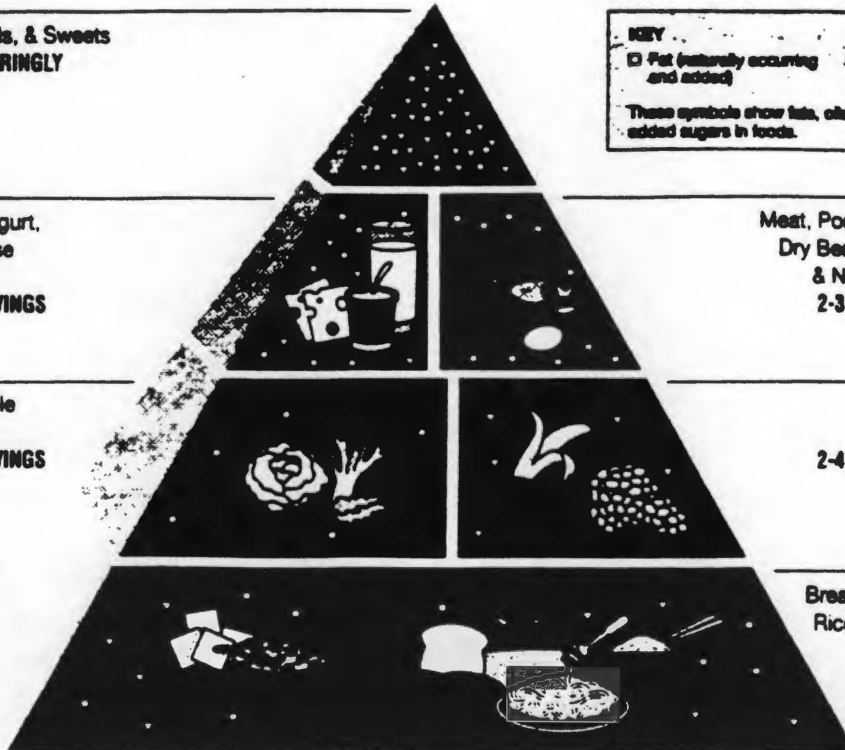
Milk, Yogurt, & Cheese Group
2-3 SERVINGS

Meat, Poultry, Fish, Dry Beans, Eggs, & Nuts Group
2-3 SERVINGS

Vegetable Group
3-5 SERVINGS

Fruit Group
2-4 SERVINGS

Bread, Cereal, Rice, & Pasta Group
6-11 SERVINGS



APPENDIX B
Tennessee Kindergarten Curriculum Guides

LANGUAGE ARTS

KINDERGARTEN

MECHANICS:

The student will identify correct capitalization and ending punctuation.

- Develop skill in gross motor functioning.
- Develop fine motor functioning.
- Develop hand-eye coordination.
- Recognize likenesses and differences of objects and pictures.
- Classify objects and pictures.
- Follow progression such as left-to-right, top-to-bottom, and front-to-back.
- Position paper properly and hold a crayon or pencil correctly.
- Discriminate and identify uppercase and lowercase letters.
- Print own first name.
- Recognize own name when printed.
- Speak in complete sentences.
- Ask questions.

SPELLING AND WORD IDENTIFICATION TECHNIQUES:

The student will use correct pronunciation to identify sounds and words, and recognize correctly spelled words. (Although this is a domain statement for all grade levels, kindergarten students are not expected to read or to spell words.)

- Verbalize own experiences, needs, and wants.
- Make and describe observations.
- Ask questions.
- Use vocabulary necessary to describe self.
- Recognize rhyme, rhythm, and repetition in spoken words or literature.
- Name common objects.
- Speak clearly and politely.
- Enjoy being read to by others.
- Recognize own name when printed.
- Develop skill in auditory discrimination.
- Recognize and name letters of the alphabet.

COMPREHENSION:

The student will answer questions about a reading selection.

- Listen to simple stories and retell.
- Listen to answer questions, predict an event or outcome, find the main idea, or identify sequence.
- Repeat simple verses from memory.
- Describe and interpret contents of a picture.

REFERENCE STUDY:

The student will use alphabetizing skills.

- Recognize and name letters of the alphabet.

WRITING READINESS* :

The student will demonstrate the ability to use writing readiness skills.

- Verbalize own experiences, needs, and wants.
- Make and describe observations.
- Use vocabulary necessary to describe self.
- Recognize that everyone has experiences to write about.
- Recognize that writing can entertain and inform.

The skills in Writing Readiness are not subject to be tested within the domains of the criterion referenced portion of the TCAP Achievement Test.

MATHEMATICS

KINDERGARTEN

NUMERATION:

The student will identify, order, and compare numbers.

- Recognize and show which is larger/smaller, longer/shorter, taller/shorter, etc., when given two similar objects.
- Recognize and show terms of relative position (above, under, right, behind, etc.).
- Identify equivalent sets (1–10) by one-to-one correspondence.
- Identify sets of 1–5 on sight.
- Count to 10; identify numerals 0–10.
- Tell which of two numbers is less or which is greater up to 10.

WHOLE NUMBER/INTEGER OPERATIONS:

The student will compute using whole numbers.

- Show and state that when objects are taken from a set, the set becomes smaller.
- Show and state that when objects are added to a set, the set becomes larger.

MEASUREMENT:

The student will identify and apply knowledge of time, money value, and measurement concepts.

- Identify a penny and a nickel.
- Recognize clocks and watches as instruments for measuring time.
- Recognize the thermometer as a device to measure temperatures.

GEOMETRY:

The student will identify basic geometric shapes.

- Identify, match, and reproduce shapes with given shapes (circle, square, triangle, and rectangle).
- Match terms with given shapes.

SOCIAL STUDIES KINDERGARTEN

Kindergarten students should be able to do the following:

- Know individuals have a space or develop an understanding of space and spatial relationships.
- Know individuals live in an environment and environments differ.
- Be aware what a globe and map represent.
- Know individuals have a personal history (state name, birthdate, address, family members).
- Recognize that things change over time (seasons of the year, people and objects).
- Be aware the laws and rules we follow are decided by the people (school, community, country).
- Recognize the need for rules for daily living and fair treatment of others.
- Recognize that a person born into a country is a citizen of that country.
- Recognize that individuals meet their needs/wants in different ways.
- Recognize that people usually work to satisfy needs and wants by doing different jobs.
- Be aware individuals choose jobs they like and can do well.
- Recognize all jobs are important and some jobs are dependent on other jobs.
- Recognize the worth of each individual including self.
- Recognize the behavior of individuals may be changed by relationships with others.
- Recognize individuals learn to do things from their culture.
- Be aware many jobs require that people work together.
- Understand some differences among people are a result of their culture.
- Develop an understanding of the spatial relationship of the home to the school.
- Recognize each family has a family tree.
- Be aware schools have changed through the years.
- Understand why families need rules.
- Understand cooperation is necessary when working within large and small groups to complete tasks.
- Know that family structures change.
- Be aware every culture has a family unit which determines the ways families do things.
- Understand people need shelter and shelters differ according to the culture and the environment.
- Recognize how jobs are similar/different from one community to another.
- Be aware of the contributions of different cultures.
- Be aware of similarities and differences of food, clothes, homes, games and families in different cultures.
- Know people travel from place to place by different means of transportation.
- Know land and water forms affect types of transportation.
- Know means of transportation have changed over the years and will continue to change.
- Know rules of safety including signs and signals.
- Be aware that people pay to use public transportation.
- Be aware different types of transportation provide jobs for people.
- Know means of transportation may differ in different cultures.
- Know different aspects of the environment including land forms, water, natural and man-made features.
- Understand there are rules to protect the environment.
- Recognize that pollution can be detrimental to personal health and jobs.
- Be aware of jobs related to working with and protecting the environment.

- Be aware that the ways people use environmental resources are determined by their culture.
- Be aware pollution of one area of the environment may affect other areas of the total environment.

SCIENCE

KINDERGARTEN

Kindergarten students should be able to do the following:

- Understand electricity is not only useful but can be dangerous.
- Learn the importance of observing safety rules when using electricity.
- Learn magnets can both attract and repel.
- Recognize the basic properties of magnets.
- Recognize there are different kinds and sources of sound.
- Recognize the basic properties of sound.
- Understand animals reproduce by having young and some animal young are like the adult.
- Realize animals live in a variety of habitats and seasonal changes affect animals.
- Understand plants as living things and how they grow and change.
- Identify the major parts of a plant.
- Distinguish similarities and differences among human beings.
- Identify the body part associated with the sensory system.
- Understand humans experience the world through their senses.
- Realize weather conditions change from day to day.
- Realize rocks are part of the earth's composition and have properties.
- Develop an appreciation for the earth's environment and the necessity for keeping it clean.
- Realize how people affect the environment (past, present, future).

HEALTH

KINDERGARTEN

Kindergarten students should be able to do the following:

- Identify communities in which students live.
- Identify health helpers and their roles in the community.
- Understand individual responsibilities in promoting good health practices.
- Identify factors that determine choices in selecting health products and services.
- Understand individual responsibility in prevention of illness.
- Identify resources for the treatment of illnesses.
- Identify AIDS as a communicable disease.
- Identify various kinds of pollution within the immediate environment.
- Identify ways of controlling pollution.
- Recognize the importance of various feelings in family relationships.
- Identify the individual uniqueness of family members.
- Recognize variations of family structure.
- Be aware of individual differences and similarities.
- Identify healthy ways in which feelings may be expressed.
- Be aware of ways to deal with unpleasant situations.
- Be aware of the importance of accepting a variety of foods.
- Identify various foods within the four food groups.
- Identify examples of healthy snacks.
- Be aware of the seven dietary guidelines for Americans.
- Identify basic health practices that influence physical appearance.
- Identify the five senses and match the body parts with each one.
- Identify safety rules and practices to be followed in daily life activity.
- Identify safe practices in the use of medicines and drugs in keeping people healthy.
- Be aware of the importance of choosing not to use tobacco, illicit drugs, or alcohol.

PHYSICAL EDUCATION

KINDERGARTEN

Kindergarten students should be able to do the following:

- Be aware of the relationships of basic locomotor skills to various games and sports.
- Be aware of the importance of manipulative skills to various games and sports.
- Be aware of spatial relationships in games and sports.
- Understand the basic rules of safety for gymnastics.
- Demonstrate various beginner gymnastics skills and how to self-test for these skills.
- Demonstrate increased confidence in movement as body control is developed.
- Be aware of the role of body movement and control in developing physical fitness.
- Be aware of the relationship between rhythmic body movement and accompaniment.
- Be aware of the interrelationship of body movement, space, and time.
- Be aware of the role of body movement in the expression of feeling and ideas.

VISUAL ART

KINDERGARTEN

Kindergarten students should be able to do the following:

- Recognize line and the characteristics of long, short, thick, thin, zig-zag and wavy lines.
- Recognize that closure of a line creates a shape.
- Recognize that lines can create happy, sad, angry, surprised, or other feelings.
- Recognize that every object has a basic shape.
- Recognize that shapes can be found within shapes.
- Recognize that parts relate to a whole (shapes connected and overlapping create objects).
- Describe objects in terms of their shapes (triangle = Teepee; circle = apple, etc.).
- Recognize that basic shapes relate to basic forms (square/cube; triangle/cone; circle/sphere).
- Describe surfaces in terms of rough, sticky, bumpy, or smooth textural qualities.
- Recognize red, blue, and yellow as primary colors.
- Develop skill in mixing primary colors to make secondary colors (red and yellow = orange, yellow and blue = green, blue and red = purple).
- Use white to change a color to a tint.
- Use black to change a color to a shade.
- Describe space in terms of empty and full.
- Describe space in terms of in-front-of and in-back-of (overlapping).
- Describe space in terms of near and far.
- Recognize foreground and background in a two-dimensional composition.
- Recognize that artists create artworks.
- Recognize that all artworks represent personal thoughts, feelings, and ideas.
- Recognize that certain aspects of nature are universally considered aesthetically pleasing (rainbows, sunsets, etc.).
- Identify an art museum as a place to house respected works of art.

PART II

**Nutrition Education in the Kindergarten Curriculum: A
Content Analysis**

INTRODUCTION

Although there are many nutrition education curricula available for use in elementary schools, it is unlikely that the Year 2000 Goal to "...increase to at least 75% the proportion of the nation's schools that provide nutrition education" will be met (1). These nutrition education curricula vary in theoretical bases (none apparent through formal theory building), nutrition construct (single food through dietary guidelines), length (several lessons through year long curriculum), instructional activities (information transfer through experience with foods), outcome (increased knowledge through behavior change) and focus of intervention (individual through family or other social unit) (2-11). Most nutrition education curricula are developed to be implemented as a unit, either as a unit added on to the school curriculum or as part of the health or science curriculum (2-11). These units may be taught by a teacher, by a health professional, such as a nutrition or health educator or by school food service professional (2-11).

Development and implementation of a separate nutrition education curriculum may facilitate formative and summative evaluation (12), but increased time constraints on the school calendar force elementary school teachers to try to do too much in the available time. Therefore, additional topics such as nutrition often do not receive adequate attention. In addition to these time constraints, many

elementary schools are embracing a philosophy of teaching *whole language learning* which is a literature-based, child-centered approach that enables children to verbalize their experiences while they are exploring their own interests (13). Other schools are using science-centered curricula which replace fragmented subject areas with united subject areas incorporating science (14). Both of these approaches have broadened students' knowledge bases and have resulted in increased achievement. Thus, trends in education suggest that teachers are integrating specific knowledge into a generalized learning framework.

