A Brief Review of *Body Quest: Food of the Warrior*, a Childhood Obesity Prevention Initiative, and Impact on Fruit and Vegetable Preference

by

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Abstract

Objective: *Body Quest: Food of the Warrior* (BQ) was developed as a childhood obesity prevention initiative. This thesis provides a brief program review of BQ and measures the effect of BQ on fruit and vegetable (F/V) preferences of participants.

Methods: Program acceptability was measured by feedback from participating students, school administrators, and state SNAP-Ed educators. Changes in F/V preference were measured in students participants (n=1,829) from pre- to post-assessments across 17-class periods.

Results: BQ incorporated novel technology with creative nutrition education and was widely accepted as an educational resource. For pre- to post- assessment changes in F/V preference of students, participants in BQ intervention had significant increases for vegetables ($t=-13.82$, $p<.001$, pre=1.20, post=1.56). There was a ceiling effect for fruit preference ($t=1.153$, $p=.249$, pre=2.58, post=2.55).

Conclusions: BQ allows students to learn nutrition via a new pedagogy, and exposes them to tasting F/V, which can increase preference for F/V.

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“For God is working in you, giving you the desire and the power to do what pleases him.” -Philippians 2:13 (NLT)

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List of Commonly Used Abbreviations

ACES	Alabama Cooperative Extension System
BQ	Body Quest: Food of the Warrior
F/V	Fruits and Vegetables
NEP	Nutrition Education Program
SNAP-Ed	Supplemental Nutrition Assistance Program-Education

Chapter 1

Introduction

One trend in the current generation of children is an increased prevalence of obesity; childhood obesity has tripled in the last few decades, making one in every three children obese.[1] This presents a health crisis and warrants the investment of time and resources to prevent the further development of childhood obesity.

The rate of childhood obesity can be decreased by educational intervention programs, and many programs nationwide have been recently implemented. Since 1999, *Kids Gardening*,[2] a branch of the National Gardening Association, has promoted increased fruit and vegetable intakes and increased physical activity in children through national programs. In 2007, *Farm to School*,[3] co-founded by Executive Director Anupama Joshi, was implemented to promote the incorporation of local healthy foods in school systems to promote nutrition. Most recently, First Lady Michelle Obama initiated the *Let's Move!*[1] campaign in 2010, encouraging children to eat healthy and pursue a lifestyle incorporating physical activity.

While intervention programs vary in the methods to target child audiences, one central message is clear: eating more fruits and vegetables (F/V) can help maintain healthy body weight.[4-9] By increasing F/V consumption, children obtain important nutrients needed for an overall healthy lifestyle.[8,10,11] They are also less likely to eat

sugary foods or foods with poor nutrient density when F/V make up a healthy proportion of their diets.[5,10-12]

As children today need to increase their consumption of F/V,[5,10,12] interventions need to target a core predictor of consumption for foods: preference.[4,8,13-15] Children need to have an increased preference for F/V in order for positive dietary changes to occur. As preference is a means to determine if students will consume a food, an increase in preference for F/V is a good indicator of possible changes in consumption.[13,14]

In Alabama, no statewide childhood obesity prevention initiatives currently exist beyond any national programs that were implemented locally. In 2010, Alabama Cooperative Extension System (ACES) personnel met the challenge of developing an intervention program targeting K-5th grade students through the creation of *Body Quest: Food of the Warrior* (BQ), a community-based childhood obesity program research initiative.

Through this study, we sought to address two goals related to BQ and childhood obesity prevention. The first goal was to provide a brief description of the BQ intervention program. BQ was professionally developed based on the Experiential Learning Theory,[16] which encourages students to experience, reflect, think, and act on their understanding. It incorporates a colorful and an engaging curriculum and allows increased opportunities for participating children to taste fruits and vegetables. BQ employs cutting edge technology driven by iPad apps and implements state-wide data collection using clickers. The program will be briefly reviewed in Chapter 3 of this document. The second goal was to document the changes in F/V preference occurring

in third grade students in rural Alabama as a result of BQ intervention. Changes in preference will be discussed in Chapter 4 of this document.

