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**Healthy Living: A Handbook for the Promotion of Nutritional Health for Students  
with Significant Disabilities**

by

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### **Abstract**

This project discusses the need for a program that promotes the health and nutrition of students with significant intellectual and developmental disabilities in schools, as well as, details what this might look like in an educational setting for students' with significant intellectual and developmental disabilities. The issue of childhood obesity was examined and nutrition education in an educational environment was discussed. In addition, the importance of incorporating nutrition-based interventions was presented and the significance of nutrition development for students with disabilities was acknowledged. Due to the lack of available resources for nutrition education implementation in special education classrooms, it becomes the responsibility of education specialists to create their own materials and implement their ideas within their own classrooms in order to promote proper health and nutrition for their students. This project provides education specialists the necessary materials in an easy-to-use handbook to provide students with significant intellectual and developmental disabilities health and nutrition education.

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## **Chapter One**

### **Definition of Problem**

Health and nutrition are concerns for every child. According to the Centers for Disease Control and Prevention (CDC) (2014), childhood obesity has more than doubled in children in the past 30 years. Children aged 6-11 in the United States who were obese increased from 7% in 1980 to approximately 18% in 2012. Adolescents aged 12-19 years who were obese increased from 5% to nearly 21% over the same period. In 2012 more than one third of children and adolescents in the United States were overweight or obese. Currently, the medical labels of obesity and being overweight are more common among children and occur at younger ages. Attention must be paid to educating our children and adolescents about what proper nutrition and health promotion entail. Obesity and being overweight lead to further health complications later in life. In order to promote the well-being for all children, it is the responsibility for all those that work closely with children to be active participants in promoting healthy living for children. This includes, educators. Within an educational setting, professionals should pay specific attention to health and nutrition promotion for students. Issues with being overweight or obese have a major impact on children and adolescents worldwide and consequently affect students' overall quality of life and well-being. It is thus a priority that weight-related issues are addressed through health and nutrition promotion efforts.

For all students, there is a need for further health and nutrition development. According to Speiser et al., children who are overweight often become overweight adolescents and adults, which can be a serious health risk as an adult. Obesity is a serious condition that is associated with a number of medical complications, as well as, increased

mortality in children and adults (2005). In order to better prevent these medical complications that result from obesity and being overweight, children and adolescents ought to be instructed on matters of proper health and nutrition.

Despite the prevalence of obesity, limited information has been made available concerning obesity-related issues among individuals with significant disabilities. Rimmer et al. (2011), found that “little research has been conducted on overweight in children with developmental disabilities” (as cited in Gephart & Loman, 2013, p. 98). For students with significant disabilities, more emphasis must be placed upon their nutritional and health needs as they develop within the education system. Studies presented in the *Journal of Intellectual Disability Research*, demonstrate that individuals who have intellectual or developmental disabilities are at an increased risk of becoming overweight. “People with developmental disabilities are at an even greater risk for obesity than today’s typically developing population” (Grondhuis & Aman, 2014, p. 795). Special education teachers ought to be educated in matters of health and nutrition promotion in order to prevent and treat their students’ individualized health needs. This is especially true for our students with significant disabilities, due to the absence of relevant accessible resources tailored for this subset of the population. I will examine what resources are available for special education teachers to implement programs within their classrooms, as well as, whether or not they are appropriate and sufficient for meeting the individual needs of students with significant disabilities.

Students with significant intellectual and developmental disabilities may be more at risk for obesity and other health related issues due to additional factors, such as medication that may alter appetite, food preferences, deregulate thyroid function,

hormone production, or metabolism, syndromes, physical limitations, and eating habits (Grondhuis & Aman, 2014, pp. 791-794). Therefore, additional attention must be paid to promoting health and nutrition for students with significant disabilities.

This initial chapter will detail the purpose of this project, discuss the significant literature available within this field, explain the methodology by which the project was developed, and highlight the project's significance.

### **Purpose of Project**

This project will provide teachers of students with significant disabilities an easily accessible resource complete with strategies, lesson plans, activities, recipes, and an overall list of tips and resources to promote health and nutrition for their students. Within special education there is a great emphasis on advancing life skills for students with significant disabilities. Teachers aim to support their students in learning how to develop basic life skills such as feeding, dressing, grooming. However, limited attention is being paid to developing students' understanding of proper health and nutrition. The resources developed with this project are designed to address this deficiency.

The purpose of this project is to address the following questions:

- 1) What are the available resources for special education teachers of students with significant disabilities with regard to nutrition education?
- 2) In what ways could a teacher of students with significant disabilities instruct students on how to better meet their health and nutritional needs?
- 3) What strategies can be implemented within the classroom in order to meet the individual health and nutritional needs of students with significant disabilities?

### **Preview Literature**

The review of literature focuses on the problem of childhood obesity and overweightness in children with significant disabilities, information regarding appropriate instructional resources available to special education teachers, as well as the need for further resource development. Literature reviewed examined childhood obesity and discussed what nutrition education is and how it can be implemented in an educational environment (Lockwood, 2011; Speiser, 2005). Other research reviewed also presented the importance of incorporating nutrition-based interventions and components when working with children at risk for poor nutrition and acknowledged the importance of nutrition development for students with disabilities and the lack of available resources (Shor, 2011; Simpson, 2001).

The literature review details the current issues of childhood obesity and other health related issues, the need for health and nutrition education in educational institutions, and current interventions and their effectiveness. I will take this information and use it to develop the resources that are still lacking for meeting the health and nutritional needs of students with moderate or severe cognitive disabilities.

### **Preview Methodology**

The methodology section of this project details the systematic way in which I researched information, gathered data, determined a need, and then created necessary and appropriate resources to be compiled in a handbook that could then be utilized by moderate/severe educators within their classrooms, in order to bolster health and nutrition education for their students. I began by evaluating the available resources prior to

developing this project. I determined what resources were most needed through the use of note taking, observations, and diligent research. I collected appropriate resources, created new resources and compiled them into a convenient handbook that would support moderate/severe special education teachers in implementing effective health promotion strategies, lessons, recipes, and activities.

### **Significance of Project**

This project will provide moderate/severe special education teachers with the resources needed to implement effective and appropriate strategies, lesson plans, recipes, and activities in their classrooms in order to champion health and nutrition education and encourage student well-being. It is important that students be given the necessary tools with regard to proper nutrition because poor nutrition can lead to many serious health concerns, such as, obesity, overweightness, and other health problems. There is limited information and scarce resources regarding health promotion and nutrition education for students with significant disabilities. This handbook will allow for moderate/severe special educators to address their students' health and nutrition needs in an educational setting, as well as, instruct students on how to best meet their personal nutritional needs. In addition, parents can pull ideas from the handbook to implement in the home, and for general education teachers can modify the ideas to meet the needs of their students. The handbook will provide hands-on activities, instructional materials, recipes, and other resources. Teachers will be given the necessary resources in order to develop their own health promotion curricula.

### **Summary of Chapter**

This beginning chapter provides an outline for this project. It informs the reader of the purpose of this project and, through the review of literature, the need for resource development with regard to health promotion of students with significant intellectual and developmental disabilities. This chapter highlights the significance of this project and for whom it is most appropriate, as well as the methods by which information was gathered and resources were compiled.

## **Chapter Two**

### **Literature Review**

Limited attention has been paid to developing students' understanding of proper health and nutrition in an educational setting, especially in regard to students with significant disabilities. The purpose of this project is to discover what resources are available to special education teachers of students with significant disabilities in regard to nutrition education. In addition, this project addresses the question of how education specialists can instruct students on how to better meet their health and nutritional needs, complete with an overview of effective strategies that can be implemented within the classroom.

The literature review of this project explored research conducted with respect to education among students with significant intellectual and developmental disabilities, available resources for nutrition education for this subset of the population, and the need for school interventions in promoting health and nutrition education for students with significant disabilities.

Throughout this review, a large number of available resources were examined. While those resources were not exhausted, they were sufficient to arrive at certain conclusions. One such conclusion was that there is little emphasis placed on the importance of nutrition among students with significant disabilities. Rimmer et al. (2011), found that "little research has been conducted on overweight in children with developmental disabilities" (as cited in Gephart & Loman, 2013, p. 98). Students with

significant disabilities are taught basic life skills needed to function within society and need to have an understanding of proper health and nutrition. Education specialists of these students need to have a hand in promoting these core values.

The first section of this chapter will examine research into the need for health and nutrition information for all students, and specifically for those students with significant disabilities by looking at issues of poor nutrition, obesity and overweightness. It will be followed by a look at the available resources for health and nutrition advocacy within a school setting, and conclude with a summary of the areas in which resources are lacking.

There is no doubt that obesity is a major issue facing youth in America today. It is also widely accepted that one of the most important aspects of instruction for students with significant disabilities is to help prepare them for more independent lives beyond school. Unfortunately, this preparation often neglects the role that nutrition education can play in avoiding obesity and other health issues.

### **Childhood Obesity**

According to the Centers for Disease Control and Prevention (CDC) (2014), facts regarding childhood obesity include:

- Obesity in children has more than doubled in the past 30 years
- Children aged 6-11 in the United States who were obese increased from 7% to approximately 18% from 1980 to 2012.
- Adolescents 12-19 years of age who were obese increased from 5% to nearly 21% over the same period.
- In 2012 more than one third of children and adolescents were overweight or obese.