This approach may make it difficult to introduce formal nutrition education curricula in elementary schools. Demicco, for example, noted that schools did not implement nutrition education because of lack of class time and parental support (15). Zemel and Huntsinger surveyed elementary school teachers and found that 75% of the teachers who taught about foods and nutrition developed their own nutrition education materials, primarily by adapting materials from textbooks, magazines and consumer materials (16). Powers and coworkers identified that kindergarten teachers were interested in including nutrition education in their classes. They wanted short lesson plans that used available resources and could be used in subject areas in the regular curriculum, such as language arts or social studies (17).

A variety of nutrition education materials which could provide individual lesson plans for use by teachers have been developed. These include materials which are a part of a larger curricula (6,9-11) as well as single lessons (2-5,7,8), materials developed for federal, state, or local agencies (4,11), voluntary health organizations (2) or the private sector (3,5,8). Use of a framework such as the *Dietary Guidelines* could provide a means for orienting the lesson plans toward broad curricular goals (18).

Introduction of nutrition education materials in this form within the schools could provide an opportunity for evaluating their use and impact in a naturalistic setting. Thus, this project was planned to identify nutrition lesson plans appropriate for kindergarten and compare these lesson plans with the kindergarten curriculum guide in the state where the project was conducted to determine the extent to which nutrition can be incorporated into the core of the kindergarten curriculum (19).

METHODS

Identification of Teachers

Of the 181 kindergarten teachers in the school system where this project was completed, fifteen teachers with an interest in nutrition volunteered to participate. These

teachers served as lead teachers and solicited input from all other kindergarten teachers in their geographical area. Thus, all kindergarten teachers had input in this evaluation. Teachers received inservice education on the *Dietary Guidelines* (18) and were asked to identify those guidelines appropriate for kindergarten using a consensus approach. Teachers also provided input regarding strategies for evaluating lesson plans.

Identification of Nutrition Lesson Plans

We obtained sources of lesson plans from lower elementary or preschool activities. The sources included discrete lesson plans developed either individually or as part of larger curricula. Lesson plans provided an opportunity for the children to make observations and verbalize their own experiences by including active learning, interaction in groups, and spontaneous play (20). They also had some form of measurable outcome that could be used to show the child's achievement to the teacher parents, or to the child.

We collected nutrition education materials from federal, state and local agencies, voluntary health organizations, and the private sector. Only lesson plans that addressed kindergarten appropriate activities and the *Dietary Guidelines* were included in further evaluations.

Categorization of Lesson Plans by Dietary Guidelines

Each lesson plan was evaluated and, based on lesson content, was assigned to a dietary guideline. A random selection of 20% of the lesson plans was evaluated by another trained coder to establish reliability of this categorization.

Evaluation of Lesson Plans

We distributed the lesson plans to lead teachers for evaluation using the form in Appendix A. Each lead teacher was given one section of lesson plans and was asked to have each teacher in their group evaluate that section. Thus, every section was evaluated by up to 12 teachers. The purpose of the evaluation was to identify those lessons plans appropriate for use in kindergarten; any lesson plan identified as such by at least 2/3 of the teachers was included in further evaluation.

The second purpose of the evaluation was to identify the subject areas in which the teachers would use each lesson plan. Any subject that appeared on at least 2/3 of the responses was assigned to that lesson. For example, if 2/3 or more of the teachers agreed that a lesson plan addressed the subjects of language arts and math, the lesson plan was categorized under both subjects. If teachers

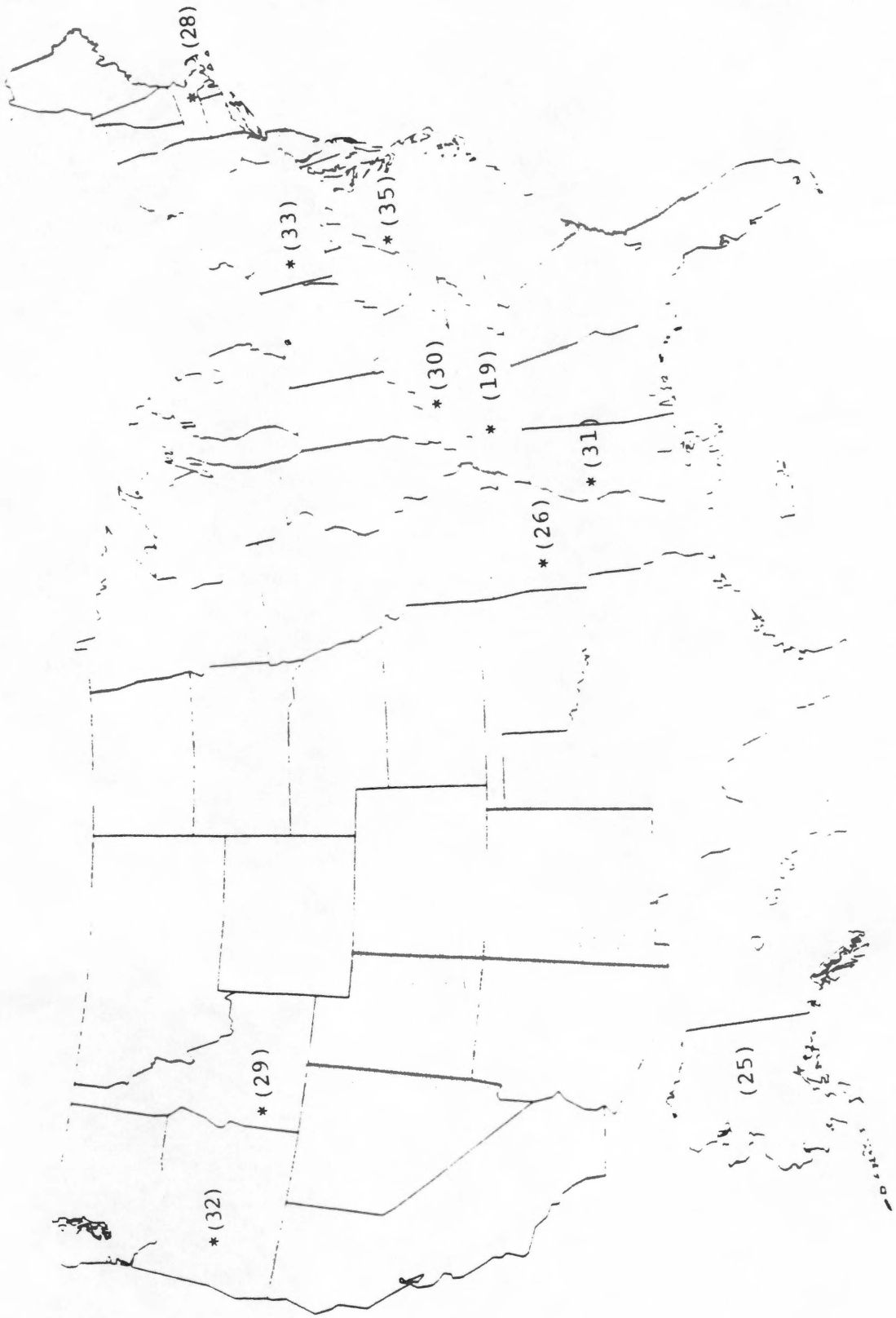
indicated that some other subjects were addressed by this lesson plan, and fewer than 2/3 of the teachers agreed, these subjects were not assigned to the lesson plan. A nutritionist classified a random sample of 20% of these lesson plans using the same methods to assess reliability.

Content Analysis

We compared nutrition lesson plans to the kindergarten curriculum guide using content analysis to determine the extent to which nutrition could be incorporated into the kindergarten curriculum (21). We established external validity by comparing the kindergarten curriculum guide used in this project to other curricula in regions across the United States (figure 1). We analyzed each lesson plan according to the subject areas assigned by teachers. We then determined the objectives addressed in each lesson plan using the form in Appendix B, that corresponded to the subject areas assigned by teachers. Each lesson plan had the possibility of meeting all of the objectives for each subject area, none of the objectives for each subject area, or any number in between. We also rated each lesson plan as to its incorporation of food samples, school food service activities, and parental involvement since this is part of the Healthy People 2000 goals (1). A teacher from a different school district who was certified to teach

Figure 1

**Representation of Kindergarten Curricula across the United
States that are similar to the one used in this project**



kindergarten reviewed a random sample of 20% of the lesson plans to establish reliability. Inter-rater reliability was determined by dividing the total number of agreements by the total number agreements plus disagreements (22).

We assigned a code for *Dietary Guideline*, subject, and objectives addressed to each lesson plan. We also assigned codes to each lesson plan that included food samples, school food service activities, or parental involvement and entered data into a database program (23). We then generated frequency tables and determined the degree to which nutrition lesson plans met objectives of the kindergarten curriculum.

RESULTS AND DISCUSSION

Identification of Teachers and Dietary Guidelines

Fifteen teachers volunteered and each served as a lead teacher for approximately eleven other kindergarten teachers. Of these volunteers, one was male and one was African American; this is similar to the gender and minority distribution among teachers in the school system. Teachers decided by consensus that four *Dietary Guidelines* were developmentally appropriate for kindergarten students:

- * Eat a variety of foods;
- * Eat plenty of fruits, vegetables and grains;

- * Decrease fat, saturated fat and cholesterol intake;
and
- * Decrease sugar intake.

Identification and Evaluation of Nutrition Lesson Plans

Table 1 shows that a total of 9 sources (2-11) of early elementary nutrition education lesson plans were identified and contained 400 lesson plans that addressed the *Dietary Guidelines* (18). Of these, 102 lesson plans were identified by the teachers as being appropriate for kindergarten.

Figure 2 shows that the 102 lesson plans addressed all nine content areas included in the evaluation. The percent of lesson plans that addressed each content area ranged from 5% for physical development to 78% for language arts.

Evaluation of Kindergarten Class Objectives Met by Nutrition Education Lesson Plans

Figure 3 shows that all subject areas of the kindergarten curriculum are addressed by the lesson plans. The numbers are based not on the total 102 lesson plans, but on the number of lesson plans assigned to each subject by the teachers' evaluation. The subjects addressed by the lesson plans include language arts, math, social studies, science, health, physical development, art, and music.

Table 1. Number of Lesson Plans From Each Source That Address Each Subject

Source	Lessons	*LA	MA	SS	SC	HE	PD	M	A
(9)	4	4	1	1	2	1	--	--	--
(7)	4	3	--	--	--	--	--	1	--
(11)	40	38	25	9	--	--	--	13	3
(10)	6	6	3	3	1	--	12	1	1
(3)	4	4	2	1	1	--	--	1	--
(8)	23	10	9	2	16	2	--	1	2
(6)	14	11	9	1	3	2	--	4	2
(4)	2	--	1	--	1	--	1	--	--
(2)	2	2	1	--	1	--	--	--	--

*Numbers in each curriculum subject area column do not sum to equal the number of lessons from each source because each lesson could address more than one curriculum subject area.

LA = Language Arts
MA = Math
SS = Social Studies
SC = Science
HE = Health
PD = Physical Development
A = Art
M = Music

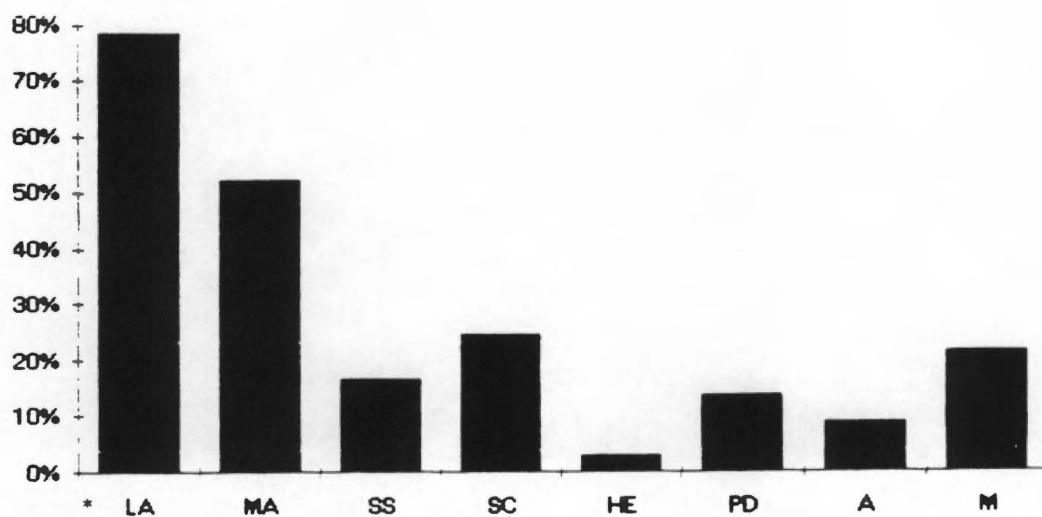


Figure 2. Percent of Lesson Plans that Address Each Subject

*LA = Language Arts
MA = Math
SS = Social Studies
SC = Science
HE = Health
PD = Physical Development
A = Art
M = Music