Chapter 2

Literature Review

Childhood Obesity

Childhood obesity occurs as a combination of factors such as excessive caloric intake and inadequate energy expenditure. It is defined as being at or above the 95th percentile of BMI-for-age charts.[18] In the last three decades, the rate of childhood obesity has tripled.[1] The rate of childhood obesity for ages 6-11 was 6.5% in 1980.[12,18] That rate increased to 19.6% by 2008.[12,18] In 2007, eight states had a prevalence of childhood obesity of 35.1% and higher. Those states included Mississippi (44.4%), Arkansas (37.5%), Georgia (37.3%), Kentucky (37.1%), Alabama (36.1%), Louisiana (35.9%), Tennessee (35.6%), and West Virginia (35.5%), with also the DC area (35.4%).[19]

For families of low socioeconomic status, the obesity epidemic is disproportionately problematic.[12] Often, low-income families lack the education and resources to choose healthy food and healthy activities to promote wellness. This puts children of low-income families at higher risk for obesity and the health-related consequences.[10,12,20]

For children categorized as obese, there is an increased risk for the development of hypertension and high cholesterol levels, cardiovascular disease, insulin resistance, breathing problems, joint discomfort, liver disease, gallstones, and heartburn.[11] The development of social and psychological problems also is associated with childhood

obesity.[11,12] Children who are obese face bullying, depression, and are not as well-liked by children of healthy weight.[12] If the obesity trends continue, the current generation of children could “live sicker and die younger” than the generations preceding them.[12] In order to improve the future health of the United States, investments toward the prevention and reduction of childhood obesity must be made.

Behaviors and Practices Leading to Obesity

Many factors contribute to the prevalence of childhood obesity. Sugary snacks and drinks are widely available in communities with high food insecurity.[10] This is due in part to the limited availability of healthy affordable foods. Schools nationwide also have vending machines containing snacks and drinks with poor nutritional density, i.e., foods that are low in nutrients while high in fat, sugar, salt, and overall calories.[10]

Entertaining advertisements of non-nutrient dense snacks greatly influences children’s desire to consume these products.[10] These advertisements contribute to the obesity epidemic by promoting consumption of sugary snacks. It is estimated that children today spend 7.5 hours a day being entertained by media such as computers, TVs, video games, cell phones, and movies.[10] All of the screen time adds up to constant bombardment of the minds of children with messages promoting unhealthy products.[21,22]

Decreased physical activity also contributes to the obesity epidemic. As early as elementary school, recess periods are being replaced with study periods.[12] There is also a lack of opportunity to participate in regular physical activity in childcare centers and schools across the United States.[10] In addition, many communities lack the

resources to build or maintain safe areas for children to play, resulting in less active lifestyles.[10]

Portion sizes of foods offered in restaurants and vending machines have increased over time, which also contributes to childhood obesity. This lends to a higher possibility for increased calorie intake, especially in children who learn portion sizes based on what is portrayed on fast-food plates.[10] For families that eat fast-food or food from restaurants for most meals, this is especially problematic. Moreover, the effect of a lack of portion control is enhanced by a decreased rate of breastfeeding mothers. Only 13% of women breastfeed exclusively to the recommended six months of age;[23] breast-fed children learn better portion control and have overall increased satiety[23] than children who are not exclusively breast-fed.

The decreased consumption of F/V has been cited as a contributing factor for obesity[4] and is a current dietary trend in children. Children who eat less F/V are more at risk for obesity[4,5,6,7] and also do not obtain recommended daily nutrients that are keys to maintaining overall health.[8,10,11] It is estimated that children currently consume an average of 3.5 servings of F/V daily. This is below the recommended five servings of F/V daily for children, or 2.5 cups.[24,25] Furthermore, this number does not come close to the new MyPlate daily recommendations of 2.5 cups vegetables and 1.5 cups fruit.[26] Of the F/V that children are consuming, most sources come from fruit drinks and fried potato products.[27]

Predictors of Fruit and Vegetable Preference

States where individuals eat more F/V have lower body weight than states that do not.[4,12,19] Preference for F/V is one of the first steps to consumption of F/V. To further develop the potential for a lifestyle of healthy habits, there needs to be a focus in understanding children's preference for F/V. Determining ways to increase a child's preference for F/V can help lead to an increase F/V consumption, and thereby decrease obesity risk factors.[4-9]

Demographic differences between groups of people currently exist that complicate the understanding of why children may prefer certain vegetables. Females have higher preference for vegetables than males.[9] Children of higher socioeconomic status, who likely have accessibility to and preference for F/V already, prefer F/V more than children of lower socioeconomic status.[28] Race also may influence preference decisions, as white children are reported to have higher preference for vegetables than black children.[9]