Obesity, simply put, is the result of excess body fat. However, a multitude of factors such as behavioral, environmental, or genetic can be contributors. According to Speiser et al., children that are overweight often become overweight adolescents and adults, which can be a serious health risk as an adult. Obesity is a serious condition that is associated with a number of medical complications, as well as, increased mortality in children and adults (2005). Medical problems related to obesity include increased occurrence of asthma, sleep apnea, orthopedic complications, higher cholesterol, and increased likelihood of hypertension and diabetes. In addition to the medical problems students may face with obesity, there are also social and psychological ramifications due to society's hesitation to accept those that are overweight. Psychological complications may include depression, body dissatisfaction, increase in teasing and bullying, and an overall decrease in quality of life (Grondhuis & Aman, 2014, p. 788). Issues with overweightness and obesity have a major affect on children and adolescents worldwide and consequently affect a student's overall quality of life and well-being. It is therefore a priority that weight-related issues are addressed through health and nutrition promotion efforts.

Worldwide, rates of obesity are increasing, and children in the United States are becoming obese at younger ages and in turn are becoming at risk for a variety of different health and psychological problems. Maiano (2010) explained, "children and youth with disability are deemed to be at greater risk of obesity" (as cited in Hinckson et al., 2013, p. 1170). There are also higher rates of obesity worldwide among students with intellectual disabilities, according to Grondhuis et al., as written in the *Journal of Intellectual*

Disability Research. However, Hong Kong is still showing low rates of obesity among children with intellectual disabilities. It is thought that these low rates may be a result of segregated schools where diet is highly controlled by the school, which suggests that school interventions may play a large role in health and nutrition promotion for students.

The studies presented in the *Journal of Intellectual Disability Research*, demonstrate that individuals who have intellectual or developmental disabilities are at an increased risk for becoming overweight. “People with developmental disabilities are at an even greater risk for obesity than today’s typically developing population” (Grondhuis & Aman, 2014, p. 795). It is suggested that this may be due to the additional risks this subset of the population encounters, such as, medication that may alter appetite, changes in food preferences, deregulated thyroid function, changes in hormone production, or metabolism; syndromes, physical limitations, and eating habits (Grondhuis & Aman, 2014, pp. 791-794). In addition, people with disabilities are more likely to have “poor dietary habits, low physical activity, and weight disturbances” (Elinder et al., 2010, p.1). This subset of the population is more vulnerable to an increased likelihood of health related issues and chronic diseases, as well as, higher rates of overweightness and obesity in comparison to their typically developing peers. Due to this increased risk for individuals with disabilities, a program composed of health interventions, specifically tailored to the individualized needs of students with intellectual and developmental disabilities is needed. The educational program’s focus should be on the promotion and maintenance of healthy living.

By providing children with information regarding healthy lifestyle choices, such as healthy eating and adequate exercise, the risk of becoming obese or developing any

related diseases can be lowered. The habits our children have are formed in schools, at home, within the community, and through the media. Therefore it is essential that all of these contributing sectors play a role in the prevention of childhood obesity and other health related issues.

### **Health and Nutrition Promotion in Schools**

For many students, good health can have a positive impact on performance in school. According to a study conducted by Forrest (2013), the associations between health and school outcomes were examined in order to test the hypothesis that good health may buffer a child from potentially harmful stressors. Good health was assessed as “absence of functional limitations, low levels of emotional and physical distress, high subjective well being, and positive health behaviors” (p. 187). School outcomes were measured as attendance, connectedness with teachers, engagement in school, grades, and state standardized achievement test scores. It is widely accepted that in order to achieve optimal learning and academic achievement, students need to be in good health. Results demonstrated that good health might prove to be an effective buffer from the negative effects of school and pubertal transition on academic success.

There is no doubt that proper nutrition is a fundamental requirement for enhancing child development. Poor nutrition ultimately leads to negative developmental outcomes in children. It can adversely affect academic, social, and behavioral functioning. “Dietary habits, physical activity and obesity are strong modifiable risk factors for chronic diseases, diabetes, and some cancers” (Elinder et al., 2010, p. 1). Therefore, an increase in overweightness and obesity subsequently leads to a greater likelihood for reduced life expectancy.

Conversely, proper nutrition can have positive impacts in these areas. However, the literature suggests that little emphasis has been given to promoting proper nutrition. “Despite the centrality that nutrition might have on child development, researchers and teachers involved in the care of children have given limited attention to the inclusion of this subject in research and practice...” (Shor, 2011, p. 606). As opposed to any emphasis on nutritional health in regard to child development, the focus usually lands almost exclusively on psychosocial contexts, such as, family characteristics, peer groups, community, and culture. There is limited research about the biological contexts, including nutritional issues, such as access to quality food and nutritional information. Poor nutrition can have detrimental effects on child development. Increasing the emphasis on proper nutrition can result in healthier outcomes and improvement of student well being.

Previous research shows that many students’ daily intake is low in nutrients and is energy dense, attributes that can even be found in many of the students’ school meals (Rosario et al., 2013, p. 20). These low nutrient, energy dense foods and beverages are highly appealing to students and easily accessible. These foods may lead to overconsumption of food and poor eating habits, in turn resulting in children being overweight and obese. In addition, research has shown the important role schools can play in advocating healthy eating habits and physical activities in students. A nutrition program implemented by trained teachers is effective in lessening the increase in solid low nutrient, energy dense foods consumption among children in elementary school (Rosario et al., 2013). Research has demonstrated an ability of an education program to have an impact on diet while eating habits are being formed. “Controlling access to energy dense foods may help in limiting overeating and prevention of the overweight and

obesity epidemic. Early food experiences influence later food choices” (Rosario et al, 2013). Thus, early intervention is key in combating this growing trend.

Nutrition and health interventions focus on the interpretation of available research in order to bolster the health and nutritional status of students, thus improving the associations between health and school outcomes. These interventions can be embedded in all content areas, such as, science, health education, writing, and reading. Nutrition education can be modified to meet the needs of students of different ages, grade levels, or learning abilities. In order to establish an effective health education program, Wang et al., suggested focusing on building a functioning relationship between the cafeteria and the classroom. In addition, if a school program in nutrition education is to be successful, the teachers must also be familiar with the information. The article states that if “schoolchildren and school teachers could be given planned nutrition education as part of their health programs, within a comparatively short time there would be a nutrition-conscious people” (Lockwood, 1949, p. 131). Educators play an important role in promoting healthy living for their students.

Shor’s (2011) study found the following:

Educational systems provide a valuable avenue for teachers to assess and work with children at risk and their parents on ways to reduce the risks of poor nutrition and/or food insecurity and to reduce the emotional impact of such situations.

Sutherland, Gill, and Binns (2004) note that educational institutions have what no other setting in the community, with the exception of the home environment have, and that is continuous contact with children for the first two decades of their lives.

Therefore, teachers have unique opportunities to reinforce health promoting

behaviors of children and their families within a supportive environment and to reach out and work with children at risk of poor nutrition and their parents (p. 607).

Schools play a critical role in advocating nutrition education and healthy lifestyles for children “by establishing a safe and supportive environment with policies and practices that support healthy behaviors. Schools also provide opportunities for students to learn about and practice healthy eating and physical activity behaviors” (CDC, 2014). Educators, therefore, must also examine their role in promoting nutrition education within their classroom in order to hinder the increasing trend of overweightness and obesity in students with intellectual and developmental disabilities (Simpson et al., 2006).

With the increase of adolescent obesity, schools have begun to employ several intervention strategies that hope to deter this ever-increasing trend. However, currently there are barriers hindering the inclusion of nutrition education in schools. In one study conducted by Shor (2011), barriers to providing the subject of nutrition in the work with children at risk of poor nutrition in educational institutions included knowledge-based barriers and institutional-systemic barriers. With regard to knowledge-based barriers, there was a lack of sufficient knowledge about the implications of nutrition on the development of situations of risk to children, as well as a lack of knowledge, which could enable work on nutrition-related components with children at risk. Institutional-systemic barriers included were the lack of financing available for the inclusion of the subject of nutrition in educational institutions, as well as, a lack of nutritional specialists in various regions (Shor, 2011). There can also be political resistance among some

communities to what they see as government overreach, infringing on their rights to freely raise their children any way they wish.

Educators generally believe there should be a high level of importance attached to integrating nutrition-related components throughout their work. However, many believe there is insufficient training and teaching with regard to proper nutrition information. Educators play a significant role in addressing the needs of students with disabilities who also have issues with health and weight, and preventing any further increase in risk of potentially harmful conditions. The preparedness of teachers is critical in developing and implementing an effective nutrition intervention program. In order to be effective, teachers, researchers, and children need to build strong, meaningful relationships, where they can all work in collaboration and shared knowledge. There is a strong need for nutrition programs within educational institutions. Teachers should be provided with flexibility on how to achieve a nutrition intervention program within their individual classrooms. Therefore, while these programs can be effective and teachers value the importance of nutrition interventions, there needs to be more training in preparing teachers to work with situations of poor nutrition and, in turn, provide proper nutrition and health education.

Despite these barriers, incorporating nutrition education in an educational institution is essential in improving our children's overall health. Students may lack the necessary resources at home to access this important information as well as implement changes to their diet. Schools have the ability to incorporate necessary policies and practices that would be effective in transforming nutritional education for students with disabilities and improving their overall quality of life. Nutrition interventions that have

been implemented consist of teaching topics about food groups, vitamins, healthy food choices, cooking methods, etc. through lessons, games, and story reading. Physical activity programs have consisted of having the students participate in forty-five minutes per day of exercise training. Ultimately, there was a significant decrease in the number of overweight children (Nemet et al., 2011). There is a need for further nutrition and health education interventions tailored to students with significant disabilities in an educational setting.

There are members of school personnel, as well as research and educational theorists, who believe that improving nutritional health is the responsibility of parents. Educators should share this responsibility as professionals promoting student well being and help eliminate any barriers that may impede students with significant disabilities from developing to the maximum extent of their abilities.