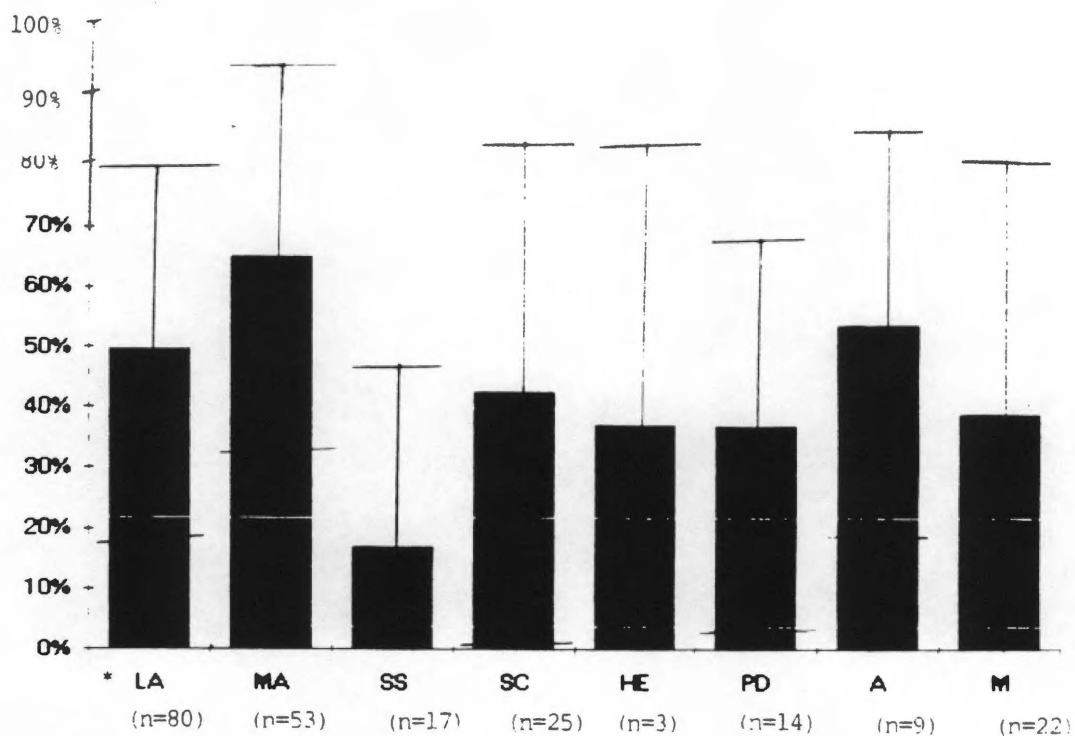


Figure 3. Average Percent of Curriculum Objectives Addressed by Nutrition Education Lesson Plans, Categorized by Curriculum Subject Areas Assigned by Teachers

*LA = Language Arts
 MA = Math
 SS = Social Studies
 SC = Science
 HE = Health
 PD = Physical Development
 A = Art
 M = Music

Language Arts

Seventy-eight percent (n=80) of lesson plans addressed language arts, which had the highest percentage of lesson plans assigned to it. These 80 lesson plans addressed an average of $50\% \pm 31\%$ of the kindergarten language arts objectives. The objectives addressing the skills of observation and verbalization of experiences, classification of objects, and comprehension of stories were most often incorporated into the lesson plans. For example, "Snacking Mouse" and "Green Eggs and Ham" (9) include these objectives. The kindergarten curriculum objectives least often met were those requiring knowledge of the alphabet and ability to write one's own name. These are more advanced skills.

Math

The teachers assigned fifty-two percent (n=53) of the lesson plans to the area of math. These 53 lesson plans addressed an average of $65\% \pm 33\%$ of the math objectives. Most of the kindergarten math objectives addressed topics such as counting, size, and shape, which can easily be demonstrating using different types of foods. "Variety Jar" and "Favorite Food Collage" (11) incorporate these kindergarten curriculum objectives into the lesson plans.

The kindergarten curriculum objectives least often met were those addressing measurement of time, money, and temperature.

Social Studies

Only 17% (n=17) of the lesson plans were assigned the subject of social studies. These 17 lesson plans covered an average of $17\% \pm 28\%$ of the social studies objectives. The objectives that were most often covered were those addressing similarities and differences of tastes and food choices between people. "Going For A Walk" and "Picnic Party Circles" (11) address these objectives. The social studies curriculum is very extensive and address, in detail, the differences between cultures. The social studies objectives incorporating differences between cultures were least often covered by the lesson plans. Nutrition lesson plans addressing cultural food differences could increase the extent to which nutrition can be taught in the social studies unit.

Science and Health

Twenty-five percent (n=25) and three percent (n=3) of the lesson plans were assigned the subjects of science and health, respectively. The 25 lesson plans that addressed

the subject of science covered 42%± 39% of the science curriculum. The three lesson plans that addressed the subject of health covered 37%± 46% of the health curriculum. The science and health objectives were not covered to the extent that we had expected. The topics most often covered in the nutrition lesson plans were plants, the senses, nutrition, and taste differences between people. "Come to Your Senses" and "See How Vegetables Grow" (8) cover these science and health objectives. Those objectives least often covered were those addressing pollution, safety, electricity, magnetism, rocks and weather. Lesson plans incorporating the ideas of safe food preparation and the use of plants to combat pollution could be developed to cover these subjects more completely.

Physical Development

Only 14% (n=14) of the lesson plans were assigned the subject of physical development. These 14 lesson plans covered 37%± 30% of the objectives of the physical development curriculum. The lesson plans that met kindergarten curriculum objectives of the subject of physical development were those dealing with gross motor functions such as role playing and exercising. The "Body Building" (11) series covers these objectives. The objectives addressing specific sports were least often

covered.

Art and Music

Nine percent (n=9) and 22% (n=22) of the lesson plans were assigned to the subjects of art and music, respectively. The nine lesson plans that addressed the subject of art covered an average of $54\% \pm 32\%$ of the art objectives. The kindergarten curriculum objectives most often covered were those that addressed shapes, colors, and texture, which can easily be demonstrated with various fruits and vegetables. The 22 lesson plans that addressed music covered $39\% \pm 40\%$ of the objectives in the music curriculum. The groups of lesson plans incorporating songs and arts and crafts very easily met these objectives. The more complex kindergarten curriculum objectives were least often met, but could be incorporated into nutrition education lesson plans relating to harmonies, rhythms, and the concept of feelings being expressed in art.

Evaluation of Dietary Guidelines Addressed by Lesson Plans

Fifty-three percent of the lesson plans addressed the *Dietary Guideline*, Eat a Variety of Foods. Thirty-eight percent addressed Eat Plenty of Fruits, Grains and Vegetables. Nine percent addressed Decrease Fat, Saturated

Fat, and Cholesterol. None of the lesson plans addressed the *Guideline, Decrease Sugar Intake*. It is possible that concepts of eating a variety of foods, eating plenty of fruits, grains, and vegetables are broad and easier to convey to early elementary students. The concept of fat and sugar are, perhaps, a more difficult concept to teach to this age group.

Evaluation of Involvement of Food Samples, School Food Service Activities and Parents

Twenty-one percent of the lesson plans involved a parent component. Sixty-two percent involved food samples, and only ten percent involved school food service activities. These components were evaluated because the year 2000 goals stress the importance of using the cafeteria as a learning environment as well as the classroom (24). Therefore, these lesson plans address the objective of Healthy People 2000 that states the need for the incorporation of food samples, food service activities and parent involvement in the elementary curriculum (1).

Evaluation of Inter-rater Reliability and External Validity

These content analyses exhibited a high level of inter-rater reliability. Inter-rater reliability on categorizing

the lesson plans into the four *Dietary Guidelines* and assigning subject areas to the lesson plans was 100%. We were in 95% agreement in determining which lesson plans were appropriate for use in kindergarten. Inter-rater agreement in assigning the objectives to the lesson plans was 98% and determining the extent to which the lesson plans incorporated food samples, school food service activities, and parent involvement was 95%.

Figure one shows that the kindergarten curriculum used in this project (19) is similar to other kindergarten curricula across the United States (25-35). If lesson plans were developed covering the kindergarten curriculum we used (19), then these same lesson plans could be used nationwide to incorporate nutrition education into the kindergarten curriculum.

CONCLUSIONS

The results of this research indicate that nutrition lesson plans need to be developed with curriculum objectives in mind. The lesson plans used in this project were identified from preexisting sources and did not meet every objective. More importantly, seventy-seven percent of the objectives were met at least one time. Every nutrition education lesson plan need not address all parts of the curriculum. The goal is to develop nutrition education

materials that, when used in conjunction with one another can address the objectives of the kindergarten curriculum.

Nutrition educators identifying or developing nutrition education materials for early elementary curricula need to be aware of the curricular objectives or form a partnership with a teacher who has background in curriculum development. They also need to focus on the development, implementation, evaluation, distribution and marketing of nutrition education materials that meet the needs of the teachers.

School administrators need to view nutrition education as an integral part of the curriculum and should provide a nutrition education consultant and strive to involve parents in their children's education.

Incorporating nutrition education into the daily activities of young children can greatly improve their food choices and their health later in life. Future research should focus on the effectiveness of nutrition education materials and the degree to which teachers incorporate nutrition lesson plans into their teaching. Effectiveness of the materials can be determined by studying the increase in nutrition knowledge, healthy food choices and family eating habits that are consistent with the Dietary Guidelines.

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APPENDICES

APPENDIX A

Formative Evaluation Questionnaire For Assessment of

Nutrition Education Lesson Plans

Title:

1. Is this lesson appropriate for use in kindergarten?

Yes

No Why?

2. Do you have access to materials or resources needed?

Yes

No What would you need to use this lesson?

3. For what subject areas is this lesson appropriate?

(circle all that apply)

language arts

math

physical development

food preparation

the arts

social studies

music

other specify:

4. Do you have any other comments about this lesson?

APPENDIX B
Evaluation Form For Content Analysis of Nutrition Education
Lesson Plans

Lesson Plan Title:

LANGUAGE ARTS KINDERGARTEN

Patron ID#:

MECHANICS:

The student will identify correct capitalization and ending punctuation.

- Develop skill in gross motor functioning.
- Develop fine motor functioning.
- Develop hand-eye coordination.
- Recognize likenesses and differences of objects and pictures.
- Classify objects and pictures.
- Follow progression such as left-to-right, top-to-bottom, and front-to-back.
- Position paper properly and hold a crayon or pencil correctly.
- Discriminate and identify uppercase and lowercase letters.
- Print own first name.
- Recognize own name when printed.
- Speak in complete sentences.
- Ask questions.

Comments:

SPELLING AND WORD IDENTIFICATION TECHNIQUES:

The student will use correct pronunciation to identify sounds and words, and recognize correctly spelled words. (Although this is a domain statement for all grade levels, kindergarten students are not expected to read or to spell words.)

- Verbalize own experiences, needs, and wants.
- Make and describe observations.
- Ask questions.
- Use vocabulary necessary to describe self.
- Recognize rhyme, rhythm, and repetition in spoken words or literature.
- Name common objects.
- Speak clearly and politely.
- Enjoy being read to by others.
- Recognize own name when printed.
- Develop skill in auditory discrimination.
- Recognize and name letters of the alphabet.

Comments:

1-1

____ **COMPREHENSION:**

The student will answer questions about a reading selection.

Rater ID#:

- ____ • Listen to simple stories and retell.
- ____ • Listen to answer questions, predict an event or outcome, find the main idea, or identify sequence.
- ____ • Repeat simple verses from memory.
- ____ • Describe and interpret contents of a picture.

Comments:

____ **WRITING READINESS* :**

The student will demonstrate the ability to use writing readiness skills.

- ____ • Verbalize own experiences, needs, and wants.
- ____ • Make and describe observations.
- ____ • Use vocabulary necessary to describe self.
- ____ • Recognize that everyone has experiences to write about.
- ____ • Recognize that writing can entertain and inform.

Comments:

____ **REFERENCE STUDY:**

The student will use alphabetizing skills.

- ____ • Recognize and name letters of the alphabet.

Comments:

Lesson Plan Title:

Patron ID#:

MATHEMATICS KINDERGARTEN

NUMERATION:

The student will identify, order, and compare numbers.

- Recognize and show which is larger/smaller, longer/shorter, taller/shorter, etc., when given two similar objects.
- Recognize and show terms of relative position (above, under, right, behind, etc.).
- Identify equivalent sets (1-10) by one-to-one correspondence.
- Identify sets of 1-5 on sight.
- Count to 10; identify numerals 0-10.
- Tell which of two numbers is less or which is greater up to 10.

Comments:

WHOLE NUMBER/INTEGER OPERATIONS:

The student will compute using whole numbers.

- Show and state that when objects are taken from a set, the set becomes smaller.
- Show and state that when objects are added to a set, the set becomes larger.

Comments:

MEASUREMENT:

The student will identify and apply knowledge of time, money value, and measurement concepts.

- Identify a penny and a nickel.
- Recognize clocks and watches as instruments for measuring time.
- Recognize the thermometer as a device to measure temperatures.

Comments:

MA

Lesson Plan Title:

Master ID#:

GEOMETRY:

The student will identify basic geometric shapes.