Aside from demographic predictors, the most prominent influence of F/V consumption is what is offered in the home to eat.[29-31] The home environment will influence preferences of children at young age. A child that witnesses an adult eating and enjoying a F/V may have an increased preference for that F/V.[29,30,32] This "modeling" can have a positive impact in both a child's willingness to try a F/V and willingness to continue to eat it, thereby developing a preference for it.[32] On the other hand, preference can be decreased (negatively impacted) if children associate foods with reward, especially with dessert rewards. Bribing a child to eat a F/V based on a reward makes the child think that what they are eating is "bad".[32]

Increasing the dosage of F/V, the amount of times that a child is exposed to and consumes a particular food, can increase the preference for it.[32,33] In order to increase preference, current research suggests that a F/V needs to be tried 8-10 times.[33] Literature also states that children may develop a healthy behavior change through education. For behavior change in F/V consumption, it has been reported that a minimum of three nutrition education lessons are needed to increase F/V consumption.[34,35] Although education may give modest improvements in behavior change, the greatest determinant of F/V consumption is preference for a F/V.[8,13,14,15]

Intervention Programs to Increase F/V Preference

Recognizing that preference can have a long-term impact on F/V consumption, intervention programs should target F/V preference increases in youth combined with nutrition knowledge and F/V consumption increases. Successful intervention programs encourage, educate, and expose children to healthy habits.[13,14,36] School settings have a unique ability to shape health behavior of children by providing an opportunity for modeling F/V consumption and for increasing dosage of F/V in children's diets.[13] Furthermore, establishing healthy eating habits early in development can increase a child's preference for F/V, and therefore build a foundation for healthy eating habits.

Youth can have an increase in F/V preference by having a healthy behavior modeled, such as tasting a F/V.[13,37] Wardle *et al.*[37] designed a study to determine means to modifying F/V preferences by targeting a single vegetable. In the study, 49 participants, ages 5-7, were randomly assigned to one of three groups: exposure (n=15), control (n=18), and rewards (n=16). The goal of the study was to get a

preference change for sweet red pepper. The vegetable was relatively new to the subjects, as 67% had tried it before. The vegetable was also previously disliked, making it a prime target for increase. Pre- and post assessments were ten days apart. At pre-assessment, students witnessed an adult eating a piece of the vegetable. Then, children were prompted to eat as much of the vegetable as they wanted, and rate their preference for it on a Likert[38] scale with cartoon faces.

Between pre- and post-sessions, participants in exposure and reward groups had eight tasting sessions to increase dosage. In addition, students in reward group were told at each session that they could have a sticker if they ate at least one piece of the vegetable. After the post-tasting assessment, exposure and reward groups both had an increase in preference. The exposure group changed significantly more than the control group, and the reward group had intermediate increases in preference.

Increases in F/V preferences also can occur when students are exposed to nutrition education and healthy habits.[13,14,36] Wall *et al.*[14] examined the effect of nutrition education on vegetable preference, knowledge, and self-efficacy as related to vegetables. A survey on food preference, attitude, and self-efficacy was used for pre- and post-assessments. Intervention was designed to take place within a two-month period, or three to five weeks. Four lessons were taught to students participating in the intervention in between pre- and post assessments. Lessons consisted of vegetable identification, vegetable intake recommendations, vegetable variety, and vegetable nutrients. Education also included examples of incorporating vegetables into everyday activities such as using them as snacks. In addition, students had the opportunity during each lesson to taste a food item with an incorporated vegetable. At the end of

intervention, students participating in lessons (n=291) had significant increases in vegetable preferences compared to those in control groups (n=269).

Intervention programs which encourage students to taste F/V and engage student participation in preparing F/V can be successful in increasing F/V preference.[38] Parmer *et al.*[39] studied the effect that a school gardening program could have on the knowledge, preference, and consumption of second grade students. The research design consisted of six classes; two classes received nutrition education and gardening experience (NE+G), two received education only (NE) and two classes were control. Pre- and post-assessments of the students measured F/V preference of the students. In between the assessments, students tasted F/V (five vegetables and one fruit) and scored their preference for them on a five-point Likert[38] scale. Vegetables tasted were grown in the school garden. After the intervention, there were significant preference increases in F/V for both treatment groups compared to the control group.