### **Health and Nutrition Promotion for Students with Significant Disabilities**

Children can benefit from the implementation of nutrition and health intervention programs in their educational settings. Specifically, for students with significant intellectual and developmental disabilities, the benefits can be more profound because currently there is so little emphasis placed upon their nutritional and health needs. Educators and school personnel ought to begin to focus attention on, and become committed to, providing access to health and nutrition information, as well as, implementing new strategies and interventions to improve the health of students with significant disabilities. Early intervention is an effective way to prevent and treat potential health issues and can be applied by educating our students at the earliest possible opportunity. This is especially true for our students with significant disabilities

due to the lack of relevant curricula for this subset of the population (Simpson et al., 2006).

Research has demonstrated that the obesity of children with intellectual disabilities should be a public health concern (Simpson, 2006, p. 50). People with disabilities can be even more vulnerable to acquiring diseases and disorders, especially those related to obesity. However, despite the prevalence of childhood obesity among students with disabilities there remains little information regarding the effectiveness of nutrition education intervention programs on child development, within this subset of the population.

Educators should design effective instructional strategies for students with significant intellectual and developmental disabilities. In order to do this, they must also consider their cognitive levels and physical limitations. Providing nutrition education to students with disabilities imparts proper understanding of what nutrition is and how good nutrition is essential for their growth and development. Proper nutrition education may reduce the likelihood of possible lifestyle-related problems, but educators must be proactive in addressing the needs of students with significant disabilities who are at risk for weight and obesity issues.

Methods and strategies for delivering appropriate nutrition and healthy education interventions for students with significant disabilities include: embedding nutrition education in other subject matter such as, science, health education, writing, reading, etc. and modifying it to meet the needs of students of different ages, grade levels, or learning abilities (Lockwood, 1949). For students with significant disabilities, their objectives as written in their Individualized Education Program (IEP) goals, for nutrition and health,

can be integrated into other subject areas (Simpson, 2006). Nutrition interventions can also be implemented throughout the instruction of topics such as food groups, vitamins, healthy food choices, and cooking methods, through lessons, games, and story reading (Nemet et al., 2011). Within the classroom other effective strategies for implementing a nutrition education intervention program include modeling, scaffolding, self-monitoring, and goal setting (Simpson et al., 2006).

Through the transformation of school foodservices, the incidence of childhood obesity among students with disabilities can also be lowered. In one school district, foodservices were transformed as an intervention to address the current epidemic of childhood obesity. (Wang et al., 2010). Cooking and gardening programs were offered and concepts of nutrition and food consumption were integrated into the academic curriculum. Wang et al., found that students most exposed to the intervention increased their consumption of fruits and vegetables, suggesting that a comprehensive school district intervention program can be effective in increasing healthy living.

### **Summary of Chapter**

To ensure that students with significant disabilities continue to develop appropriately, nutrition education intervention programs and strategies must be integrated within the educational setting. Research demonstrates the prevalence of obesity and overweightness in children with disabilities is a major concern and that despite this prevalence there is still little emphasis on incorporating topics regarding nutrition and health education in classroom instruction. Students with significant disabilities are not being given adequate information regarding their health and nutrition needs. The school can play a significant role in developing strategies and programs that will integrate

nutrition education within other subject areas through effective instructional strategies. The limited research available regarding the effectiveness of nutrition education programs and interventions within the educational setting demonstrates that for children without disabilities there is a positive correlation between nutrition and health education and school performance. Teachers can be given flexibility in how to incorporate these interventions within their classroom. There are a variety of different strategies that can be integrated into already existing curricula. Students with significant intellectual and developmental disabilities will undoubtedly benefit from the implementation of health and nutrition education interventions.

## **Chapter Three**

### **Methodology**

This chapter discusses the methodology applied in the construction of this project. It is the framework for detailing the design of the project, the participants and setting in which its use would be most effective, the instruments utilized throughout, and the processes engaged in the creation of the final project.

### **Design**

The result of this project is a resource guide, a handbook to be used in moderate/severe classrooms in order to encourage health and nutrition promotion among students with significant disabilities. The handbook is composed of basic nutrition information, information regarding picky eaters, instructional materials, such as lesson plans and other supplemental materials, hands-on activities, as well as, a compilation of other appropriate resources such as recipes, tip sheets, and guides to collaborating with other related service providers.

### **Participants/Setting**

This project was created to meet the needs of moderate/severe special education teachers in a primary school setting to promote health and encourage overall well being of their students. The targeted students range in grade level from kindergarten to fifth grade. For purposes of this project, the student participants had moderate to severe disabilities, primarily autism. However, information provided in this handbook could be modified to meet the needs of general education students, as well as for implementation in the home.

### **Instruments**

The handbook is an accumulation of lesson plans, activities, recipes, and other supplementary materials. In order to create this handbook I researched existing handbook templates and other formatting tools, as well as researched the available literature online and in print.

### **Procedures**

In order to create the most useful and effective handbook, I utilized the California State University of San Marcos library website to research available and relevant material regarding nutrition education implemented within an educational setting. I then narrowed my search to nutrition education specifically tailored to students with significant intellectual and developmental disabilities. With the use of the available resources I accessed online I was able to determine a need for further resource development with regard to health and nutrition promotion for students within this specific population. I therefore, began to develop an easy-to-use handbook that could be utilized by education specialists of students with significant disabilities. I began by researching basic nutrition information relevant to all students. I then determined a need for further development of this information for students with significant disabilities. I tailored this information to meet the needs of these students. I developed lesson plans that met their needs, as well as, their IEP goals. Instructional material was modified to meet their abilities. In addition, I provided basic teacher tip sheets and other information regarding instructional strategies that would be applicable to Education Specialists of students with significant intellectual and developmental disabilities. In addition, I created a list of possible activities that can

be implemented in and out of the classroom that would enhance student health and well-being. I then discussed how other related service professionals could lend a beneficial hand in implementing the lessons, activities, and other strategies throughout the day. Lastly, I provided other relevant resources that could further enhance an education specialist's understanding of health and nutrition promotion within an educational setting.

### **Summary of Chapter**

The methodology used in creating this project progressed systematically from an acknowledgment of the problems of childhood obesity and poor nutrition among students with significant disabilities to solutions that can be detailed in a user-friendly handbook and applied as an integral part of a child's educational experience.

## **Chapter 4**

### **Project**

#### **Introduction**

The project's handbook will include basic health and nutrition information that best supports the needs of students with significant intellectual and developmental disabilities, lesson plans and activities, recipes, and useful tips and resources. The handbook provides education specialists information and resources that can be utilized and further implemented within their classroom to provide students with significant disabilities an understanding of proper health and nutrition. Available resources have been examined, pulled, collected, and augmented to create this useful and easily accessible tool. This project is intended to be a guide and an easy-to-use handbook for education specialists of students with significant intellectual and developmental disabilities for the purpose of the promotion of proper health and nutrition.

# Promoting Proper Health and Nutrition in the Classroom

A Master's Project By

Brooke Gerrard

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### **The Purpose**

Students with significant intellectual and developmental disabilities will benefit from instruction on proper health and nutrition in the classroom. This handbook is a collection of available resources and newly developed content. It is an easy to use guide for education specialists to promote a better understanding of health and nutrition for their students. The handbook is complete with basic health and nutrition information, including strategies for picky eaters, lesson plans complete with instructional materials and assessment strategies, activities, recipes, and other relevant tips and resources.

### **Basic Nutrition Information**

According to the Dietary Guidelines developed by the United States Department of Agriculture (USDA) and Health and Human Services (HHS), the best way in which to enjoy better health and reduce the chances for attaining certain diseases is to:

1. Eat a variety of foods
2. Balance the foods you eat with physical activity
3. Incorporate plenty of grain products, vegetables, and fruit in your diet
4. Maintain a diet low in fat, saturated fat, and cholesterol
5. Choose a diet moderate in sugars, salt, and sodium

### **The Five Basic Food Groups**

There are five basic food groups: protein (meat, poultry, fish, dry beans, eggs, and nuts), grains, fruits, vegetables, and dairy. It is important to select foods from each of the five basic food groups for every meal in order to create a balanced and healthy meal.

#### ***Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts***

- ❖ Great source of protein, B vitamins, zinc, and iron
- ❖ Choose lean meat, poultry without skin, fish, and dry beans and peas; they are the lowest in fat
- ❖ Best ways to prepare meat include: boiling, roasting, and broiling
- ❖ Eat egg yolks sparingly because they are high in cholesterol
- ❖ Nuts and seeds are high in fat so eat in moderation

#### ***Grains***

- ❖ Provide complex carbohydrates which are a great source of energy

- ❖ Provide vitamins, minerals and fiber
- ❖ Whole grains are better choices and provide essential fiber

### *Fruits*

- ❖ Provide vitamins
- ❖ Low in fat and sodium
- ❖ Choose fresh fruits, fruit juices, and frozen, canned, or dried fruit
- ❖ Avoid fruit that is canned or frozen in heavy syrup
- ❖ Eat whole fruits
- ❖ Increase intake of citrus fruits high in vitamin C
- ❖ Only 100% fruit juice counts as “fruit”

### *Vegetables*

- ❖ Provide vitamins and minerals
- ❖ Are low in fat and provide fiber
- ❖ Eat a variety of vegetables

### *Dairy*

- ❖ Provides protein, vitamins, and minerals
- ❖ Milk, yogurt, and cheese are the best sources of calcium

## **Picky Eaters**

Many students with significant intellectual and developmental disabilities are picky eaters. There may be several reasons a student is not eating their food.

- ❖ First, begin by considering their medical issues.

It is reasonable to believe that if a student has any medical issues it may affect their eating habits and appetite. Students may have a multitude of gastrointestinal issues and it is important that as an educator incorporating nutrition and health promotion in the classroom, you first begin by ruling out these medical problems. If it is a medical issue of some kind of gastrointestinal distress then it is best if the student's parents consult a doctor.