- Identify, match, and reproduce shapes with given shapes (circle, square, triangle, and rectangle).
- Match terms with given shapes.

Comments:

SOCIAL STUDIES KINDERGARTEN

Kindergarten students should be able to do the following:

- Know individuals have a space or develop an understanding of space and spatial relationships.
- Know individuals live in an environment and environments differ.
- Be aware what a globe and map represent.
- Know individuals have a personal history (state name, birthdate, address, family members).
- Recognize that things change over time (seasons of the year, people and objects).
- Be aware the laws and rules we follow are decided by the people (school, community, country).
- Recognize the need for rules for daily living and fair treatment of others.
- Recognize that a person born into a country is a citizen of that country.
- Recognize that individuals meet their needs/wants in different ways.
- Recognize that people usually work to satisfy needs and wants by doing different jobs.
- Be aware individuals choose jobs they like and can do well.
- Recognize all jobs are important and some jobs are dependent on other jobs.
- Recognize the worth of each individual including self.
- Recognize the behavior of individuals may be changed by relationships with others.
- Recognize individuals learn to do things from their culture.
- Be aware many jobs require that people work together.
- Understand some differences among people are a result of their culture.
- Develop an understanding of the spatial relationship of the home to the school.
- Recognize each family has a family tree.
- Be aware schools have changed through the years.
- Understand why families need rules.
- Understand cooperation is necessary when working within large and small groups to complete tasks.
- Know that family structures change.
- Be aware every culture has a family unit which determines the ways families do things.
- Understand people need shelter and shelters differ according to the culture and the environment.
- Recognize how jobs are similar/different from one community to another.
- Be aware of the contributions of different cultures.
- Be aware of similarities and differences of food, clothes, homes, games and families in different cultures.
- Know people travel from place to place by different means of transportation.
- Know land and water forms affect types of transportation.
- Know means of transportation have changed over the years and will continue to change.
- Know rules of safety including signs and signals.
- Be aware that people pay to use public transportation.
- Be aware different types of transportation provide jobs for people.
- Know means of transportation may differ in different cultures.
- Know different aspects of the environment including land forms, water, natural and man-made features.
- Understand there are rules to protect the environment.
- Recognize that pollution can be detrimental to personal health and jobs.
- Be aware of jobs related to working with and protecting the environment.

Lesson Plan Title:

Rater ID#:

- Be aware that the ways people use environmental resources are determined by their culture.
- Be aware pollution of one area of the environment may affect other areas of the total environment.

Comments:

Lesson Plan Title:

Rating ID#:

SCIENCE

KINDERGARTEN

Kindergarten students should be able to do the following:

- Understand electricity is not only useful but can be dangerous.
- Learn the importance of observing safety rules when using electricity.
- Learn magnets can both attract and repel.
- Recognize the basic properties of magnets.
- Recognize there are different kinds and sources of sound.
- Recognize the basic properties of sound.
- Understand animals reproduce by having young and some animal young are like the adult.
- Realize animals live in a variety of habitats and seasonal changes affect animals.
- Understand plants as living things and how they grow and change.
- Identify the major parts of a plant.
- Distinguish similarities and differences among human beings.
- Identify the body part associated with the sensory system.
- Understand humans experience the world through their senses.
- Realize weather conditions change from day to day.
- Realize rocks are part of the earth's composition and have properties.
- Develop an appreciation for the earth's environment and the necessity for keeping it clean.
- Realize how people affect the environment (past, present, future).

Comments:

Lesson Plan Title:

Enter ID#:

HEALTH KINDERGARTEN

Kindergarten students should be able to do the following:

- Identify communities in which students live.
- Identify health helpers and their roles in the community.
- Understand individual responsibilities in promoting good health practices.
- Identify factors that determine choices in selecting health products and services.
- Understand individual responsibility in prevention of illness.
- Identify resources for the treatment of illnesses.
- Identify AIDS as a communicable disease.
- Identify various kinds of pollution within the immediate environment.
- Identify ways of controlling pollution.
- Recognize the importance of various feelings in family relationships.
- Identify the individual uniqueness of family members.
- Recognize variations of family structure.
- Be aware of individual differences and similarities.
- Identify healthy ways in which feelings may be expressed.
- Be aware of ways to deal with unpleasant situations.
- Be aware of the importance of accepting a variety of foods.
- Identify various foods within the four food groups.
- Identify examples of healthy snacks.
- Be aware of the seven dietary guidelines for Americans.
- Identify basic health practices that influence physical appearance.
- Identify the five senses and match the body parts with each one.
- Identify safety rules and practices to be followed in daily life activity.
- Identify safe practices in the use of medicines and drugs in keeping people healthy.
- Be aware of the importance of choosing not to use tobacco, illicit drugs, or alcohol.

Comments:

Lesson Plan Title:

Rating ID#:

PHYSICAL EDUCATION KINDERGARTEN

Kindergarten students should be able to do the following:

- Be aware of the relationships of basic locomotor skills to various games and sports.
- Be aware of the importance of manipulative skills to various games and sports.
- Be aware of spatial relationships in games and sports.
- Understand the basic rules of safety for gymnastics.
- Demonstrate various beginner gymnastics skills and how to self-test for these skills.
- Demonstrate increased confidence in movement as body control is developed.
- Be aware of the role of body movement and control in developing physical fitness.
- Be aware of the relationship between rhythmic body movement and accompaniment.
- Be aware of the interrelationship of body movement, space, and time.
- Be aware of the role of body movement in the expression of feeling and ideas.

Comments:

Lesson Plan Title:

Rating ID#:

MUSIC

KINDERGARTEN

Kindergarten students should be able to do the following:

- Recognize the presence and absence of sound.
- Develop skill in reproducing steady beat.
- Recognize and reproduce long and short sounds vocally and with classroom instruments.
- Recognize and reproduce high and low pitches vocally and with classroom instruments.
- Develop skill in singing repetitive, narrow-range, rhythmically simple songs.
- Recognize the difference between fast and slow tempos.
- Recognize the difference between loud and soft dynamics.
- Recognize the differences in tone colors of voices and classroom instruments.
- Aurally recognize beginnings and endings in musical compositions.
- Recognize likenesses and differences in simple rhythmic and melodic patterns.
- Aurally recognize the difference between a sound that occurs alone and sounds that occur simultaneously.
- Recognize the difference between familiar lullabies and marches.

Comments:

Lesson Plan Title:

Rater ID#:

VISUAL ART KINDERGARTEN

Kindergarten students should be able to do the following:

- Recognize line and the characteristics of long, short, thick, thin, zig-zag and wavy lines.
- Recognize that closure of a line creates a shape.
- Recognize that lines can create happy, sad, angry, surprised, or other feelings.
- Recognize that every object has a basic shape.
- Recognize that shapes can be found within shapes.
- Recognize that parts relate to a whole (shapes connected and overlapping create objects).
- Describe objects in terms of their shapes (triangle = Teepee; circle = apple, etc.).
- Recognize that basic shapes relate to basic forms (square/cube; triangle/cone; circle/sphere).
- Describe surfaces in terms of rough, sticky, bumpy, or smooth textural qualities.
- Recognize red, blue, and yellow as primary colors.
- Develop skill in mixing primary colors to make secondary colors (red and yellow = orange, yellow and blue = green, blue and red = purple).
- Use white to change a color to a tint.
- Use black to change a color to a shade.
- Describe space in terms of empty and full.
- Describe space in terms of in-front-of and in-back-of (overlapping).
- Describe space in terms of near and far.
- Recognize foreground and background in a two-dimensional composition.
- Recognize that artists create artworks.
- Recognize that all artworks represent personal thoughts, feelings, and ideas.
- Recognize that certain aspects of nature are universally considered aesthetically pleasing (rainbows, sunsets, etc.).
- Identify an art museum as a place to house respected works of art.

Comments:

APPENDIX C

Percent of Nutrition Education Lesson Plans Addressing Each Kindergarten Curriculum Subject Area

		# In Subject		# In Each Objective															Number of Lesson Plans		
LA		80	8	53	66	66	70	73	18	15	6	1	3	51	36	16					
MA	*	53	41	45	42	40	40	40	40	45	45	45	3	5	0	1					
SS		17	15	0	2	2	1	3	0	0	0	4	3	2	2	3					
SC		25	25	1	1	0	0	8	8	1	3	24	21	18	22	23					
HE		3	3	0	0	3	0	0	0	0	0	0	0	0	0	2					
PD		14	9	5	0	2	0	0	5	6	3	9	9	0	0	2					
A		9	9	3	3	2	8	7	5	7	8	8	8	8	3	3					
M		22	21	19	19	2	1	21	3	4	1	3	2	1	1	3					

That Address Each Subject Area

68	74	58	27	34	73	63	42	4	5	8	49	48	50	46	56
45	46	45													
0	9	2	12	0	0	0	0	2	1	10	1	2	13	15	0
3	0	9	10												
1	0	3	3	3	3	2	3	0	0	0					
6	5	3	2	2	2	0	0								

Percent of Lesson Plans
Addressing Each Subject

7	10	28	67	67	49	26	27	0	0	2	1	18	25%
0	0	0	0	0	0	0	0					HE	3%
												PD	14%
												A	9%
												M	22%

* *Objectives in order horizontally (see Appendix P for order)

APPENDIX D

Percent of Kindergarten Curriculum Covered by Nutrition Education Lesson Plans

*

Percent of Curriculum Covered

LP	LA	MA	SS	SC	HE	PD	A	M
1	27	14	0	0	7	8	0	0
2	27	0	0	0	8	0	0	0
3	26	0	15	0	0	0	0	0
4	20	0	0	0	0	0	0	0
5	20	0	0	0	0	0	0	5
6	24	0	0	0	0	0	0	0
7	21	0	0	0	0	0	0	0
8	16	0	0	0	0	0	0	0
9	23	0	0	0	0	0	0	0
10	7	0	1	0	0	0	0	0
11	21	0	3	0	0	0	0	0
12	9	14	0	0	0	0	0	0
13	17	0	0	0	0	0	6	5
14	13	14	0	0	0	0	0	0
15	19	14	0	0	0	0	0	0
16	26	14	0	0	0	0	0	0
17	7	14	0	0	0	0	0	0
18	27	14	13	0	0	0	1	0
19	23	14	8	0	0	0	6	7
20	29	14	0	0	0	0	0	13
21	16	1	0	0	0	0	1	5
22	19	14	0	0	0	0	0	0
23	14	0	0	0	0	0	0	0
24	11	1	7	0	0	0	0	0
25	20	1	0	0	0	0	0	7
27	26	14	0	0	0	0	5	5
28	27	14	0	0	0	0	0	5
29	26	14	0	0	0	0	5	5
30	26	14	0	0	0	0	8	5
31	26	14	0	0	0	0	5	5
32	26	14	0	0	0	0	5	5
33	32	14	0	0	0	0	8	5
34	16	15	6	0	0	0	1	0
35	20	0	7	0	0	0	1	0
36	13	0	1	0	0	0	1	1
37	21	0	0	0	0	0	0	0
38	11	0	0	0	0	0	0	0
39	13	14	0	0	0	0	0	0
40	14	14	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0
42	13	0	0	0	0	0	0	0
43	19	0	0	0	0	0	0	0
44	22	2	0	0	0	0	0	0
45	23	1	0	0	0	0	0	0
46	24	14	7	0	0	0	0	5
47	23	0	0	9	0	0	0	11
48	25	14	9	0	0	0	0	0
49	21	15	9	0	0	0	0	0

Sum

Percent

57	29%
33	17%
41	21%
20	10%
25	13%
24	12%
21	11%
16	8%
23	12%
8	4%
24	12%
23	12%
28	14%
27	14%
33	17%
40	20%
21	11%
55	28%
88	35%
63	32%
23	12%
33	17%
14	7%
19	10%
28	14%
50	26%
46	23%
50	26%
53	27%
50	26%
50	26%
58	30%
40	20%
28	14%
16	8%
21	11%
11	6%
27	14%
28	14%
0	
13	7%
19	10%
24	12%
24	12%
50	26%
43	22%
48	24%
45	23%