Justification

There has been a call placed on citizens and educators in the United States to pursue a healthier future for the next generation of youth through nationwide campaigns.[1-3] One logical venue for providing nutrition education is through schools. While schools may desire to place an emphasis on this need, there are limited resources available for educational programs. A national organization such as Cooperative Extension Service, part of the United States Department of Agriculture (USDA), can provide education in these areas to meet the nutrition education needs of elementary-age children.

Increasing F/V preference can increase F/V consumption and have a positive effect on decreasing obesity rates.[4,8,32] Therefore, incorporating interventions with the goal of increasing F/V preference is a necessity to childhood obesity prevention programs. Thus far, successful intervention programs are known by their multicomponent nature; that is, programs that include community (family) involvement, individual activity, and classroom instructions.[13,14,40]

Body Quest: Food of the Warrior (BQ) was developed as a means to meet current nutrition education needs in this generation of children. There are four primary objectives of BQ: (1) increase F/V consumption, (2) increase physical activity, (3) enhance nutrition-related sleep hygiene, and (4) promote family involvement.

Goals of this research were two-fold:

1. To become part of a team that would develop a successful multicomponent childhood obesity prevention program that can be implemented in Alabama and eventually multiple states, and
2. To evaluate the influence of F/V consumption by measuring changes in F/V preference in 3rd grade students participating in the BQ childhood obesity prevention initiative.

Funding for this program was provided by the Alabama Cooperative Extension System and the USDA's Supplemental Nutrition Assistance Program - SNAP.

Chapter 3

Combatting Childhood Obesity Through a Multicomponent Intervention Study, *Body Quest: Food of the Warrior*

Foreword: A Great Educational Material (GEM) is a brief program description of innovative approaches to nutrition education and behavior changes.[41] It is submitted to The Journal of Nutrition Education and Behavior (JNEB) for publication in fulfillment of a GEM requirement. The GEM does not require an abstract, but requires a 50-word summary of the program tool and results for the purpose of review.

Summary

Body Quest: Food of the Warrior (BQ) is a childhood obesity prevention program featuring colorful animé-style characters and seven interactive iPad apps. The goal of BQ was to encourage third grade students in Alabama to increase fruit and vegetable (F/V) consumption through Extension educator-led and iPad app nutrition intervention. At the end of the 17-class study, F/V consumption was significantly higher in treatment students compared to control students (Mastropietro LM, unpublished data, 2012).

GEM Content

Introduction

Two unique trends mark the current generation of children: an increasing prevalence of obesity and use of technology.[10,18,42] Children in America are battling obesity more than any previous generation, yet childhood obesity is largely preventable. Fruit and vegetable (F/V) consumption is a valuable component of healthy weight management, as children who eat F/V are most likely to have a decreased risk of obesity.[4-7]

In addition, today's youth are technology-driven; even toddlers can successfully navigate mobile devices. Current technology, such as iPad apps, influence the way learning occurs by engaging students and providing immediate feedback.[43] To keep up with the next generation and meet their educational needs, obesity intervention programs need to be engaging and effective, and useful in real classroom settings. Ideal programs will captivate elementary students through a technologically-advanced medium, providing opportunities for the practice of real life skills and guided learning.[16,17] The need for this creative type of nutrition intervention coupled with the promotion of increased F/V consumption was the driving force behind the creation of *Body Quest: Food of the Warrior* (BQ), a childhood obesity prevention initiative.

Program Description

The novelty of BQ lies in the combination of implementing a creative elementary-age curriculum with advanced application technology that promotes F/V consumption to

prevent childhood obesity. The BQ Leader's Guide, based on The Experiential Learning Model,[16,17] directs Supplemental Nutrition Assistance Program-Education (SNAP-Ed) Extension educators with BQ implementation. The Guide includes an overview of nutrition topics, lesson reinforcements, weekly fruit and vegetable tastings, physical activity instruction, information on nutrition-related sleep hygiene, and take-home messages. The animé-style BQ characters, Body Doc, Muscle Max, Graino Supa, Shining Rainbow, Fiberlicious, and Super Slurper, help students on their "Quest" for a healthy lifestyle. These BQ Warriors encourage students to become healthy warriors themselves with positive messages throughout the teaching materials. Activities with a card deck, the main traditional teaching manipulative used by each student, contain nutrition facts and guide learning about healthy eating habits. Vow cards remind students of their pledge to eat F/V. Family involvement is encouraged through take home materials such as calendars with tips on healthy eating, sleeping, and physical activity. Weekly F/V tastings are a crucial aspect of the curriculum; thus, increasing students' exposure to commonly eaten F/V.