If the food itself is not causing pain to the student then it is important to examine other possible reasons for picky eating. These include sensory issues, mechanics, routine, and behavior.

### **Sensory**

Students with significant intellectual and developmental disabilities may be refusing to eat foods based upon the food's texture. Combined, the texture, temperature, and taste of foods can be off-putting to many students. If foods feel gross to them they will not eat it. Many students will stick to foods they are familiar with.

### **Mechanics**

Some students may be weary of new foods because they are unsure if they will be able to chew and swallow it. They may fear they will choke or gag on the food.

### **Routine**

Structure and routine around food time are critical for a student to eat well, but sometimes students will not eat certain foods strictly because those foods are not part of their routine.

### **Behavior**

For some students, not eating is simply a behavior. They may be trying to avoid food, get attention, be in control of their eating, or get a food they prefer.

### **Tips for Picky Eaters**

- ❖ Rule out medical problems. If a medical problem exists, have the parent work with a doctor on how best to deal with it.
- ❖ Be patient. For many children it will take several times tasting a food before he/she is willing to eat it without a protest. Allow students time to explore new foods and be patient if they continue to reject them.
- ❖ Begin introducing new foods. Use a “New Food Chart” to track the introduction of new foods into the student’s diet. Allow the student time to feel the food, smell it, taste it, and look at it; become comfortable with the new food.
- ❖ Try mixing new foods with familiar and liked foods.
- ❖ Be aware of textures and students’ sensory needs. How the food feels in the student’s mouth may be more important to them than the food’s flavor. If texture is an issue, try breaking apart the food, chopping it, or blending it.
- ❖ Allow students to play with new food. Be creative and have the students create recipes as a class. Make the recipe together. For example, create a healthy pizza

and use vegetables to create funny faces. Use cookie cutters to make food into fun shapes.

- ❖ Offer choices and control. Sometimes the student may simply not like the food. Provide choices to the students. Allow them to be in control of what goes into their mouths and make their own food choices. Provide a variety of choices from each food group for every meal they have at school.
- ❖ Be careful with rewards. Within special education it is important for immediate and positive reinforcement. Be sure they are not just eating the food to receive the reward but are in fact developing a better understanding of eating well.
- ❖ Separate food on a plate. Many students will not eat foods when they are touching other foods. Be aware of what the student does and does not prefer during mealtime.
- ❖ Get to know your student and his/her eating habits. Some students may prefer certain brands of food and will only eat those. Communicate with the parents on which brands their child prefers.
- ❖ Communicate with the parents of what is being worked on at school in order to be consistent on those goals at home.

**New Food Chart****Student Name:** \_\_\_\_\_**Date:** \_\_\_\_\_

<b>New Food</b>	<b>How Many Bites</b>	<b>Notes</b>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

## Lesson Plans

### Good Enough To Eat

Objectives- Students will listen as the teacher reads aloud to the class as a group, Good Enough To Eat. Provided examples and open-ended comprehension questions, students will identify what healthy food enables them to do according to the story. Healthy food makes you able to...grow, think, breathe, move, stay cool, stay warm, fight germs, heal, and live!

Materials- The book, Good Enough to Eat and pictures of the things healthy food makes you able to do, as well as, other pictures that are unrelated to what food makes you able to do.

Length- 20 minutes. 10 minutes to read the story and 10 minutes to complete the activity and answer comprehension questions.

Preparation- The teacher will prepare the pictures and will read the story in a group setting to the students.

Guide/Lesson- The teacher will read aloud the book Good Enough To Eat. Using interactive technology, students will take turns answering various comprehension questions regarding what healthy foods allow them to do. The teacher will prompt students with questions such as, “What does healthy food allow us to do? Does it allow us to grow?” Using the pictures on the board the teacher will discuss with the students what they think is the correct answer. The teacher will then call on one student to come up to the board and circle or point to the one correct option that represents what healthy food enables them to do according to the story that was just read. The students will take turns coming up to the board and circling the correct picture that represents one of the

things healthy food makes you able to do according to the story. Students are prompted with questions that guide them to the correct understanding of the story. If necessary, students will be given hand-over-hand assistance to correctly identify the picture.

Data Collection: Data will be collected through observation and data collection sheets to detail progress and prompting.



### **Lunch Time**

Objectives: Using plates divided into the five basic food groups and labeled as such, students will identify and choose corresponding pictures of items from each of the five basic healthy food groups to create a meal. Students will understand what kinds of foods create a healthy meal.

Materials: Pictures of the available foods and plates divided into the appropriate amounts of each of the five basic food groups.

Length: 15 minutes

Preparation: Teachers will prepare enough copies of the plates and the graphics of the different food choices.

Guide/Lesson: Teacher and paraprofessionals will provide each student with a plate divided into the five basic food groups placed at their seat. The teacher and paraprofessionals will work one-on-one or in small groups with the students. The students will be prompted with a variety of questions regarding the different foods. For example, point to the foods that are fruits, vegetables, etc. The teacher can ask specific questions such as point to the banana, etc. The teacher/paraprofessional will ask the student, “Which fruit would you like to eat today?” The student will be provided with three pictures to choose from. The student will then pull the picture and place it in the corresponding place on his/her tray. This will ensure that the student has food from all necessary food groups and that they understand the recommended amount of each food through the use of visual representation.

Data Collection: Data will be collected through teacher and paraprofessional observation.

Next Steps: Students will then use this understanding to build healthier lunches. The teacher can continue this lesson using cafeteria trays and foods selected from the cafeteria menus for each week.

### **Fruit and Vegetable Bingo**

Objectives: Students will identify different fruits and vegetables by placing appropriate markers on their “Bingo” cards that represent the corresponding pictures.

Materials: Bingo cards, markers, pictures

Length: 15 minutes

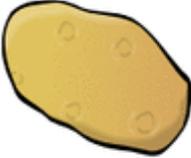
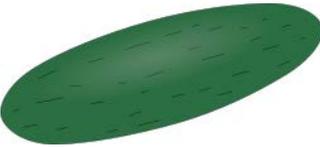
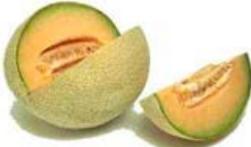
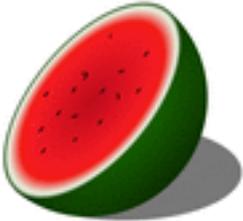
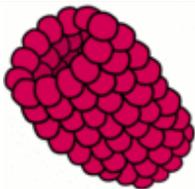
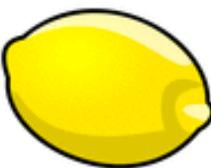
Preparation: Bingo cards will be placed at each student’s seat. Each student will be allotted a certain amount of markers. The teacher or paraprofessional will need to have the pictures ready in order to call out the different fruits and vegetables.

Guide/Lesson: Teacher and paraprofessionals will provide each student with a Bingo card of different fruits and vegetables. Each student will have markers to place over the correct pictures of fruits and vegetables as they are called aloud by the teacher/paraprofessional. The teacher/paraprofessional will pull pictures from the bag of different fruits and vegetables and then say the word aloud also showing the students the pictures. This provides students with both a visual and auditory representation and allows them to correctly identify different fruits and vegetables both by name and appearance, as well as by physically moving the marker to the correct space on their BINGO card. The pictures of the different fruits and vegetables on the BINGO cards are accompanied with the word in order to add reading practice for the students and to help the staff. The teacher can create different Bingo cards and make it more of a game, or can use the same bingo cards where all students win and together develop a better understanding of the different fruits and vegetables. The cards can also have the same fruits and vegetables but in different places on their boards so that students cannot simply look at their classmates board and copy.

Data Collection: Data will be collected through observation and data collection sheet to detail progress and prompting.

Next Steps: Students will then be able to correctly point to the pictures of fruits and vegetables as they are prompted by the teacher/paraprofessional. Using the Bingo card, students will be asked to “show me” or “point to” a picture and demonstrate the ability to appropriately identify their fruits and vegetables. For example, “point to the banana.” Students will then be able to point to the picture of the banana on the Bingo card.

## Fruit and Vegetable Bingo

 Banana	 Peach	 Tomato	 Pineapple	 Cauliflower
 Apple	 Lettuce	 Potato	 Cucumber	 Kiwi
 Broccoli	 Strawberry	FREE	 Orange	 Cantaloupe
 Watermelon	 Grapes	 Carrot	 Corn	 Pepper
 Peas	 Raspberry	 Onion	 Lemon	 Plum





### **Vegetable/Fruit Sort**

Objectives: Given a T-chart with the headings of “fruits” and “vegetables” students will sort pictures of different fruits and vegetables labeled with names in the correct side.

Materials: Pictures of the fruits and vegetables, a T-chart, and glue stick.