* Percent of Curriculum Covered										
LP	LA	MA	SS	SC	HE	PD	A	M	Sum	Percent
50	16	15	8	0	0	0	0	0	39	20%
51	14	0	0	0	0	0	0	0	14	7%
52	17	0	0	0	0	0	0	7	24	12%
53	22	0	0	0	0	0	0	5	27	14%
54	19	14	0	0	0	0	0	0	32	16%
55	13	14	0	0	0	0	0	0	27	14%
56	17	0	0	0	0	0	7	0	24	12%
57	0	17	0	0	0	0	0	0	17	9%
58	0	0	0	0	0	0	21	0	21	11%
59	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	
61	20	0	0	0	0	0	0	0	20	10%
62	0	0	0	0	0	0	0	0	0	
63	0	0	0	0	0	0	0	0	0	
64	21	0	0	0	0	0	0	0	21	11%
65	21	0	0	0	0	0	0	0	21	11%
66	10	12	0	0	0	0	0	0	22	11%
67	9	0	0	0	0	0	0	0	9	5%
68	14	0	0	0	0	0	0	0	14	7%
69	6	0	0	0	0	0	0	0	6	3%
70	0	0	0	0	0	0	0	0	0	
71	20	3	0	0	0	0	0	0	23	12%
72	22	9	0	0	0	0	0	0	30	15%
73	22	8	0	0	0	0	0	0	30	15%
74	25	14	0	0	0	0	0	0	39	20%
75	20	8	7	0	0	0	11	4	50	26%
76	20	8	7	0	0	0	11	4	50	26%
77	21	14	0	7	10	9	0	0	61	31%
78	23	14	0	8	0	0	0	5	48	24%
79	23	13	0	6	0	0	18	4	64	33%
80	0	1	0	0	0	0	0	0	1	1%
81	0	14	0	6	0	0	0	0	20	10%
82	14	0	0	4	0	0	0	0	18	9%
83	0	14	0	0	10	0	0	0	24	12%
84	0	0	0	11	0	0	0	0	11	6%
85	0	0	0	11	0	0	0	0	11	6%
86	0	0	0	11	0	0	0	0	11	6%
87	0	0	0	11	0	0	0	0	11	6%
88	0	0	0	11	0	0	0	0	11	6%
89	0	0	0	11	0	0	0	0	11	6%
90	0	0	0	11	0	0	0	0	11	6%
91	0	0	0	11	0	0	0	0	11	6%
92	27	14	0	9	0	0	0	0	50	26%
93	28	14	0	9	0	0	0	0	51	26%
94	14	4	0	7	0	0	0	0	25	13%
95	10	7	0	5	0	0	0	0	22	11%
96	7	4	0	7	0	0	0	0	18	9%
97	5	14	6	7	0	0	0	0	32	16%
98	0	0	10	4	0	0	0	0	14	7%
99	0	0	0	8	0	0	0	0	8	4%

LP	Percent of Quotations Covered								Sum	Percent
	LA	MA	SS	SC	HE	PD	A	MI		
100	27	14	0	0	0	0	0	0	41	21%
101	19	15	0	0	0	0	8	0	42	21%
102	0	0	0	0	0	0	0	14	14	7%
103	29	14	0	7	0	0	0	0	50	26%
										<u>Average</u> 15%
										<u>Std Dev</u> 8%

*

APPENDIX E

Percent of Nutrition Education Lesson Plans that Cover Each Kindergarten Curriculum Objective

APPENDIX F

Percent of Kindergarten Curriculum Subjects Covered by Each Nutrition Education Lesson Plan

Percent of Subjects Covered by Each Lesson Plan

LP	LA	MA	SS	SC	HE	PD	A	M	Percent of Total Curriculum
1	68%	78%		37%	35%				29%
2	68%			32%					17%
3	67%		35%						21%
4	51%								10%
5	51%							36%	13%
6	62%								12%
7	54%								11%
8	41%								8%
9	58%								12%
10	18%		2%						4%
11	54%		7%						12%
12	23%	78%							12%
13	44%					50%		36%	14%
14	33%	78%							14%
15	49%	78%							17%
16	67%	78%							20%
17	18%	78%							11%
18	68%	78%	30%			8%			28%
19	58%	78%	19%			50%	48%	50%	35%
20	74%	78%					57%	50%	32%
21	41%	6%				8%		38%	12%
22	49%	78%							17%
23	36%								7%
24	28%	6%	16%						10%
25	51%	6%						50%	14%
27	67%	78%				42%		36%	26%
28	68%	78%						36%	23%
29	67%	78%				42%		36%	26%
30	67%	78%				67%		36%	27%
31	67%	78%				42%		36%	26%
32	67%	78%				42%		36%	26%
33	82%	78%				67%		36%	30%
34	46%	83%	14%			8%			20%
35	51%		16%			8%			14%
36	33%		2%			8%		7%	8%
37	54%								11%
38	28%								6%
39	33%	78%							14%
40	36%	78%							14%
41									
42	33%								7%
43	49%								10%
44	56%	11%							12%
45	59%	6%							12%
46	62%	78%	16%					36%	26%
47	59%			47%			48%		22%
48	64%	78%	21%						24%

*

LP	LA	MA	SB	SC	HE	PD	A	M	Percent of Total Curriculum
49	54%	83%	21%						23%
50	41%	83%	19%						20%
51	38%								7%
52	44%							50%	12%
53	58%							36%	14%
54	48%	78%							16%
55	33%	78%							14%
56	44%						30%		12%
57		94%							9%
58							91%		11%
59									
60									
61	51%								10%
62									
63									
64	54%								11%
65	54%								11%
66	28%	87%							11%
67	23%								5%
68	38%								7%
69	15%								3%
70									
71	51%	17%							12%
72	58%	44%							15%
73	58%	44%							15%
74	84%	78%							20%
75	51%	44%	16%				48%	29%	26%
76	51%	44%	16%				48%	29%	26%
77	54%	78%		37%	38%	75%			31%
78	58%	78%		32%				36%	24%
79	58%	72%		32%			78%	29%	33%
80		6%							1%
81		78%		32%					10%
82	38%			21%					9%
83		78%			38%				12%
84				58%					8%
85				58%					8%
86				58%					8%
87				58%					8%
88				58%					8%
89				58%					8%
90				58%					8%
91				58%					8%
92	88%	78%		47%					26%
93	72%	78%		47%					26%
94	36%	22%		37%					13%
95	26%	39%		26%					11%
96	18%	22%		37%					9%
97	13%	78%	14%	37%					16%
98			23%	21%					7%

*

LP	LA	MA	SS	SC	HE	PD	A	M	Percent of Total Curriculum
99				42%					4%
100	69%	78%							21%
101	49%	83%					35%		21%
102								100%	7%
103	74%	78%		37%					26%
Average	50%	64%	17%	43%	37%	37%	54%	39%	15%
Std Dev	18%	26%	8%	12%	2%	24%	18%	16%	8%

APPENDIX G

**Percent of Nutrition Education Lesson Plans that Address
Each Dietary Guideline, Parent Involvement, Real Food,
School Food Service, and Food Preparation**

*		*						
LP		DG1	DG2	DG3	Q1	Q2	Q3	FP
1		1				1	1	1
2		1				1	1	
3		1				1	1	1
4				1		1	1	1
5		1						
6		1					1	
7		1						
8		1					1	1
9		1					1	1
10		1						1
11		1					1	
12		1						
13		1						
14		1					1	
15		1						
16					1		1	1
17		1						
18		1						
19		1				1	1	1
20		1						1
21		1						1
22		1						
23		1						1
24		1						1
25					1			
27		1						
28		1						
29		1						1
30		1						1
31		1						1
32		1						1
33				1				1
34		1						
35		1						
36		1						1
37		1					1	
38		1					1	
39		1						
40		1					1	
41		1					1	
42		1						
43		1						
44		1						
45		1						
46		1				1	1	1
47		1				1	1	1
48		1				1	1	1
49		1				1	1	1
50		1				1	1	

LP	DC1	DC2	DC3	Q1	Q2	Q3	FP
51	1				1		
52	1						
53	1						1
54	1						
55	1						
56	1			1	1		1
57	1				1		
58	1				1		
59		1			1		
60		1		1	1		
61	1			1		1	1
62		1					
63		1					
64		1		1	1	1	1
65		1		1	1	1	1
66		1			1		
67			1		1		
68			1		1		
69			1	1			1
70			1				
71			1		1		1
72			1		1		1
73			1		1		1
74			1	1	1		1
75			1		1		1
76			1		1		1
77			1		1		1
78			1		1		1
79			1		1		1
80			1		1		1
81			1		1		
82			1		1		
83			1		1		
84			1		1		
85			1		1		
86			1		1		
87			1		1		
88			1		1		
89			1		1		
90			1		1		
91			1		1		
92			1	1	1		
93			1	1	1		
94			1		1		
95			1		1		
96			1		1		
97			1		1		1
98			1		1		1
99			1	1	1		
100			1	1	1		

* *

LP	DG1	DG2	DG3	Q1	Q2	Q3	FP
101			1		1		1
102			1				
103			1		1		

54	9	39	21	63	10	37
Guidelines			Questions			FP
53%	9%	39%	21%	62%	10%	36%

* *

DG1 -- Eat A Variety of Foods

DG2 -- Decrease Fat, Saturated Fat, and Cholesterol

DG3 -- Eat Plenty of Fruits, Grains and Vegetables

Q1 -- Incorporation of Parent Involvement

Q2 -- Incorporation of Real Food

Q3 -- Incorporation of School Food Service Activities

FP -- Incorporation of Food Preparation

APPENDIX H

Percent of Nutrition Education Lesson Plans that Address Kindergarten Language Arts Objectives

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LP	LA	LA1	LA11	LA12	LA13	LA14	LA15	LA16	LA17	LA18	LA19	LA110	LA111	LA112	LA2	LA21	LA22	LA23	LA24	LA25	LA26	LA27	LA28	LA29	LA210	LA211	LA3
66	1	1		1	1	1	1							1	1	1	1	1		1	1	1		1	1	1	
	2	1		1	1	1	1							1	1	1	1	1		1	1	1		1	1	1	
	3	1		1	1	1	1							1	1	1	1	1	1		1	1	1		1	1	
	4	1		1	1	1	1							1	1	1	1	1	1		1	1	1		1	1	
	5	1		1										1	1	1	1	1	1	1	1	1	1			1	
	6	1		1	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1			1	
	7	1		1	1	1	1	1	1	1				1	1	1	1	1	1	1		1	1			1	
	8	1		1	1	1	1	1	1	1	1			1	1	1	1	1	1	1		1	1			1	
	9	1		1	1	1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1			1	
	10	1			1	1	1	1	1						1											1	
	11	1			1	1	1	1	1						1	1	1	1				1	1			1	
	12	1			1	1	1	1	1	1					1	1						1				1	
	13	1		1	1	1	1	1	1		1				1	1		1	1		1	1	1			1	
	14	1			1	1	1	1	1						1	1						1	1			1	
	15	1		1	1	1	1	1	1		1		1	1			1	1		1	1	1	1		1	1	
	16	1	1	1	1	1	1	1	1		1				1	1	1	1	1	1	1	1	1			1	
	17	1			1	1	1	1	1	1					1	1						1					1
	18	1			1	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1			1
	19	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	20	1	1		1	1	1	1	1	1		1			1	1	1	1	1	1	1	1	1	1			1
	21	1													1	1	1	1	1	1	1	1	1	1		1	1
	22	1						1	1						1	1	1	1	1	1	1	1	1	1			1
	23	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	24	1						1	1						1	1					1	1	1	1			1
	25	1						1		1					1	1	1	1	1	1	1	1	1	1		1	1
	27	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	28	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	29	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	30	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	31	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	32	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	33	1	1	1	1	1	1	1	1	1		1			1	1	1	1	1	1	1	1	1	1		1	1
	34	1											1			1	1	1	1	1	1		1	1	1		1
	35	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1		1		1
	36	1		1	1	1	1	1	1							1	1	1	1	1		1	1				1
	37	1			1	1	1	1	1						1		1	1	1	1	1	1	1	1			1
	38	1		1	1	1	1	1	1						1	1	1	1	1	1		1	1	1			1
	39	1		1	1	1	1	1	1	1	1				1	1	1	1	1	1		1	1	1			1
	40	1			1	1	1	1	1						1	1	1	1	1	1	1	1	1				1
	41																										
	42	1		1	1	1	1	1	1								1	1	1	1		1					1
	43	1		1	1	1	1	1	1								1	1	1	1	1	1					1
	44	1	1	1	1	1	1	1	1						1	1	1	1	1	1	1	1	1				1
	45	1		1	1	1	1	1	1		1				1	1	1	1	1	1	1	1	1				1
	46	1		1	1	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1			1
	47	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	48	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	49	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1
	50	1		1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1			1

LP	LA	LA1	LA11	LA12	LA13	LA14	LA15	LA16	LA17	LA18	LA19	LA110	LA111	LA112	LA2	LA21	LA22	LA23	LA24	LA25	LA26	LA27	LA28	LA29	LA210	LA211	LA3
51	1			1	1	1	1						1		1	1	1	1		1		1		1	1		
52	1	1	1	1	1	1	1	1		1			1	1				1	1	1	1	1			1	1	
53	1		1	1	1	1	1						1		1	1	1	1	1	1	1	1					1
54	1		1	1	1	1	1	1	1	1					1	1	1	1		1	1	1					
55	1		1	1	1	1	1								1	1	1			1	1						
56	1		1	1	1	1	1									1		1		1							1
57																1	1			1							
58																											
59																											
60																											
61	1		1	1	1	1	1	1	1						1	1	1		1								1
62																											
63																											
64	1		1	1	1	1	1	1					1		1	1	1			1	1						1
65	1		1	1	1	1	1							1		1	1	1	1		1	1	1				1
66	1								1	1					1	1		1	1		1	1					
67	1				1	1	1								1	1					1	1					
68	1		1	1	1	1	1								1	1					1	1					
69	1											1	1			1	1										1
70																											
71	1			1	1	1	1						1		1	1	1		1	1			1				1
72	1		1	1	1	1	1		1						1	1	1	1		1	1	1	1				1
73	1		1	1	1	1	1						1		1	1	1	1	1	1	1	1	1				1
74	1		1	1	1	1	1	1	1				1		1	1	1	1		1	1	1	1	1			1
75	1		1	1	1	1	1							1		1	1			1	1	1	1	1			1
76	1		1	1	1	1	1								1	1	1			1	1	1	1	1			1
77	1		1	1	1	1	1								1	1	1	1		1	1	1	1	1			1
78	1		1	1	1	1	1					1		1	1	1	1	1		1	1	1	1	1			1
79	1		1	1	1	1	1					1	1		1	1	1	1		1	1	1	1	1			1
80													1	1		1	1	1		1	1	1	1				
81																											
82	1		1	1	1	1	1						1			1	1				1	1					
83																											
84																											
85																											
86																											
87																											
88																											
89																											
90																											
91																											
92	1		1	1	1	1	1						1	1		1	1	1	1	1	1	1	1				1
93	1		1	1	1	1	1						1	1		1	1	1	1	1	1	1	1	1			1
94	1												1	1			1				1	1	1				1
95	1					1	1									1	1				1	1					
96	1															1	1				1						
97	1					1	1									1	1				1	1					
98																											
99																											
100	1		1	1	1	1	1	1	1				1		1	1	1			1	1	1	1				1