Following an educator-led lesson in the classroom, educators bring a mobile iPad laboratory into classrooms, so that each student has the opportunity to use an iPad app for lesson reinforcement. The seven apps use a game-approach to integrate standard classroom curricula with nutrition education. iPad apps give students the opportunity to participate in an interactive curriculum, which provides immediate feedback responses to students throughout their learning experience. The first app introduces each BQ Warrior, and starts students on a Quest for healthy living. Sequential apps (1) encourage students to overcome fears by trying new F/V, (2) introduce food Battle

Groups, (3) teach principles of balanced meals, (4) introduce nutrients in F/V, (5) teach students about snacks, and (6) inspire students to incorporate balance into healthy eating and drinking.

Evaluation and Impact

Evaluation is an important aspect of BQ. Data from various evaluation tools are collected by pre, post, weekly and daily assessments during the 17-class intervention. Pre- and post-assessments are identical and assess changes in nutrition knowledge, F/V preference, and F/V consumption changes. Weekly evaluations assess F/V preference and F/V consumption. Daily self-reported assessments by students at lunch document personal F/V consumption through the Child Nutrition Program.

One goal of BQ, to increase F/V consumption of third grade students, was met during the 2011-2012 school year. An article in preparation reports a significant increase in F/V consumption between treatment and control groups (Mastropietro LM, unpublished data, 2012). In addition to significant increases in F/V consumption, students were excited to participate in lesson reinforcements via iPad apps. As BQ was initiated in SNAP-Ed eligible schools, school administrators were impressed that students in low-income areas were exposed to such a valuable and scarce resource. Through a process evaluation, SNAP-Ed educators reported that students were “very engaged” in using iPads, and perceived that students effectively learned nutrition content through this pedagogy.

Implications

For third graders in Alabama, BQ was a well-received 17-class childhood obesity intervention program. For students, iPad apps were the “wow factor” that captivated attention. School administrators also responded positively to the incorporation of interactive technology in classroom education. In addition, one of the primary objectives of BQ, an increase in F/V consumption, has been met in this population. Instruction sessions led by SNAP-Ed educators, reinforcement lessons using apps, F/V tastings, and assessments can be modified to fit within time constraints, making it ideal for in-class and after-school education. Using SNAP-Ed educators to deliver the childhood obesity prevention program impacted school system resources and personnel in a synergistic and positive manner.

A commonly asked question is about the availability of BQ materials. All applications are freely available for iPads through Apple iTunes. Other materials are available online at http://www.aces.edu/pubs/docs/indexes/hefn.php#bodyquest

At present, BQ is beginning implementation as a multi-state project. The BQ research team is inviting states through SNAP-Ed or similar programs to participate in and evaluate BQ. Programs interested must be willing to follow a protocol, collect data, and send data to Auburn University. Data will be analyzed and returned. Contact the authors for more information.

Funding is provided by the Alabama Cooperative Extension System and the USDA’s Supplemental Nutrition Assistance Program-SNAP.

Chapter 4

Changes in Fruit and Vegetable Preference of Third Grade Students through *Body Quest: Food of the Warrior*, a 17-class Childhood Obesity Prevention Program

Foreword: *Body Quest: Food of the Warrior* curriculum was previously discussed in Chapter 3. Below are the results of measuring preference changes of fruits and vegetables in students undergoing the intervention.

Introduction

The current childhood obesity epidemic warrants aggressive intervention. Children today are eating more calories coupled with consuming less fruits and vegetables (F/V), and decreased physical activity.[10] In order to combat the rise in obesity prevalence, several research-based intervention studies are being implemented in school systems across the nation.[1] The intervention programs that have been most successful for increases in nutrition knowledge and F/V consumption are multicomponent programs, which emphasize classroom education, individualized learning, and family or community involvement.[40]

Although preference is a difficult dietary variable to influence, it is a determinant of future consumption.[4,8,13,14,32] Therefore, getting children to increase their preference for F/V may result in an increased consumption of F/V, and eventually, a decreased

prevalence of obesity.[4,8,32] As preference is a means to determine if a person will consume foods, such as F/V, having a preference increase in F/V is a good indicator of possible changes in consumption.[13,14]

Body Quest: Food of the Warrior (BQ) was developed as a statewide initiative to address childhood obesity prevention. Having a preference for F/V, which ultimately may lead to eating more F/V, is desirable for youth to adopt to prevent obesity. This study examines the impact of intervention on F/V preferences in third grade students participating in BQ.