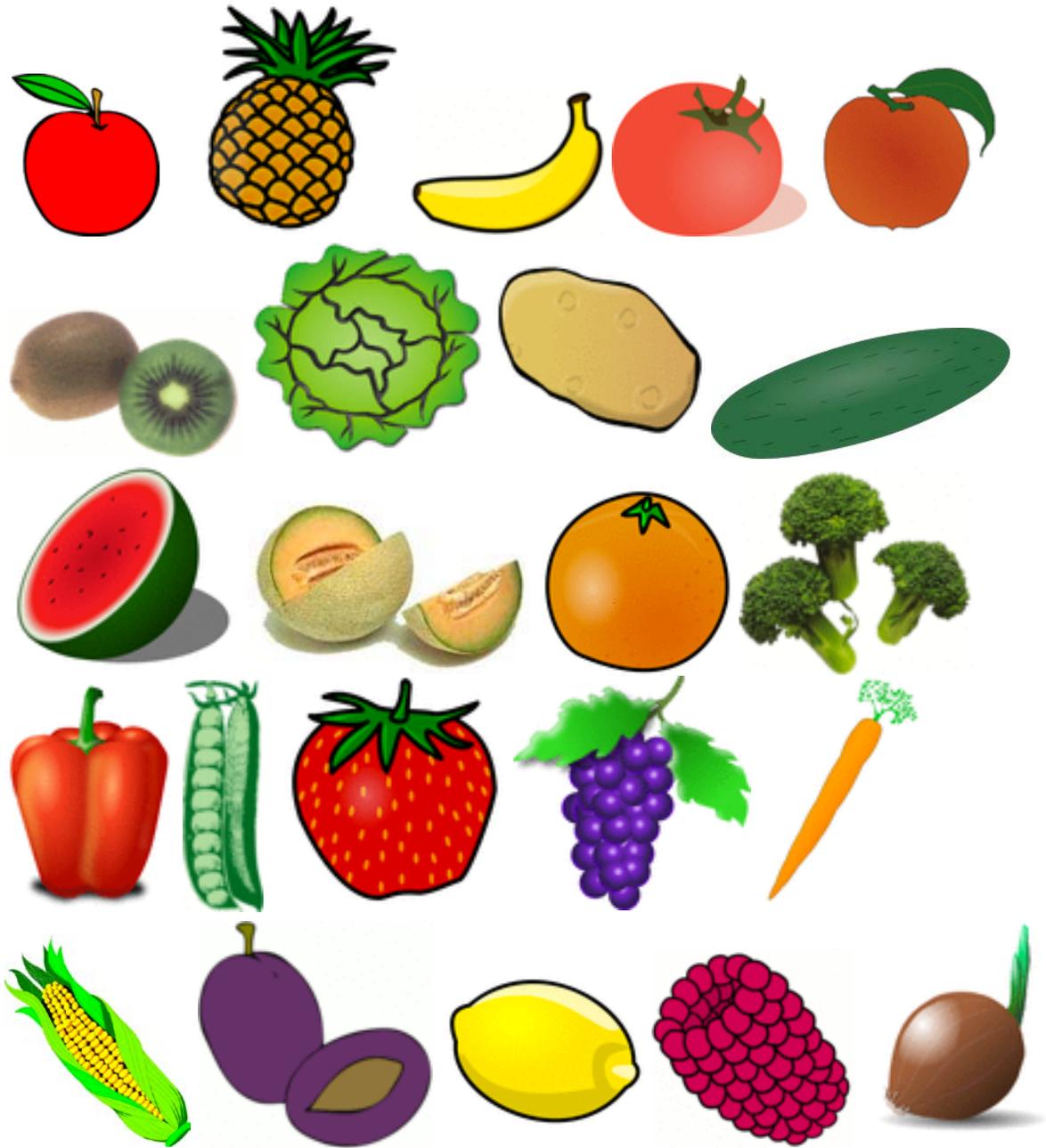
Length: 15 minutes

Preparation: In order to prepare for the lesson the teacher will create a T-chart for each student and place it at their seat along with a glue stick. The teacher may use the pictures from the BINGO cards or may have students cut out pictures from magazines, so that they are required to select the pictures on their own, thus further demonstrating their understanding of these two of the five basic food groups.

Guide/Lesson: Teacher and paraprofessionals will provide each student with a T-chart, pictures of fruits and vegetables and a glue stick. The students will begin working independently and will be provided with support when necessary. Students will sort through the pictures of the fruits and vegetables and glue them on either side of the T-chart. Fruits will be placed on one side and vegetables on the other. The teacher or paraprofessionals will then prompt them with a variety of questions that ask the students to demonstrate their knowledge of different fruits and vegetables. Other questions that can be asked may include, how many fruits? How many vegetables? This will incorporate math into the lesson. Students will then need to point to different pictures of fruits and vegetables in order to demonstrate the ability to correctly identify the fruits and vegetables. For students that are more advanced the teacher or paraprofessional should provide them with a verbal sentence starter and ask them to complete it aloud verbally. For example, a

banana is a \_\_\_\_\_? Depending on ability the student may be able to say the entire sentence aloud or may simply fill in the blank with the word “fruit.”

Data Collection: Data will be collected through teacher and paraprofessional observation and collection of their T-charts.



# Fruit and Vegetable Sort

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Fruit

Vegetables

The form consists of a large empty grid created by a vertical line and a horizontal line intersecting at the center. The word 'Fruit' is written in the top-left quadrant, and the word 'Vegetables' is written in the top-right quadrant. The rest of the grid is blank, intended for students to place or draw items.

### **Healthy/Unhealthy Sort**

Objectives: Given a T-chart with the headings of “unhealthy foods” and “healthy foods” students will sort pictures of different foods labeled with names in the correct side. Students will identify health food options.

Materials: Pictures of the healthy and unhealthy foods, a T-chart, and glue stick.

Length: 15 minutes

Preparation: In order to prepare for the lesson the teacher will create a T-chart for each student and place it at their seat along with a glue stick. The teacher or paraprofessional will prepare pictures of healthy and unhealthy food choices or provide magazines. The teacher may already prepare the pictures or may have the students cut out their own pictures from other resources, such as magazines, in order to further improve their understanding of what foods are healthy and unhealthy.

Guide/Lesson: Teacher and paraprofessionals will provide each student with a T-chart, pictures of healthy and unhealthy foods, and a glue stick. The students will begin working independently and will be provided with support when necessary. Students will sort through the pictures of the different common foods they encounter and glue them on either side of the T-chart. Healthy foods will be placed on one side and unhealthy foods on the other. The teacher or paraprofessionals will then prompt the students with a variety of questions that ask the students to demonstrate their knowledge of different healthy and unhealthy foods. Students will then need to point to corresponding pictures in order to demonstrate the ability to correctly identify the healthier food choices. For students that are more advanced the instructor should provide them with a verbal sentence starter and ask them to complete it aloud verbally. For example, cake is an unhealthy food and celery is a \_\_\_\_\_? Depending on ability the student may be able to say

the entire sentence aloud or may simply fill in the blank with the word “healthy food.” While verbally prompting the student the instructor should point to the corresponding pictures in order to be sure that the student fully comprehends the question. This can also be accomplished by prompting students with questions that ask them to “point to” or “show me” a healthy food options.

Data Collection: Data will be collected through observation collection of their T-charts.

# Healthy Food Sort

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Healthy Foods

Unhealthy Foods

The form consists of a large empty grid created by a vertical line and a horizontal line intersecting at the center. The left side of the grid is labeled 'Healthy Foods' and the right side is labeled 'Unhealthy Foods'. The grid is intended for students to sort various food items into these two categories.

### **Rainbow**

Objectives- Students will identify healthy fruits and vegetables and develop their understanding of different colors.

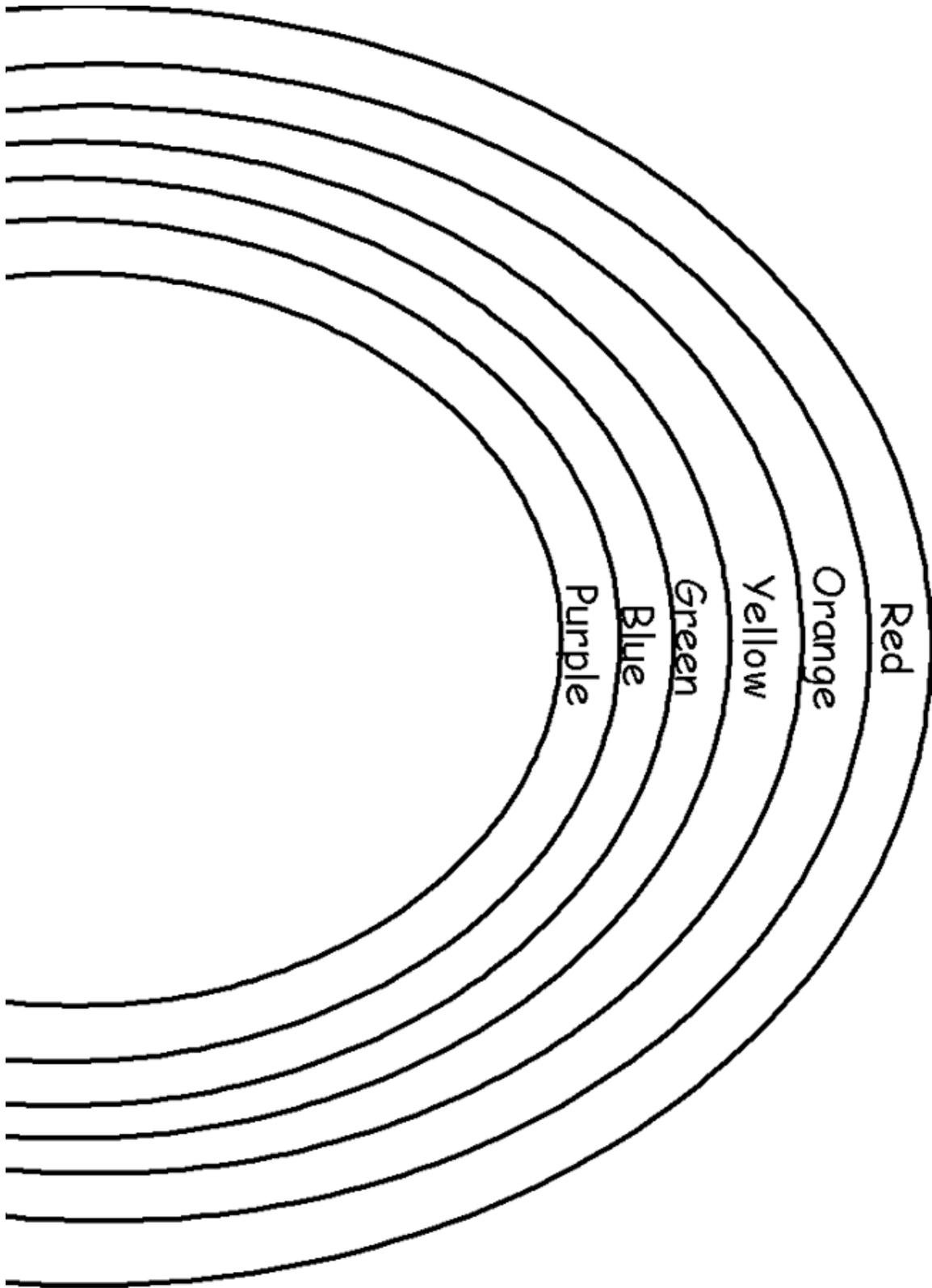
Materials- Rainbows and a variety of pictures of fruits and vegetables from each of the different colors on the rainbow. Paint.