001

	LA31	LA32	LA33	LA34	LA4	LA41	LA5	LA51	LA52	LA53	LA54	LA55		Percent
1	1	1		1	1	1	1	1	1	1	1	1	27	69%
2	1	1		1	1	1	1	1	1	1	1	1	27	69%
3	1	1		1			1	1	1	1	1	1	26	67%
4				1			1	1	1		1	1	20	51%
5	1	1	1	1			1	1	1				20	51%
6	1	1		1			1	1	1		1	1	24	62%
7							1	1	1	1	1	1	21	54%
8				1									16	41%
9							1	1	1	1	1	1	23	59%
10									1				7	18%
11	1	1		1			1	1	1		1	1	21	54%
12													9	23%
13			1	1					1				17	44%
14		1		1					1				13	33%
15				1			1	1	1				19	49%
16			1		1	1	1	1	1	1	1	1	26	67%
17													7	18%
18	1	1	1	1	1	1		1	1	1	1	1	27	69%
19			1	1			1	1	1	1	1	1	23	59%
20	1	1	1	1		1		1	1	1	1	1	29	74%
21	1	1	1	1				1	1	1			16	41%
22	1	1		1		1	1	1					19	49%
23				1									14	36%
24	1	1	1	1									11	28%
25	1	1	1	1				1				1	20	51%
26	1	1	1	1			1	1	1		1	1	26	67%
27	1	1	1	1			1	1	1		1	1	27	69%
28	1	1	1	1			1	1	1		1	1	26	67%
29	1	1	1	1			1	1	1		1	1	26	67%
30	1	1	1	1			1	1	1		1	1	26	67%
31	1	1	1	1			1	1	1		1	1	26	67%
32	1	1	1	1			1	1	1		1	1	26	67%
33	1	1	1	1	1	1	1	1	1		1	1	32	82%
34	1	1	1	1			1	1	1	1		1	18	46%
35	1	1	1	1		1	1	1		1			20	51%
36							1	1	1	1			13	33%
37	1	1	1	1				1	1	1			21	54%
38													11	28%
39													13	33%
40								1	1	1			14	36%
41													0	
42								1	1	1			13	33%
43	1	1	1	1			1	1	1	1			19	49%
44				1			1	1	1	1	1	1	22	56%
45	1	1	1	1			1	1	1	1			23	59%
46	1	1	1	1			1	1	1	1			24	62%
47	1	1	1	1			1	1	1	1	1	1	23	59%
48	1	1	1	1			1	1	1		1	1	25	64%
49	1	1	1	1			1	1	1	1			21	54%
50								1	1	1			16	41%

	LA31	LA32	LA33	LA34	LA4	LA41	LA5	LA51	LA52	LA53	LA54	LA55
51								1	1	1		
52			1		1	1						
53	1	1	1	1				1	1	1		
54								1	1	1		
55								1	1	1		
56	1	1	1	1				1	1	1		
57												
58												
59												
60												
61	1	1	1	1				1	1	1		
62												
63												
64	1	1	1	1				1	1	1		
65	1	1	1	1				1	1	1		
66								1	1	1		
67								1	1	1		
68								1	1			
69	1	1	1	1								
70												
71	1	1	1	1				1	1	1		
72	1	1	1	1				1	1	1		
73	1	1	1	1				1	1	1		
74	1	1	1	1				1	1	1		
75	1	1	1	1				1	1	1		
76	1	1	1	1				1	1	1		
77	1	1	1	1				1	1	1		
78	1	1	1	1				1	1	1		
79	1	1	1	1				1	1			1
80												
81												
82								1	1	1		
83												
84												
85												
86												
87												
88												
89												
90												
91												
92	1	1	1	1			1	1	1	1	1	1
93	1	1	1	1			1	1	1	1	1	1
94	1	1	1	1				1	1	1		
95								1	1	1		
96								1	1	1		
97												
98												
99												
100	1	1	1	1			1	1	1	1	1	1

Percent of Language Arts Covered by Each Lesson Plans

14	36%
17	44%
22	56%
18	46%
13	33%
17	44%
0	
0	
0	
0	
20	51%
0	
0	
21	54%
21	54%
10	26%
9	23%
14	36%
6	15%
0	
20	51%
22	56%
22	56%
25	64%
20	51%
20	51%
21	54%
23	59%
23	59%
0	
0	
14	36%
0	
0	
0	
0	
0	
0	
0	
27	69%
28	72%
14	36%
10	26%
7	18%
5	13%
0	
0	
27	69%

	LA31	LA32	LA33	LA34	LA4	LA41	LA5	LA51	LA52	LA53	LA54	LA55
101	1	1	1	1				1	1	1		
102												
103		1			1	1	1	1	1	1	1	1
	48	50	48	56	7	10	28	67	67	49	26	27

Percent of Language Arts Covered by Each Lesson Plans

19	49%
0	
29	74%

Average of Percents of Language Arts covered by Lesson Plans

50%
std dev
16%

Each Objective											Average	std dev	
60%	63%	58%	70%	8%	13%	35%	84%	84%	61%	33%	34%	50%	31%
Three—minor objectives							Four—minor		Five—minor objectives				
mean							mean		std dev				
63%							59%		23%				
std dev													
5%													

* * * Appendix P

APPENDIX I

**Percent of Nutrition Education Lesson Plans that Address
Kindergarten Math Objectives**

		* *																			
LP	MA	MA1	MA11	MA12	MA13	MA14	MA15	MA16	MA2	MA21	MA22	MA3	MA31	MA32	MA33	MA4	MA41	MA42		percent of math covered	
1	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
2																				0	
3																				0	
4																				0	
5																				0	
6																				0	
7																				0	
8																				0	
9																				0	
10																				0	
11																				0	
12	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
13																				0	
14	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
15	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
16	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
17	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
18	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
19	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
20	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
21	1																			1	6%
22	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
23																				0	
24	1																			1	6%
25	1																			1	6%
27	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
28	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
29	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
30	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
31	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
32	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
33	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
34	1	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1	15	83%
35																				0	
36																				0	
37																				0	
38																				0	
39	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
40	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
41																				0	
42																				0	
43																				0	
44	1	1																		2	11%
45	1																			1	6%
46	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
47																				0	
48	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1	14	78%
49	1	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1	15	83%
50	1	1	1	1	1	1	1	1	1	1	1	1		1			1	1	1	15	83%

LP	MA	MA1	MA11	MA12	MA13	MA14	MA15	MA16	MA2	MA21	MA22	MA3	MA31	MA32	MA33	MA4	MA41	MA42		percent of math covered
51																			0	
52																			0	
53																			0	
54	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
55	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
56																			0	
57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		17	94%
58																			0	
59																			0	
60																			0	
61																			0	
62																			0	
63																			0	
64																			0	
65																			0	
66	1	1	1	1	1	1	1	1	1	1	1		1						12	67%
67																			0	
68																			0	
69																			0	
70																			0	
71															1	1	1		3	17%
72	1		1						1	1	1				1	1	1		8	44%
73	1	1	1	1					1	1	1		1						8	44%
74	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
75	1		1						1	1	1				1	1	1		8	44%
76	1		1						1	1	1				1	1	1		8	44%
77	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
78	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
79	1		1	1	1	1	1	1	1	1	1				1	1	1		13	72%
80	1																		1	6%
81	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
82																			0	
83	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
84																			0	
85																			0	
86																			0	
87																			0	
88																			0	
89																			0	
90																			0	
91																			0	
92	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
93	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
94	1														1	1	1		4	22%
95	1								1	1	1				1	1	1		7	38%
96	1		1	1												1			4	22%
97	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%
98																			0	
99																			0	
100	1	1	1	1	1	1	1	1	1	1	1				1	1	1		14	78%

LP	MA	MA1	MA11	MA12	MA13	MA14	MA15	MA16	MA2	MA21	MA22	MA3	MA31	MA32	MA33	MA4	MA41	MA42		
101	1	1	1	1	1	1	1	1	1	1	1		1				1	1	1	15
102																				0
103	1	1	1	1	1	1	1	1	1	1	1						1	1	1	14
	53	41	45	42	40	40	40	40	45	45	45	3	5	0	1	45	46	45		
Percent of lesson plans that Cover Each Objective																				Average
	100%	77%	85%	78%	75%	75%	75%	75%	85%	85%	85%	6%	9%	0%	2%	85%	87%	85%		85%
																				std dev
																				33%

percent of math covered
83%
78%
Average
64%
std dev
26%

One - minor objectives	
mean	std dev
78%	4%

* *

Two - minor objectives	
mean	std dev
85%	0%

Three - minor objectives	
mean	std dev
4%	4%

Four - minor objectives	
mean	std dev
86%	1%

Major Objectives n=4	
mean	std dev
83%	33%

* * see Appendix P

APPENDIX J

Percent of Nutrition Education Lesson Plans that Address Kindergarten Social Studies Objectives

LP	88	881	8811	8812	8813	8814	8815	8816	8817	8818	8819	88110	88111	88112	88113	88114	88115	88116	88117	88118	88119	88120	88121
51																							
52																							
53																							
54																							
55																							
56																							
57																							
58																							
59																							
60																							
61																							
62																							
63																							
64																							
65																							
66																							
67																							
68																							
69																							
70																							
71																							
72																							
73																							
74																							
75		1		1																			
76		1		1																			
77																	1			1			
78																	1			1			
79																							
80																							
81																							
82																							
83																							
84																							
85																							
86																							
87																							
88																							
89																							
90																							
91																							
92																							
93																							
94																							
95																							
96																							
97		1		1																			
98		1		1																			
99												1	1	1						1			
100																							

LP 99 881 8811 8812 8813 8814 8815 8816 8817 8818 8819 8820 8821

101
102
103

17	15	0	2	2	1	3	0	0	0	0	4	3	2	2	3	0	9	2	12	0	0	0	0
100%	88%	0%	12%	12%	0%	18%	0%	0%	0%	0%	24%	18%	12%	12%	18%	0%	53%	12%	71%	0%	0%	0%	0%
Percent of lesson plans that Cover E																							

	SS122	SS123	SS124	SS125	SS126	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136	SS137	SS138	SS139	SS140	SS141	Percent of SS cov
1																					0
2																					0
3																					0
4				1	1		1	1											1		15
5																					0
6																					0
7																					0
8																					0
9																					0
10																					0
11																					1
12																					3
13																					0
14																					0
15																					0
16																					0
17																					0
18																					0
19		1							1	1									1	1	13
20									1	1											8
21																					0
22																					0
23																					0
24																					0
25				1					1	1											7
26																					0
27																					0
28																					0
29																					0
30																					0
31																					0
32																					0
33																					0
34																					0
35																					6
36									1	1											7
37																					1
38																					0
39																					0
40																					0
41																					0
42																					0
43																					0
44																					0
45																					0
46																					0
47																					7
48																					0
49																					9
50																					9
																					8

113

	SS122	SS123	SS124	SS125	SS126	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS136	SS137	SS138	SS139	SS140	SS141	Percent of SS	
51																					0	
52																					0	
53																					0	
54																					0	
55																					0	
56																					0	
57																					0	
58																					0	
59																					0	
60																					0	
61																					0	
62																					0	
63																					0	
64																					0	
65																					0	
66																					0	
67																					0	
68																					0	
69																					0	
70																					0	
71																					0	
72																					0	
73																					0	
74				1			1		1												0	
75				1			1		1												0	
76																					7	16%
77																					7	16%
78																					0	
79																					0	
80																					0	
81																					0	
82																					0	
83																					0	
84																					0	
85																					0	
86																					0	
87																					0	
88																					0	
89																					0	
90																					0	
91																					0	
92																					0	
93																					0	
94																					0	
95																					0	
96				1			1		1												0	
97		1	1	1			1		1												0	
98																					6	14%
99																					10	23%
100																					0	

88122	88123	88124	88125	88126	88127	88128	88129	88130	88131	88132	88133	88134	88135	88136	88137	88138	88139	88140	88141	Percent of 86
101																				0
102																				0
103																				0
																				Average std dev
																				17%
																				6%

2	1	10	1	2	13	15	0	0	0	0	0	0	0	0	0	0	0	0	2	1
ach Objective																				Average std dev
12%	6%	50%	6%	12%	76%	88%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%
																				17%
																				28%

One - minor objectives		*	*
mean	std dev		
13%	22%		

* * see Appendix p

APPENDIX K

Percent of Nutrition Education Lesson Plans that Address Kindergarten Science Objectives