Methods

BQ was implemented as a childhood obesity prevention program in Alabama school systems where at least 50% or more of students received free or reduced school lunch. The 17-class BQ curriculum was developed based on the Experiential Learning Theory,[16,17] and is discussed in Chapter 3 of this document. Implementation of the curriculum occurred through 24 Supplemental Nutrition Assistance Program-Education (SNAP-Ed) educators, employees with the Alabama Cooperative Extension System (ACES). Each SNAP-Ed educator chose four third-grade classes from schools in a rural, two-county area of responsibility. Auburn University's Institutional Review Board approved the research, and informed consent for participation was collected from parents of all participating students (Appendix A).

The BQ protocol consisted of 17 classes to implement the program. The first two classes were pre-assessment classes (Pre1 and Pre2). Classes 3-15 were intervention classes consisting of SNAP-Ed educator-lead classroom education and iPad app lesson

reinforcements. The last two classes were post-assessment classes (Post1 and Post2). F/V tastings were available during all 17 classes.

Classroom education for classes 3-15 was led by SNAP-Ed educators. On alternating weeks, education reinforcement occurred through iPad app technology. Regardless of the pedagogical method, education consisted of information on nutrition, physical activity, and nutrition-based sleep hygiene. Throughout the education, students participated in “Do, Reflect, Apply” activities for personal learning, and were also given nutrition take-home messages.

A team of ACES personnel developed seven iPad apps featuring animé-style characters that guided students’ learning. iPad apps were designed to be interactive learning modules with immediate feedback responses to enhance student learning. The apps used a game-approach, integrating both standard classroom curricula, such as spelling and literacy, as well as components of nutrition education to meet national standards. The first app introduced each BQ Warrior and encouraged students on their Quest for healthy living. Sequential apps (1) encouraged students to overcome fears by trying new F/V, (2) introduced powerful food Battle Groups, (3) taught principles of making balanced meals, (4) educated on nutrients in F/V, (5) taught students about fun, healthy snacks, and (6) inspired students to incorporate balance into all aspects of their lifestyle including what they drink.

In addition to the classroom education and iPad lesson reinforcements, F/V were given weekly to students to taste. F/V were tasted on a rotating schedule at each class period (classes 1-17), which allowed students to have increased dosage exposure to the foods.[15] Fruits tasted were blueberries, cantaloupe, strawberries, oranges, pears,

pineapples, and peaches. Vegetables tasted included tomato, squash, broccoli, cauliflower, pickled okra, carrots, peppers, spinach, and dark leafy lettuce. Throughout the 17-class intervention period, the seven fruits were tasted four different times, and the nine vegetables were tasted six different times. Fruits were served raw or canned, and vegetables were raw and served with a small packet of ranch dressing.

Evaluation Tools

The Challenge, a tool created for the BQ assessment, was developed by a team of professors, ACES specialists, county educators and graduate students at Auburn University. Questions chosen for the assessments were compiled into a colorful booklet that was professionally developed by a team of graphic designers. *The Challenge* was created to be appropriate for a third-grade literacy level. The original assessment booklet was 104 questions in length and contained items on knowledge, healthy habits, and F/V preference.

To measure content validity of *The Challenge*, SNAP-Ed educators tested it in a pilot study to third-grade student classrooms for six weeks. Students, school teachers, SNAP-Ed educators, and ACES state staff provided input. In addition, assessment questions have been previously validated as they have been used for many years in SNAP-Ed assessments in Alabama.[32,39]

One major finding from the pilot study was that *The Challenge* needed to be divided into two shorter assessments. This would allow each assessment to fit within a 30-minute class time. In addition, some questions were deleted based on pilot-study recommendations.

After *The Challenge* was divided into two shorter assessments, pre- and post-assessments occurred in the first two and last two weeks of the intervention (Appendix B). Pre1 and Pre2 were administered in classes one and two, and Post1 and Post2 were administered in classes 16 and 17. Pre1 and Post1 assessments were identical and consisted of 42 questions. Pre1 and Post1 assessments were contained in one assessment booklet, *The Challenge (First).* The first two questions of the assessment were "coding" questions, which marked the assessment as either pre1 (class 1) or post1 (class 16). Pre2 and Post2 assessments were identical and consisted of 44 questions. Pre2 and Post2 assessments were contained in another assessment booklet, *The Challenge (Second).* The first two questions of these assessments were also "coding" questions, which marked the assessment as Pre2 (class 2) or Post2 (class 17).