Length- 2 sessions of 15 minutes. The first fifteen minutes will be used to paint the rainbows. On a separate day, another fifteen minutes will be needed for the students to cut and paste the pictures of different healthy fruits and vegetables.

Preparation- The teacher will prepare the pictures of the rainbows and the different colored paint.

Guide/Lesson- The teacher and paraprofessionals will create a blank rainbow for each student. The teacher or paraprofessional will have the students' names written on the back. The students will need to trace their names, hand-over-hand assistance may be required. The teacher or paraprofessional will provide the students with the different colored paint. Students will paint the rainbows themselves with the different colors using their fingers on the first day. The rainbows will then need time to dry. The next day, the teacher or paraprofessional will provide the students with magazines to cut out pictures of different food, most likely fruits and vegetables that are of each of the different colors of the rainbow. Students will then cut out the different pictures and paste them in the correct colored arches of their rainbow. For example, green apples, purple grapes, blue blueberries, red tomatoes, orange oranges, and yellow peppers, etc. The teacher and paraprofessional will prompt them with questions about the different colors and the different healthy food options.

Data Collection- Data will be collected through observation and collection of their completed rainbows.



### **How Many Seeds?**

Objectives- Students will identify different seeds from different fruits and vegetables. Students will count the seeds and glue them correctly on their chart.

Materials- Different fruits and vegetables containing seeds. Charts detailing the different fruits and vegetables. Glue sticks.

Length- 15 minutes

Preparation- Teacher and paraprofessionals will need to slice up fruit and vegetables and provide each student with a small piece of each available fruit and vegetable. The teacher or paraprofessional will need to write each of the student's name on the back of their respective papers. In addition, the chart will need to be prepared and each student will need to be supplied with glue.

Guide/Lesson- Students will begin by tracing their name on the back of the chart. Teacher and paraprofessionals may need to use hand-over-hand assistance. Students will then each have a small piece of several different fruits and vegetables in front of them at their seat. Students will then pull seeds out of the different foods and then place them correctly on their chart to correspond with the different fruit or vegetable it was pulled from. The students will then count each row of their chart and determine how many seeds they collected out of each of the different fruits and vegetables. This will help them to further understand their different fruits and vegetables, as well as, develop their counting skills and fine motor skills.

Data Collection- Data will be collected through observation and the collection of their charts.

Student Name: \_\_\_\_\_

Fruit/Vegetable											Total
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

### **What Doesn't Belong?**

Objective: Using interactive technology, students will identify what foods are healthy and which foods are not by eliminating the unhealthy food from the group of healthy foods.

Materials: Graphics with groups of healthy foods with the exception of one unhealthy food per group. The use of interactive technology.

Length: 15 minutes

Preparation: Teacher will need to create the picture graphics with the foods and be able to use technology effectively to make this lesson interactive.

Guide/Lesson- The teacher will display different groups of healthy food with the exception of one unhealthy food. The teacher will call on students to come up to the board and using interactive technology circle or cross out the unhealthy food that does not belong with the healthy foods. This can be done with fruits and vegetables as well.

Data Collection- Data will be collected through teacher and paraprofessional observation.

Next Step- The teacher or paraprofessional will need to create hard copy pages of the different groups of healthy foods with the exception of one unhealthy food. Students will need to cross out the unhealthy food and then will draw in their favorite healthy food to replace it.

### **Sentence Building**

Objective- Students will identify the correct words/ phrases to complete each sentence about healthy and unhealthy food options. Students will then be able to trace the sentence on their own sentence strips.

Materials- Cut outs of appropriate words/phrases. Sentence strips with sentences to be completed. Pencils.

Length- 15 minutes

Preparation- The teacher or paraprofessional will need to create different sentences that challenge the students' understanding of healthy and unhealthy food options. The sentences will need to have missing words or phrases that the student will need to choose from a field of three to complete. The teacher or paraprofessional will need to write the complete sentence with the correct word or phrase on a separate sentence strip and have enough prepared for each student. The student will then trace the complete sentence with the assistance of the teacher or paraprofessional.

Guide/Lesson- The teacher or paraprofessional will work in small groups or one-on-one with the students to build sentences about healthy and unhealthy foods. The teacher will present the incomplete sentence to the student and read it aloud. The teacher or paraprofessional will then have three options of words or phrases that could be used to fill in the sentence. For example, the sentence may read "Bananas are a \_\_\_\_\_ option for you to choose for lunch." The field of three words may be healthy, unhealthy, and grain. The student will correctly identify the word healthy and then read, sign, or point to the words together with the teacher or paraprofessional, that is, the sentence in its entirety. The teacher will then present the student with a sentence strip with the sentence already written out. The student with the assistance of the

teacher or paraprofessional will trace the sentence. For students that re not strong readers and for those who may benefit from picture supports, visuals can be included in order to aid student comprehension.

Data Collection- Data will be collected through teacher and paraprofessional observation, as well as, through the collection of completed sentences.

### **Create Your Own Meal**

Objective- Students will create their own drawings of what a healthy meal would look like for them at lunch.

Materials- Paper, and crayons/markers.

Length- 15 minutes

Preparation- Teacher or paraprofessional will need to write each student's name on the back of their papers and place them at their individual seats. Teacher or paraprofessional will need to have the crayons/markers ready and have discussed with the students what their healthy food options are. This lesson would follow many of the other lessons and act to reinforce their understanding of healthy vs. unhealthy foods.

Guide/Lesson- Students will need to trace their names on the back of their sheets. They will then turn over the blank paper and will have to draw/create their own healthy meals. Teacher or paraprofessional will provide guidance on ideas about what healthy foods are and prompt the students with questions about what they would normally see in the cafeteria. Together the teacher, paraprofessional and the students would agree on what healthy foods are. The students would then have the freedom to draw their own healthy meal. For students that may find drawing to be challenging, this lesson can also be accomplished by gluing on pictures to create a healthy meal.

Data Collection- Data will be collected through observation and through the collection of their drawings.

When implementing each of these lessons it is important to first determine if they are appropriate for your students and, if not, to make the necessary modifications to accommodate their respective needs. Strategies for implementing these lessons include:

- ❖ Consider what is appropriate for students' age, development, and needs
- ❖ Build off of students' prior knowledge and understanding of health and nutrition
- ❖ Make the content relevant to their eating habits and what foods students commonly encounter
- ❖ Modify each lesson to better suit students' needs and classroom/ teaching environment (i.e., one-on-one, small group, or whole group setting).

With many of the lessons, students' understanding and acquisition of the information can be monitored through observation and simple data collection with the use of the data sheets provided. However, there are other ways in which to assess student's understanding and development. These include:

- ❖ Task analysis
- ❖ Visual supports
- ❖ Rubrics
- ❖ Prompt hierarchy schedule

### **Activities**

It is essential when promoting health and nutrition among students with significant disabilities, that physical activity is also incorporated. There are many physical activities that could be implemented in the school setting that would benefit students with significant intellectual and developmental disabilities. Consult with the general education physical education teacher, Adaptive Physical Education (APE) instructor and the Physical Therapist (PT) for further idea development and implementation. The gross motor skills of many students can be developed through the use of these physical activities.

Basketball- Works on students ability to dribble a ball with one or two hands. Basketball builds skills with shooting a ball and develops hand-eye coordination. In addition, it works on students' ability to take turns and share the ball.

Hopscotch- Develops students' ability to jump on one foot and keep balance.

Riding Bikes- Many students enjoy riding bikes and it helps to build their coordination skills.

Running- An excellent way to exert energy and to get in shape. In addition, simple running activities can be accomplished in a short amount of time. It is also fun to have relay races for students to run and understand how to better take turns.

Walking- Take a walk around the school track or playground each day before dismissal. This will help students relax and exert some energy before having to sit for an extended period of time.

Baseball- Baseball teaches students how to take turns. It also helps student develop hand-eye coordination skills, throwing skills, running, etc.

Tetherball- Builds social skills and develops better understanding of turn taking

Motor lab/Sensory room- Many school sites have a sensory room or motor lab for students with significant disabilities to visit throughout the day in order to collect their thoughts, to calm down, or to exert some energy in a safe and controlled environment. Be sure to find out if your school site has a room like this and get your class on the schedule.

Bouncing balls- Simply having students bounce a ball back and forth to one another develops many skills and provides students with some physical activity.

Swings- Students love swings and if your school site has them be sure to provide students with opportunities to play on the swings.

Soccer- Students learn to play with peers while developing good sportsmanship skills.