		K																	Percent of SC covered		
LP	SC	SC1	SC11	SC12	SC13	SC14	SC15	SC16	SC17	SC18	SC19	SC110	SC111	SC112	SC113	SC114	SC115	SC116	SC117		
1																				7	37%
2		1	1	1	1						1			1	1	1				6	32%
3																				0	
4																				0	
5																				0	
6																				0	
7																				0	
8																				0	
9																				0	
10																				0	
11																				0	
12																				0	
13																				0	
14																				0	
15																				0	
16																				0	
17																				0	
18																				0	
19																				0	
20																				0	
21																				0	
22																				0	
23																				0	
24																				0	
25																				0	
26																				0	
27																				0	
28																				0	
29																				0	
30																				0	
31																				0	
32																				0	
33																				0	
34																				0	
35																				0	
36																				0	
37																				0	
38																				0	
39																				0	
40																				0	
41																				0	
42																				0	
43																				0	
44																				0	
45																				0	
46																				0	
47	1	1							1	1	1	1	1	1	1	1				9	47%
48																				0	
49																				0	
50																				0	

117

LP	8C	8C1	8C11	8C12	8C13	8C14	8C15	8C16	8C17	8C18	8C19	8C110	8C111	8C112	8C113	8C114	8C115	8C116	8C117	Percent of SC covered	
101																				0	
102																				7	37%
103	1	1									1	1		1	1	1					Average Std Dev
	25	25	1	1	0	0	0	0	1	3	24	21	18	22	23	3	0	9	10		43%
Percent of Lesson Plans that Cover each Objective																					Average Std Dev
	100%	100%	0%	4%	0%	0%	32%	32%	4%	12%	96%	84%	72%	88%	82%	12%	0%	36%	40%	42%	36%

One - ml	
mean	std dev
36%	36%

* *

* * see Appendix P

APPENDIX L

**Percent of Nutrition Education Lesson Plans that Address
Kindergarten Health Objectives**

		* *																					
LP	HE	HE1	HE11	HW12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE110	HE111	HE112	HE113	HE114	HE115	HE116	HE117	HE118	HE119	HE120	HE121
1		1	1			1												1	1	1	1	1	1
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							
16																							
17																							
18																							
19																							
20																							
21																							
22																							
23																							
24																							
25																							
27																							
28																							
29																							
30																							
31																							
32																							
33																							
34																							
35																							
36																							
37																							
38																							
39																							
40																							
41																							
42																							
43																							
44																							
45																							
46																							
47																							
48																							
49																							
50																							

121

[illegible]

HE122 HE123 HE124			Percent of HE covered
1			35%
2			0
3			0
4			0
5			0
6			0
7			0
8			0
9			0
10			0
11			0
12			0
13			0
14			0
15			0
16			0
17			0
18			0
19			0
20			0
21			0
22			0
23			0
24			0
25			0
27			0
28			0
29			0
30			0
31			0
32			0
33			0
34			0
35			0
36			0
37			0
38			0
39			0
40			0
41			0
42			0
43			0
44			0
45			0
46			0
47			0
48			0
49			0
50			0

HE122	HE123	HE124	Percent of HE covered
51			0
52			0
53			0
54			0
55			0
56			0
57			0
58			0
59			0
60			0
61			0
62			0
63			0
64			0
65			0
66			0
67			0
68			0
69			0
70			0
71			0
72			0
73			0
74			0
75			0
76			0
77			1 38%
78			0
79			0
80			0
81			0
82			0
83			1 38%
84			0
85			0
86			0
87			0
88			0
89			0
90			0
91			0
92			0
93			0
94			0
95			0
96			0
97			0
98			0
99			0
100			0

Percent of HE covered
0
0
0
Average Bid Dev
37%
2%

HE122 HE123 HE124

0	0	0	0
0%	0%	0%	0%
Average Bid Dev			
0%	0%	37%	40%

101
102
103

* * * Appendix P

APPENDIX M

Percent of Nutrition Education Lesson Plans that Address Kindergarten Physical Development Objectives

* *														
LP	PD	PD1	PD11	PD12	PD13	PD14	PD15	PD16	PD17	PD18	PD19	PD110		Percent of PD covered
1													0	
2													0	
3													0	
4													0	
5													0	
6													0	
7													0	
8													0	
9													0	
10													0	
11													0	
12													0	
13	1	1	1					1			1	1	6	50%
14													0	
15													0	
16													0	
17													0	
18	1												1	8%
19	1	1	1					1			1	1	6	50%
20													0	
21	1												1	8%
22													0	
23													0	
24													0	
25													0	
27	1	1								1	1	1	5	42%
28													0	
29	1	1							1		1	1	5	42%
30	1	1	1					1	1	1	1	1	8	67%
31	1	1							1		1	1	5	42%
32	1	1							1		1	1	5	42%
33	1	1	1		1			1	1		1	1	8	67%
34	1												1	8%
35	1												1	8%
36	1												1	8%
37													0	
38													0	
39													0	
40													0	
41													0	
42													0	
43													0	
44													0	
45													0	
46													0	
47													0	
48													0	
49													0	
50													0	

LP	PD	PD1	PD11	PD12	PD13	PD14	PD15	PD16	PD17	PD18	PD19	PD110	Percent of PD covered
101													0
102													0
103													0

Average Bid Dev
37% 24%

14	9	5	0	2	0	0	5	6	3	9	9	Average Bid Dev
100%	64%	36%	0%	14%	0%	0%	36%	43%	21%	64%	64%	37%
												30%

One-minor objectives	*	*
mean	28%	24%
std dev		

* * see Appendix P

APPENDIX N

**Percent of Nutrition Education Lesson Plans that Address
Kindergarten Art Objectives**

* *

LP	A	A1	A11	A12	A13	A14	A15	A16	A17	A18	A19	A110	A111	A112	A113	A114	A115	A116	A117	A118	A119	A120	A121	Percent of All
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19	1	1	1	1		1	1		1	1		1	1											
20	1	1			1	1	1	1	1	1	1	1	1	1	1		1							11 48%
21																								13 57%
22																								
23																								
24																								
25																								
27																								
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40																								
41																								
42																								
43																								
44																								
45																								
46																								
47	1	1				1	1		1	1	1	1	1	1	1	1								11 48%
48																								
49																								
50																								

132

LP	A	A1	A11	A12	A13	A14	A15	A16	A17	A18	A19	A110	A111	A112	A113	A114	A115	A116	A117	A118	A119	A120	A121	Percent of Art
51																								0
52																								0
53																								0
54																								0
55										1		1					1	1	1					7
56		1	1																					0
57																								0
58		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		21
59																								0
60																								0
61																								0
62																								0
63																								0
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67																								0
68																								0
69																								0
70																								0
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72																								0
73																								0
74																								0
75		1	1				1	1	1		1	1	1	1			1	1						11
76		1	1				1	1	1		1	1	1	1			1	1						11
77																								0
78																								0
79		1	1	1	1		1	1	1	1	1	1	1	1			1	1	1	1	1	1		18
80																								0
81																								0
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97																								0
98																								0
99																								0
100																								0

133

30%

91%

48%

48%

78%

APPENDIX O

**Percent of Nutrition Education Lesson Plans that Address
Kindergarten Music Objectives**

[illegible]

LP	M	M1	M11	M12	M13	M14	M15	M16	M17	M18	M19	M110	M111	M112	Percent of M covered
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51															0
52	1	1	1	1			1				1	1			7 50%
53	1	1	1	1			1								5 36%
54															0
55															0
56															0
57															0
58															0
59															0
60															0
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67															0
68															0
69															0
70															0
71															0
72															0
73															0
74															0
75	1	1	1				1								4 29%
76	1	1	1				1								4 29%
77															0
78	1	1	1	1			1								5 36%
79	1	1		1			1								4 29%
80															0
81															0
82															0
83															0
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85															0
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93															0
94															0
95															0
96															0
97															0
98															0
99															0
100															0

LP	M	M1	M11	M12	M13	M14	M15	M16	M17	M18	M19	M110	M111	M112	Percent of M covered
101															0
102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14 100%
103															0
															Average Std Dev 39% 16%

	22	21	19	18	2	1	21	3	4	1	3	2	1	1	Average Std Dev
	100%	95%	80%	80%	9%	5%	95%	14%	18%	5%	14%	9%	5%	5%	39% 40%

One - minor objective	
mean	std dev
29%	35%
*	*

* * see Appendix P

APPENDIX P

Kindergarten Curriculum Subjects and Objectives with Codes

LA- LANGUAGE ARTS

KINDERGARTEN

1- **MECHANICS:** (Major Objective)

The student will identify correct capitalization and ending punctuation.

- 1- ● Develop skill in gross motor functioning.
- 2- ● Develop fine motor functioning. (Minor Objectives)
- 3- ● Develop hand-eye coordination.
- 4- ● Recognize likenesses and differences of objects and pictures.
- 5- ● Classify objects and pictures.
- 6- ● Follow progression such as left-to-right, top-to-bottom, and front-to-back.
- 7- ● Position paper properly and hold a crayon or pencil correctly.
- 8- ● Discriminate and identify uppercase and lowercase letters.
- 9- ● Print own first name.
- 10- ● Recognize own name when printed.
- 11- ● Speak in complete sentences.
- Ask questions.

2- **SPELLING AND WORD IDENTIFICATION TECHNIQUES:** (Major Objective)

The student will use correct pronunciation to identify sounds and words, and recognize correctly spelled words. (Although this is a domain statement for all grade levels, kindergarten students are not expected to read or to spell words.)

- 1- ● Verbalize own experiences, needs, and wants.
- 2- ● Make and describe observations. (Minor Objectives)
- 3- ● Ask questions.
- 4- ● Use vocabulary necessary to describe self.
- 5- ● Recognize rhyme, rhythm, and repetition in spoken words or literature.
- 6- ● Name common objects.
- 7- ● Speak clearly and politely.
- 8- ● Enjoy being read to by others.
- 9- ● Recognize own name when printed.
- 10- ● Develop skill in auditory discrimination.
- 11- ● Recognize and name letters of the alphabet.

3- **COMPREHENSION:** (Major Objective)

The student will answer questions about a reading selection.

- 1- ● Listen to simple stories and retell. (Minor Objectives)
- 2- ● Listen to answer questions, predict an event or outcome, find the main idea, or identify sequence.
- 3- ● Repeat simple verses from memory.
- 4- ● Describe and interpret contents of a picture.

4- **REFERENCE STUDY:** (Major Objective)

The student will use alphabetizing skills.

- 1- ● Recognize and name letters of the alphabet. (Minor Objective)

- 5- **WRITING READINESS* :** (Major Objective)
The student will demonstrate the ability to use writing readiness skills.
- 1- ● Verbalize own experiences, needs, and wants.
 - 2- ● Make and describe observations. (Minor Objectives)
 - 3- ● Use vocabulary necessary to describe self.
 - 4- ● Recognize that everyone has experiences to write about.
 - 5- ● Recognize that writing can entertain and inform.

The skills in Writing Readiness are not subject to be tested within the domains of the criterion referenced portion of the TCAP Achievement Test.

MA- MATHEMATICS
KINDERGARTEN

- 1- **NUMERATION:** (Major Objective)
The student will identify, order, and compare numbers. (Minor Objectives)
- 1- • Recognize and show which is larger/smaller, longer/shorter, taller/shorter, etc., when given two similar objects.
 - 2- • Recognize and show terms of relative position (above, under, right, behind, etc.).
 - 3- • Identify equivalent sets (1-10) by one-to-one correspondence.
 - 4- • Identify sets of 1-5 on sight.
 - 5- • Count to 10; identify numerals 0-10.
 - 6- • Tell which of two numbers is less or which is greater up to 10.
- 2- **WHOLE NUMBER/INTEGER OPERATIONS:** (Major Objective)
The student will compute using whole numbers. (Minor Objectives)
- 1- • Show and state that when objects are taken from a set, the set becomes smaller.
 - 2- • Show and state that when objects are added to a set, the set becomes larger.
- 3- **MEASUREMENT:** (Major Objective)
The student will identify and apply knowledge of time, money value, and measurement concepts.
- 1- • Identify a penny and a nickel. (Minor Objectives)
 - 2- • Recognize clocks and watches as instruments for measuring time.
 - 3- • Recognize the thermometer as a device to measure temperatures.
- 4- **GEOMETRY:** (Major Objective)
The student will identify basic geometric shapes. (Minor Objectives)
- 1- • Identify, match, and reproduce shapes with given shapes (circle, square, triangle, and rectangle).
 - 2- • Match terms with given shapes.