Both Pre1/Post1 assessments and Pre2/Post2 assessments contained nutrition knowledge and preference questions for specific F/V. Of the total 42 questions in Pre1 and Post1 assessments, there were 27 preference questions about nine vegetables (tomato, squash, broccoli, cauliflower, pickled okra, carrots, peppers, spinach, and dark leafy lettuce). Of the total 44 questions in Pre2 and Post2 assessments, there were 21 questions about seven fruits (blueberries, cantaloupe, strawberries, oranges, pears, pineapples, and peaches).

Preference questions for each F/V consisted of a series of three questions. The questions included: (1) "Do you like <F/V name>?", (2) "After tasting a <F/V name>, do you like it?", and (3) "The next time a <F/V name> is offered during school lunch, will you eat it?". Each of the three questions was given in sequence for each fruit and each vegetable. The first question, "Do you like <F/V name>?" had three response options:

A=No; B=Yes; and, C=Not Sure. After the response options for the first preference question, a prompt “If you want, try a <F/V name> now” was included. The second question, “After tasting a <F/V name>, do you like it?” contained a Likert scale[36] suitable to a third grade population. The scale contained six response options: A=Didn’t try it; B=Hate it; C=Don’t like it; D=Don’t mind it; E=Like it; and, F=Love it. Each response option also had a cartoon face designed to depict the text. The third question, “The next time a <F/V name> is offered during school lunch, will you eat it?”, contained options: A=No; B=Yes; and, C=Do not eat school lunch most days.

Clickers were chosen as the medium for data collection. For students, clickers enhanced the overall technology component of BQ (see Chapter 3). For the research team, clickers allowed for the collection and transfer of large amounts of data while reducing the burden at the county level.[44,45] Considerable attention was given by the BQ research team to ensure that clicker use would effectively maximize the time that educators could spend on education, and minimize the time spent grading paper assessments and entering data.

The development of the data management system using clickers was labor-intensive and detailed, and is outlined in Figure1. First, the BQ researchers evaluated different clicker response systems and the various software packages (Figure1-A). The researchers decided on using clickers with TurningTechnologies® software packages. Next, in order to build the system for data collection through clickers, this researcher invested time learning how to use multiple TurningTechnologies® software packages (Figure1-B).

One of the TurningTechnologies® software packages, ResponseCard AnyWhere Desktop, was chosen as the software that would save BQ evaluation data collected in the classroom (Figure1-C). A separate software package, TurningTechnologies 2008, was selected to maintain students' names and demographic data, and format data for export (Figure1-D).

Each SNAP-Ed educator was given a set of clickers to be used in each of their four classes. SNAP-Ed educators learned how to use clickers for data management through the use of *Clicker Instructions* (Appendix C) provided at an in-service training (Figure1-E). From the classroom set of 30 clickers, educators assigned each student to a previously numbered clicker. Through the 17-class BQ protocol, students used the same clicker at all four assessments (Pre1, Pre2, Post1, Post2). Prior to data collection, educators created a "Participant List" through TurningTechnologies® software that contained all participant information and demographics based on a classroom roster (Figure1-F). Central school offices for each class involved in BQ intervention provided demographic data for each student through *All About Students* (Appendix D). Once a participant list was created, data collection in the classroom could begin.

To initiate data collection in the classroom, educators brought one of the two appropriate assessment booklets (*The Challenge (First)*, or *The Challenge (Second)*), bags containing fruits or vegetables depending on which assessment was used, ranch dressing if vegetables were given, and a set of clickers. Each student was given their assigned clicker and the assessment book with the appropriate bag of fruits or vegetables to taste.

Although each student had an assessment booklet (*The Challenge (First)*, or *The Challenge (Second)*) in front of them at their desk, educators read aloud each question during the assessment. Students responded by clicking the appropriate answer on their individual clickers. During the assessment, each SNAP-Ed educator held a handheld data receiver, approximately the size of a cell phone. The receiver stored student responses collected during assessments (Figure1-G).