Bowling- Setting up plastic pins and using a school rubber ball is an easy and effective way to get your students active outside or inside.

Push-ups and sit-ups- A simple and effective way to get students moving, while building strength. In addition, it can be done anywhere, no extra equipment necessary.

Stretching- A good way to get the body moving and blood flowing. Also, stretching is a good way for students to relax and calm down after a fun activity. Incorporate giving directions to help develop student's ability to follow simple one-step directions. For example, "reach out your arms" or "touch your toes." Another way to accomplish this is through a fun game of Simon Says; students are getting their bodies moving and may not even realize their doing some form of exercise.

Yoga- Yoga is a more advanced form of stretching for your students that really allows them to relax and gather their breath.

Water games- Many students with developmental or intellectual disabilities enjoy playing in the water. Incorporate simple water tables or other water sports into your daily routine to implement some fun physical activity.

Dance- Many students with developmental and intellectual disabilities love music. Put on some music and have your students free dance to get their bodies moving. Play some instructional music and have the students move kinesthetically to reinforce their understanding of the musical lyrics.

Hula hoops- Hula-hoops are fun and new for many students, which can be a challenge for many. Allow students to experiment with hula hooping. Have them move the hoop around their arms, legs, neck, etc.

Parachute- Many schools Physical Education (P.E.) teachers has access to a large parachute, which is used with general education classes. Have your students join in with another class and play with the parachute. Students will lift the parachute; go under the parachute, etc. It is a great way to get your students involved, moving, and having fun.

Volleyball- Allows students to develop turn taking skills while being active.

There are several ways to have your students be physically active outside. There are also many ways to promote health and nutrition inside. Here are some fun activities to further promote health and nutrition within your classroom.

Create posters- Have students work independently or in groups to create posters that promote and encourage others to get healthy. Students can draw pictures or cut out pictures from magazines.

Taste testing- Make trying new foods fun by having a day in which you do taste testing. Have students touch, smell, and taste new healthy foods. Be sure to make certain that your school allows these foods and that none of your students have allergies to these foods.

Planting vegetables- Plant your own vegetables. Have students plant seeds in their own individual cups. Watch as their plants grow. Together as a class you can chart their growth. Discuss with your students how the plant is growing and discuss how healthy foods help you to grow.

Eat lunch with the teacher days- Once a week or once a month; plan to have lunch with your students. While eating discuss what foods are healthy and why you are eating them. Lead by example and only eat healthy foods. Take this time to introduce new healthy food options.

Coloring sheets- There are many coloring sheets available online that reinforce the understanding of healthy foods. For example there are coloring pages of fruits and vegetables. Have these coloring pages available in the classroom whenever a student has completed their work and they wish to color.

Labeling parts of vegetables- Students can label parts of vegetables; roots, leaves, stalks, etc.

Match foods to the different food groups- Have students correctly match different foods to their corresponding food group. For example the student would draw a line from the toast they eat in the morning to the grain food group.

Cut out magazine pictures- Have kid-friendly magazines available for students to use and cut out pictures of their favorite healthy foods.

Make commitments- As a class, make an agreement to be healthy and make healthy choices. Celebrate achieving different healthy goals.

Word search puzzles- There are many word search puzzles online whose themes are about health and nutrition. Have these available for the students to work on in their free time.

Scramble puzzles- There are many “unscramble the word” puzzles online whose themes are about health and nutrition. Have these available for the students to work on in their free time.

Create food group bookmarks - Have students create their own bookmarks of their favorite healthy foods.

Match color with food- Have students match healthy foods with their corresponding colors to further develop their understanding of both healthy food options and colors.

Cross out the unhealthy foods and replace with your favorite foods- Develop a worksheet where students are to eliminate the unhealthy foods and draw in their own healthy food options.

## Recipes

### **Little Dippers (Good Enough To Eat, 2009).**

#### INGREDIENTS

½ cup fat-free plain yogurt

½ cup nonfat sour cream

½ teaspoon garlic salt

3 dashes Tabasco sauce

4 stalks celery

1 red pepper

1 yellow pepper

1 bag peeled baby carrots

1 pint cherry tomatoes

1. Combine the yogurt, sour cream, garlic salt, and Tabasco sauce in a bowl. Mix together with a spoon. Cover the dip and store in the refrigerator while you prepare the vegetables.
2. Wash the vegetables. Cut the celery into sticks. Cut peppers in half. Remove stems and seeds. Cut halves into long, thin strips. Leave the carrots and tomatoes whole.
3. Arrange the vegetables on a platter with a bowl of dip in the center. Dip in!

### **Yogi Pops (Good Enough To Eat, 2009).**

#### INGREDIENTS

2 cups fat-free vanilla yogurt

10 strawberries, wash and with stems removed

1 banana in 6 pieces

½ cup pineapple juice

1. Combine all ingredients in a blender and blend on high until smooth and pink.
2. Pour the mixture into twelve 3-ounce paper cups. Place a Popsicle stick in the middle of each cup.
3. Cut out twelve 3-inch-square pieces of foil.
4. Poke a hole in the center of each piece of foil. Cover each cup with the foil while guiding the Popsicle stick through the hole. Crimp the foil around the edge of the cup.
5. Place the cups in the freezer and freeze until solid. This will take around 6 hours.
6. Remove the foil and peel off the paper cup. Enjoy!

### **Ants on a Log**

#### INGREDIENTS

16 celery stalks

1 cup of peanut butter

1 cup of raisins

1. Clean celery stalks and cut in half.
2. Spread celery stalks with 1 tablespoon of peanut butter
3. Top celery stalks with the peanut butter with 1 tablespoon of raisins.

### **Yogurt and Fruit Parfait**

#### INGREDIENTS

2 cups of yogurt (any flavor your students prefer)

1 cup of fruit

1 cup of granola

1. Layer  $\frac{1}{4}$  cup of fruit t the bottom of the cup. Have students each have their own individual cups to work with. Have students be responsible for spooning out the ingredients. Together the teacher/paraprofessionals can work with the students on measuring and further developing math skills.
2. On top of the fruit, layer  $\frac{1}{2}$  cup of yogurt.
3. Top the yogurt and fruit mix with  $\frac{1}{4}$  cup of granola (granola is optional).

### **Blueberry Oatmeal Squares (Kids Health, 1995-2014).**

#### INGREDIENTS

1½ cups quick oats

½ cup whole-wheat flour

½ teaspoon baking soda

½ teaspoon salt

1 teaspoon cinnamon

½ cup fresh or frozen blueberries

1 egg

1 cup skim milk

3 tablespoons apple sauce

$\frac{1}{4}$  cup brown sugar

1. Preheat oven to 350° F.
2. Coat baking pan with cooking spray.
3. Place all of the ingredients into a large bowl and mix until just combined.
4. Pour into prepared pan and bake for 20 minutes or until a toothpick inserted into the center comes out clean.
5. Allow to cool for 5 minutes and cut into squares.

**Pizzadilla with Red Sauce (Kids Health, 1995-2014).**

**Prep Time:** 10-15 minutes

**What you need:**

- 4 whole-wheat tortillas (8inches)
- 2/3 cup fresh or frozen spinach, finely chopped
- 2/3 cup part-skim mozzarella cheese, shredded
- 1 cup marinara sauce (store-bought or homemade)
- Cooking spray

**Equipment and supplies:**

- A 10- to 12-inch skillet
- Thin spatula (metal preferred)

**What to do:**

1. Lay 2 tortillas on a flat surface. Divide spinach and cheese between the tortillas.
2. Top with remaining 2tortillas.
3. Place skillet over medium heat. Lightly coat pan with cooking spray.

4. Gently slide 1 pizzadilla into the pan and cook until light golden brown on one side(about 1-2 minutes).
5. Using a thin spatula, gently flip over the pizzadilla and cook for30-60 seconds more or until cheese is fully melted.
6. Remove pizzadilla and cut into triangles. Repeat with remaining pizzadilla.
7. Serve with marinara sauce for dipping.
8. You can wrap and refrigerate leftovers to take to school for lunch.

### **Apple Pie (Super Healthy Kids, 2014).**

#### INGREDIENTS

Graham Crackers

Light cream cheese

2 apples

½ teaspoon Cinnamon

1 teaspoon of sugar ( Can mix regular sugar and brown sugar)

1. Chop apples into tiny pieces and plate in bowl
2. Combine the cinnamon with the sugar
3. Sprinkle the cinnamon/sugar mix over the apples.
4. Microwave the apples for 1 minute.
5. Take them out and stir. Place back in the microwave for an additional minute.
6. Scoop the chopped/cooked applies onto a graham cracker with cream cheese spread on top.
7. Optional: add caramel and chocolate.

**Apple Dips**

## INGREDIENTS

3 apples

Cinnamon

Vanilla yogurt

1. Slice apples into 1/8<sup>th</sup> pieces
2. Dust apples with cinnamon
3. Dip apples in yogurt

**Herbed Popcorn Mix**

## INGREDIENTS

8 cups of popped corn

2 cups of pretzels

1 cup of mixed nuts (optional)

1/3 cup of butter, melted

1 teaspoon of dill weed

1 teaspoon of lemon pepper

1 teaspoon of Worcestershire sauce

½ teaspoon onion powder

¼ teaspoon garlic powder

All ingredients can be pre mixed or students can play a part in measuring, mixing, and gathering all ingredients.

1. In a large bowl, mix popcorn, pretzels, and nuts.
2. Melt butter in microwave
3. In a small bowl combine butter and dry ingredients.
4. Drizzle contents of small bowl over the popcorn, pretzels and nut mix.
5. Spread out on pan
6. Bake at 250 degrees for 25-30 minutes
7. Stir Twice throughout baking.

Baking may be done prior to school and final product can already be prepared for students to eat if there is no access to an oven.