SS- SOCIAL STUDIES

KINDERGARTEN

1- Kindergarten students should be able to do the following: (Major Objective)

- 1- ● Know individuals have a space or develop an understanding of space and spatial relationships.
- 2- ● Know individuals live in an environment and environments differ. (Minor Objectives)
- 3- ● Be aware what a globe and map represent.
- 4- ● Know individuals have a personal history (state name, birthdate, address, family members).
- 5- ● Recognize that things change over time (seasons of the year, people and objects).
- 6- ● Be aware the laws and rules we follow are decided by the people (school, community, country).
- 7- ● Recognize the need for rules for daily living and fair treatment of others.
- 8- ● Recognize that a person born into a country is a citizen of that country.
- 9- ● Recognize that individuals meet their needs/wants in different ways.
- 10- ● Recognize that people usually work to satisfy needs and wants by doing different jobs.
- 11- ● Be aware individuals choose jobs they like and can do well.
- 12- ● Recognize all jobs are important and some jobs are dependent on other jobs.
- 13- ● Recognize the worth of each individual including self.
- 14- ● Recognize the behavior of individuals may be changed by relationships with others.
- 15- ● Recognize individuals learn to do things from their culture.
- 16- ● Be aware many jobs require that people work together.
- 17- ● Understand some differences among people are a result of their culture.
- 18- ● Develop an understanding of the spatial relationship of the home to the school.
- 19- ● Recognize each family has a family tree.
- 20- ● Be aware schools have changed through the years.
- 21- ● Understand why families need rules.
- 22- ● Understand cooperation is necessary when working within large and small groups to complete tasks.
- 23- ● Know that family structures change.
- 24- ● Be aware every culture has a family unit which determines the ways families do things.
- 25- ● Understand people need shelter and shelters differ according to the culture and the environment.
- 26- ● Recognize how jobs are similar/different from one community to another.
- 27- ● Be aware of the contributions of different cultures.
- 28- ● Be aware of similarities and differences of food, clothes, homes, games and families in different cultures.
- 29- ● Know people travel from place to place by different means of transportation.
- 30- ● Know land and water forms affect types of transportation.
- 31- ● Know means of transportation have changed over the years and will continue to change.
- 32- ● Know rules of safety including signs and signals.
- 33- ● Be aware that people pay to use public transportation.
- 34- ● Be aware different types of transportation provide jobs for people.
- 35- ● Know means of transportation may differ in different cultures.
- 36- ● Know different aspects of the environment including land forms, water, natural and man-made features.
- 37- ● Understand there are rules to protect the environment.
- 38- ● Recognize that pollution can be detrimental to personal health and jobs.
- 39- ● Be aware of jobs related to working with and protecting the environment.

- 40- ● Be aware that the ways people use environmental resources are determined by their culture.
- 41- ● Be aware pollution of one area of the environment may affect other areas of the total environment.

SC- SCIENCE

KINDERGARTEN

- 1- Kindergarten students should be able to do the following: (Major Objective)
- 1- ● Understand electricity is not only useful but can be dangerous.
- 2- ● Learn the importance of observing safety rules when using electricity. (Minor Objectives)
- 3- ● Learn magnets can both attract and repel.
- 4- ● Recognize the basic properties of magnets.
- 5- ● Recognize there are different kinds and sources of sound.
- 6- ● Recognize the basic properties of sound.
- 7- ● Understand animals reproduce by having young and some animal young are like the adult.
- 8- ● Realize animals live in a variety of habitats and seasonal changes affect animals.
- 9- ● Understand plants as living things and how they grow and change.
- 10- ● Identify the major parts of a plant.
- 11- ● Distinguish similarities and differences among human beings.
- 12- ● Identify the body part associated with the sensory system.
- 13- ● Understand humans experience the world through their senses.
- 14- ● Realize weather conditions change from day to day.
- 15- ● Realize rocks are part of the earth's composition and have properties.
- 16- ● Develop an appreciation for the earth's environment and the necessity for keeping it clean.
- 17- ● Realize how people affect the environment (past, present, future).

HE- HEALTH

KINDERGARTEN

- 1- Kindergarten students should be able to do the following: (Major Objective)
 - 1- ● Identify communities in which students live.
 - 2- ● Identify health helpers and their roles in the community. (Minor Objectives)
 - 3- ● Understand individual responsibilities in promoting good health practices.
 - 4- ● Identify factors that determine choices in selecting health products and services.
 - 5- ● Understand individual responsibility in prevention of illness.
 - 6- ● Identify resources for the treatment of illnesses.
 - 7- ● Identify AIDS as a communicable disease.
 - 8- ● Identify various kinds of pollution within the immediate environment.
 - 9- ● Identify ways of controlling pollution.
 - 10- ● Recognize the importance of various feelings in family relationships.
 - 11- ● Identify the individual uniqueness of family members.
 - 12- ● Recognize variations of family structure.
 - 13- ● Be aware of individual differences and similarities.
 - 14- ● Identify healthy ways in which feelings may be expressed.
 - 15- ● Be aware of ways to deal with unpleasant situations.
 - 16- ● Be aware of the importance of accepting a variety of foods.
 - 17- ● Identify various foods within the four food groups.
 - 18- ● Identify examples of healthy snacks.
 - 19- ● Be aware of the seven dietary guidelines for Americans.
 - 20- ● Identify basic health practices that influence physical appearance.
 - 21- ● Identify the five senses and match the body parts with each one.
 - 22- ● Identify safety rules and practices to be followed in daily life activity.
 - 23- ● Identify safe practices in the use of medicines and drugs in keeping people healthy.
 - 24- ● Be aware of the importance of choosing not to use tobacco, illicit drugs, or alcohol.

PD- PHYSICAL EDUCATION

KINDERGARTEN

- 1- Kindergarten students should be able to do the following: (Major Objective)
 - 1- ● Be aware of the relationships of basic locomotor skills to various games and sports.
 - 2- ● Be aware of the importance of manipulative skills to various games and sports.
 - 3- ● Be aware of spatial relationships in games and sports. (Minor Objectives)
 - 4- ● Understand the basic rules of safety for gymnastics.
 - 5- ● Demonstrate various beginner gymnastics skills and how to self-test for these skills.
 - 6- ● Demonstrate increased confidence in movement as body control is developed.
 - 7- ● Be aware of the role of body movement and control in developing physical fitness.
 - 8- ● Be aware of the relationship between rhythmic body movement and accompaniment.
 - 9- ● Be aware of the interrelationship of body movement, space, and time.
 - 10- ● Be aware of the role of body movement in the expression of feeling and ideas.

M- MUSIC
KINDERGARTEN

- 1- Kindergarten students should be able to do the following: (Major Objective)
- 1- ● Recognize the presence and absence of sound.
 - 2- ● Develop skill in reproducing steady beat. (Minor Objectives)
 - 3- ● Recognize and reproduce long and short sounds vocally and with classroom instruments.
 - 4- ● Recognize and reproduce high and low pitches vocally and with classroom instruments.
 - 5- ● Develop skill in singing repetitive, narrow-range, rhythmically simple songs.
 - 6- ● Recognize the difference between fast and slow tempos.
 - 7- ● Recognize the difference between loud and soft dynamics.
 - 8- ● Recognize the differences in tone colors of voices and classroom instruments.
 - 9- ● Aurally recognize beginnings and endings in musical compositions.
 - 10- ● Recognize likenesses and differences in simple rhythmic and melodic patterns.
 - 11- ● Aurally recognize the difference between a sound that occurs alone and sounds that occur simultaneously.
 - 12- ● Recognize the difference between familiar lullabies and marches.

A- VISUAL ART

KINDERGARTEN

- 1- Kindergarten students should be able to do the following: (Major Objective)
 - 1- ● Recognize line and the characteristics of long, short, thick, thin, zig-zag and wavy lines.
 - 2- ● Recognize that closure of a line creates a shape.
 - 3- ● Recognize that lines can create happy, sad, angry, surprised, or other feelings. (Minor Objectives)
 - 4- ● Recognize that every object has a basic shape.
 - 5- ● Recognize that shapes can be found within shapes.
 - 6- ● Recognize that parts relate to a whole (shapes connected and overlapping create objects).
 - 7- ● Describe objects in terms of their shapes (triangle = Teepee; circle = apple, etc.).
 - 8- ● Recognize that basic shapes relate to basic forms (square/cube; triangle/cone; circle/sphere).
 - 9- ● Describe surfaces in terms of rough, sticky, bumpy, or smooth textural qualities.
 - 10- ● Recognize red, blue, and yellow as primary colors.
 - 11- ● Develop skill in mixing primary colors to make secondary colors (red and yellow = orange, yellow and blue = green, blue and red = purple).
 - 12- ● Use white to change a color to a tint.
 - 13- ● Use black to change a color to a shade.
 - 14- ● Describe space in terms of empty and full.
 - 15- ● Describe space in terms of in-front-of and in-back-of (overlapping).
 - 16- ● Describe space in terms of near and far.
 - 17- ● Recognize foreground and background in a two-dimensional composition.
 - 18- ● Recognize that artists create artworks.
 - 19- ● Recognize that all artworks represent personal thoughts, feelings, and ideas.
 - 20- ● Recognize that certain aspects of nature are universally considered aesthetically pleasing (rainbows, sunsets, etc.).
 - 21- ● Identify an art museum as a place to house respected works of art.

APPENDIX Q

List of Lesson Plan Titles with Sources

Lesson Plans

1. Eat A Variety of Foods	Source
1- Snacking mouse	9
2- Green eggs and ham	9
3- Family eating Patterns	9
4- Nutritious Snacks	9
5- Puppet show	9
6- 1,2,3,4 I think I 'll try some more	11
7- I'm trying new foods play	11
8- Bulletin board tid bits	11
9- I tried it badge	11
10- Variety surrounds me	11
11- Food magic	11
12- Perfect pains	11
13- Color me hungry	11
14- Variety jar	11
15- Favorite food collage	11
16- Banana surprises	11
17- Food fun dominoes	11
18- Going for a walk	11
19- Picnic party circles	11
20- Barnyard bonanza	11
21- I am I said	11
22- Animals match up	11
23- Animal foods mural	11
24- Sticky Raccoon	11
25- Eating corn	11
26- Body building train	11
27- Body building introduction	11
28- Body building milk and dairy	11
29- Body building fruits and vegetables	11
30- Body building meat, poultry, fish, eggs, and beans	11
31- Body building bread and cereal	11
32- Body building pulling it all together	11
33- Body building "Sometimes Food"	11
34- Watch me grow	11
35- Food makes me me	11
36- Fishing for dairy foods	11
37- Fill it up	11
38- Tossing for good health	11
39- Basic Eating mural	11
40- Shopping feeds me fine	11
41- Plum Pan's porridge plan	11
42- Feed me five	11
43- Feeding Alfonso	11
44- Breakfast beauties	11
45- Snackin' food	11
46- Food and senses	10
47- Food sources	10
48- Forms of food	10
49- Peter Rabbit	10

	Source
50- Let's play farm, grocery store, restaurant	3
51- Smelly boxes and feelie socks	3
52- Silly songs	3
53- Where do we get milk	8
54- Developing language skills	8
55- Developing the senses	8
56- Role playing	8
57- Developing math	8
58- Arts and crafts	8
59- Eggs	6
60- Milk	6
61- Cheese	6
 2. Decrease Fat Intake	
62- Choose the better snack	7
63- choose healthy snacks	4
64- common nutritious snacks	10
65- Simple snacks	10
66- Healthy heart restaurant	2
 3. Eat Plenty of Fruits, Vegetables, and Grains	
67- What does your taste tell you	7
68- Fishing for food	7
*69- Nutrition newsletter note	6
70- Activity sheet	6
71- Exploring carrots	6
72- Exploring celery	6
73- Exploring cabbage	6
74- Exploring sweet pepper	6
75- Exploring banana	6
76- Exploring pineapple	6
77- Exploring apple	6
78- Exploring orange	6
79- Exploring oatmeal	6
80- How bread is made	6
81- Grow your own	4
82- Exploring individual foods	2
83- Come to your senses	8
84- See how vegetables grow	8
85- Underground vegetables	8
86- Some vegetable stems are good to eat	8
87- Dark green leaves for us to eat	8
88- Please eat these flowers	8
89- Fruits that are vegetables	8
90- vegetable seeds are very good indeed	8
91- Vegetable garden soup	8
92- What can we do with an apple	8
93- Where do we get our fruit	8
94- The citrus family	8
95- What can we do with an orange	8
96- What comes out of the earth	8
97- Cereals	8

98- Grinding wheat to make flour	Source
99- Flour power	8
100- Delicious discoveries	8
101- Let's snack	8
102- Songs	8
103- Gardening with children	3
*not included in 102 lesson plans because it is a newsletter rather than a lesson plan	

APPENDIX R
List of Definitions

LIST OF DEFINITIONS

Whole Language Learning -- A child-centered, literature-based approach to education that requires a great amount of reading and writing on the part of the student (12).

Dietary Guidelines -- A list of clear-cut principles for proper eating habits developed for the consumer by the U.S. Department of Agriculture and the U.S. Department of Health and Human Services. It is intended to decrease the incidence of coronary heart disease, hypertension, obesity, and cancer (27).

USDA Food Guide Pyramid -- A pictorial message of proper eating habits meant to convey the messages of the Dietary Guidelines (29).

Key To Appendices

*LA = Language Arts
MA = Math
SS = Social Studies
SC = Science
HE = Health
PD = Physical Development
A = Art
M = Music

VITA

Mary Katherine Powers was born in Gastonia, North Carolina on July 26, 1970. She attended elementary schools in the Gaston County School District and graduated from Ashbrook Highschool (Gastonia) in June 1988. She received the degree of Bachelor of Science in Nutrition from the University of Tennessee, Knoxville in December of 1991. She reentered the University of Tennessee in May of 1992 and in December of 1993 received a Master of Science degree in Nutrition.