### **Banana Balls**

#### INGREDIENTS

2 ripe bananas

1 cup of quick oats

1.2 cup of chocolate chips

1 spoonful of natural peanut butter

1. Mix ingredients together well.
2. Place a spoonful of mix on a backing sheet and bake at 350 degrees for 15 minutes.
3. Let cool for 15 minutes

Baking may be done prior to school and final product can already be prepared for students to eat if there is no access to an oven.

### Teacher Tip Sheet

Here are some basic ideas to keep in mind that will assist in introducing nutrition and health promotion into your classroom.

- ❖ Share lunchtime with your students once a week/once a month and lead by example by filling your plate with healthy options and eating the nutrient rich foods first. Demonstrate what healthy foods are and discuss with them while you eat together.
- ❖ Present students with multiple options for food choices. Listen to what they like and dislike. Take data on what new foods the students enjoy.
- ❖ Discuss and demonstrate proper portion sizes and allow students to be active participants in choosing which foods they eat and how much.
- ❖ Prepare and follow a schedule that details when snack and lunchtime will occur. Be consistent.
- ❖ Build upon their prior knowledge and understanding of foods. Do not introduce only new healthy foods without first looking at the healthy foods they already eat for breakfast and lunch.
- ❖ Make food and eating fun. Guide them to exploring new foods.

### **Collaboration with Related Services**

- ❖ The responsibilities of teachers, school nurses, paraprofessionals and other school employees has broadened. We all share in decision-making and teaching roles.
- ❖ The Occupational Therapist (OT) has expertise in the activities of daily living; fine motor movements, assessments and input when students exhibit increased sensitivity to tactile or oral stimuli. The OT may be helpful in working on goals of self-feeding (i.e., manipulating utensils and drinking from a cup), as well as, may provide input on why a student may be refusing his/her food.
- ❖ The Physical Therapist (PT) may be helpful in incorporating creative physical activities into the daily routine.
- ❖ The Adaptive Physical Education instructor will find and incorporate effective physical activities adapted to the specific needs of the students.
- ❖ The Speech and Language Pathologist has expertise in oral musculature for eating activities.
- ❖ School nurses assess nutrition, bowel and bladder characteristics, health concerns, and consult with student's physician.
- ❖ Teachers and Paraprofessionals provide assistance in daily self-care procedures within the classroom.

### **Students**

Students must develop these skills of healthy living with a sense of control and accomplishment. Students desire control in choosing their own food. While in school students must be taught skills to live independently in a community and to work, this includes healthy living. Provide students with choices and incorporate them into the decision making of what they

eat and when they eat as a class. Share the schedule with them so that they understand that together the schedule was created and it is the best choice for snack time.

### **Family**

Members of a student's family provide a personal perspective for the specific likes and dislikes of their child. Family involvement is necessary to encourage routine and consistency at home. In addition, they will provide important information regarding cultural preferences (heritage, religious practices and beliefs), methods that have worked or failed, and difficulties experienced in the past.

### **Peers**

Peers in school can prove to be a useful teaching tool in demonstrating appropriate eating habits and promote healthy choices.

### Other Resources

**Healthychildren.org-** a plethora of information regarding healthy living from the American Academy of Pediatrics that delves into issues of healthy living, safety and prevention, family life, ages and stages, etc. This site is powered by pediatricians and is a trusted site on a variety of different health related issues regarding children.

**Chop Chop magazine-** a fun cooking magazine for families.

**Superhealthykids.com-** makes eating fruits and vegetables simple, easy, fun, and delicious. The site is complete with recipes, blogs, meal plans, and other helpful tips and articles to make being healthy more attainable.

**PEI Healthy Eating Alliance-** a comprehensive look at healthy eating. The site has several learning activity sheets, information on nutrition and specifically school nutrition, activities for health promotion in schools, and other helpful links and resources.

**Nourish Interactive-** a great tool that can be utilized by teachers, parents, and other professionals to make being active and eating healthy fun. On this website there are many fun activities for students to participate in that further enhances their understanding of health and nutrition.

**Boardmaker-** allows teachers to create visual schedules and other visual representations in order to effectively communicate with students.

**Worksheet works-** allows teachers to create various educational materials tailored to their specific lessons.

**USDA ChooseMyPlate.gov-** developed by the United States Department of Agriculture, this site offers information of weight management, physical activity, and other issues related to health

and nutrition. In addition, it is complete with printable materials and other helpful tips that can be taken and implemented in a classroom.

**KidsHealth.org**- this site offers trusted information about children regarding healthy, behavior, and development tailored to meet the specific needs of parents, educators, kids, and teens.

## Chapter Five

### Project Recommendations

This project was developed in order to bring health and nutrition education to the forefront of discussion in an educational setting, as well as, provide education specialists of students with intellectual and development disabilities information that would promote overall student well being.

This project was designed to address the following questions:

- 4) What are the available resources for special education teachers of students with significant disabilities with regard to nutrition education?
- 5) In what ways could a moderate/severe education specialist instruct students on how to better meet their health and nutritional needs?
- 6) What strategies can be implemented within the classroom in order to meet the individual health and nutritional needs of students with significant disabilities

I began this project by first determining a need for students with significant intellectual and developmental disabilities. Through diligent research I discovered a need for further health and nutrition promotion resource development for this subset of the population. I reviewed the relevant available resources and then created new content that I felt would be most beneficial for education specialists of students with significant disabilities to utilize in their own classroom instruction. I developed an easy-to-use handbook complete with a plethora of effective resources for meeting the individual health and nutritional needs of students with significant disabilities.

In this chapter I will discuss the lessons I have learned throughout this process, the

educational implications of my project, project implementation plans, the limitations of my project, and suggestions regarding further research and project development.

### **Lessons Learned**

When thinking about what I learned through the creation of this project, I realized that I gained knowledge about a wide range of new vital information regarding nutrition in general. I acquired a better understanding of what proper health and nutrition really entails with regard to different populations, ages, genders, and abilities. I was able to apply this gained knowledge in my own quest for living a healthier life.

I discovered how extensive the need for resource development was in regard to health and nutrition education in the classroom. I found that while it was undoubtedly acknowledged as a need for children, little research was done on nutrition education in an educational setting. While I did thorough research, I also began to understand that there is still more that needs to be done and more resources that must be developed. However, at the same time I also became more cognizant of how many schools, including my own had become more aware of this need and were developing nutrition education programs. This new information helped to refine my understanding of what was still missing.

In addition, I learned that in order for nutrition education to be successful in schools, it should be fun for both students and educators. In addition, teachers must be flexible in how they implement health and nutrition interventions. I found that all of the information can be taught within an educational setting, embedded in all content areas, and can be easily modified to accommodate students' needs and abilities at every grade and age level.

Lastly, I learned how much students with significant intellectual and developmental disabilities can benefit from this type of education. Providing students with significant

disabilities information that enhances their understanding of their own health and well-being truly enables them to live more successful and independent lives.

### **Educational Implications**

It is recommended that basic nutrition information is fully understood by all professionals working within the classroom. When implementing the various lessons and activities detailed in this handbook, be sure to fully understand your students' needs and abilities. Provide students with flexibility in how they complete each task. Make the lessons fun and exciting. In addition, utilize the other related service professionals because they are bringing their own knowledge to the equation. Collaborate with other professionals in order to find the most appropriate and effective nutrition education program for your students. Communicate with parents and other family members as to what your goals are for this program and work together to be consistent both at home and at school.

### **Project Implementation Plans**

This project is tailored to meet the needs of students with significant intellectual and developmental disabilities and will be used by education specialists of these students in the classroom. This project is an easy-to-use handbook: a compilation of tips, resources, lessons, activities, and strategies that would be effective in enhancing student understanding of proper health and nutrition. I will first use this handbook with the students within my own classroom. I will chart student progress using the data sheets provided in the handbook. I will assess the effectiveness of this program. I will then share with the special education team at my school and within my school district how I have effectively used the lessons, activities, and other resources within the handbook in supporting my students' education of their individual health and nutritional needs. I will ask for feedback from my peers and along with my own analysis adapt

the program accordingly. I will continually update my handbook and collect more information as research is conducted and resources are developed.

### **Limitations of Project**

This project was tailored to meet the needs of students with significant intellectual and developmental disabilities. It can, however, be modified to meet the needs of other students, such as general education students. It also can be implemented in the home by parents and other family members. Lessons will need to be repeated in order for students to fully understand the material. In addition, many of the lessons and activities will require adaptations and modifications in order to meet the different needs and abilities of students within the classroom. When incorporating food into the classroom it is important to understand all student allergies and clear food choices with the administration in order to be in compliance with all school policies.

Each year, there is a National Public Health Week, which could be an opportunity in the future to highlight the need for the application of nutrition education for students with significant intellectual and developmental disabilities.

### **Future Research or Project Suggestions**

Further research should focus on the effectiveness of interventions similar to the one discussed in this project and improving upon existing strategies. In order for this to be accomplished, teachers must continually assess current interventions and their effectiveness with regard to their students' understanding of health related issues.

Teachers and other professionals can use the information within this handbook to develop additional lessons and strategies that continue to emphasize the importance of health and nutrition.

### **Summary of Chapter**

This project was intended to meet the health and nutrition needs of students with significant intellectual and developmental disabilities. The handbook is a compilation of basic nutrition information, lesson plans, activities, recipes, strategies, and other useful tips that will assist education specialists in promoting these ideas for their students. The process in which this handbook was developed included researching available resources, determining an insufficiency in resources for this subset of the population, and consequently additional content to close the gap. The project will provide education specialists of students with significant disabilities the resources necessary to implement fruitful nutrition education strategies, determine the program's effectiveness, and develop additional resources.

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