During the series of three questions on F/V preference, students were prompted by the educator to answer the first question in the series, “Do you like <F/V name>?”, based on their memory of that specific F/V. Educators then told the students that if they wanted to try the F/V, to go ahead and take the <F/V name> out of the bag and taste it. Children were served fruits without condiments; for vegetables they were given a small packet of ranch dressing. Then, the second question in the series, “After tasting a <F/V name>, do you like it?”, was read by educators and students responded with their clickers. Answers to responses were stored in the handheld receiver. The final question in the series, “The next time a <F/V name> is offered during school lunch, will you eat it?”, was then asked and after it was answered the educator and students moved to the next series of tasting questions in the assessment.

After an assessment was completed, educators downloaded data stored in their handheld receiver onto their work computers using TurningTechnologies® software (Figure1-H). Then, data were uploaded by the educator to a central SharePoint website (Figure1-I). A workflow, created by this researcher, was written using Microsoft SharePoint Designer. This workflow allowed data that were uploaded by each SNAP-Ed educator to be “moved” in SharePoint to a data repository (Figure1-J). This movement

took data out of the at-large availability to decrease the potential for data to be tampered with or deleted.

Next, a team of Auburn University information technology specialists created an automated solution that moved data into appropriate lists for analyses. The automated solution stripped student names and assigned unique user identification numbers. This process maintained student anonymity and allowed data from each incoming BQ assessment to be joined to the proper student. Data files were joined in order of assessment (Pre1, Pre2, Post1, then Post2) for statistical analyses.

Subjects

During the 2011-2012 school year, students (n=1,829) participating in the 17-class BQ intervention were from third grade classes in 60 schools across 38 counties in Alabama. All schools had at least 50% or more of students receiving free or reduced school lunch; 46% of schools had “high” free and reduced school lunch, i.e., greater than 75% or more of students on free or reduced school lunch. Of the students participating in intervention, 52% were male, 44% Black, and 56% were non-Black (predominately White).

Statistical Analyses

Data analyses were conducted by SPSS[46] software. Paired Samples T-tests were used to examine a change in preference for F/V. Each of the three preference questions per F/V was scored on a dichotomous scale where 1=yes and 0=no. For the first question in the series, “Do you like <F/V name>?”, a score of 1 was given for

answer B=Yes, and a score of 0 was given for answers A=No and C=Not Sure. The same coding was given for the third question in the series, “The next time a <F/V name> is offered during school lunch, will you eat it?”. For the second question in the series, “After tasting a <F/V name>, do you like it?”, a score of 1 was given for answers D=Don’t mind it; E=Like it; and, F=Love it, and a score of 0 was given for answers A=Didn’t try it; B=Hate it; and, C=Don’t like it.

An individual preference score for each of the seven fruits and nine vegetables was calculated based on the sum of the three preference questions in the series. Individual fruit preference subscale reliabilities for each of the seven fruits ranged from: pre α=.64-.85 and post α=.46-.77. Individual vegetable preference subscale reliabilities for each of the nine vegetables ranged from: pre α=.75-.85 and post α=.72-.83.

In addition, an overall preference score for all fruits and all vegetables was calculated. The overall sum score for fruits was calculated based on adding the individual preference scores of all seven fruits together. That number was then divided by seven to give a mean overall preference score for fruits. A Cronbach’s alpha coefficient[47] determined overall reliability of fruit preference score to be α=.82 for pre-assessment and α=.84 for post-assessment.

The same process was followed to calculate the mean overall preference score for vegetables, except that the overall sum score was divided by nine, the number of vegetables tasted. A Cronbach’s alpha coefficient[47] determined overall reliability of vegetable preference score to be α=.82 for pre-assessment and α=.85 for post-assessment.

Results

The overall fruit preference score of students indicated there was a ceiling effect. Fruits were highly preferred by students at the beginning of the intervention. At the end of the intervention, no significant ($t=1.153$, $p=.249$) result from pre- to post-assessment was found as there was little room for improvement (Table 1). The mean overall fruit pre-preference score was 2.58 (SD 0.66). The mean overall fruit post-preference score was 2.55 (SD 0.69).

The overall vegetable preference of the students increased significantly ($t=-13.82$, $p<.001$) from pre- to post-assessments (Table 1). The mean overall vegetable pre-preference score was 1.20 (SD 0.76). The mean overall vegetable post-preference score was 1.56 (SD 0.80).

Using a Paired Samples T-test, individual vegetable preference scores for each of the nine vegetables were analyzed from pre- to post-assessments in students (Table 1). Six of the nine vegetables had an increase in individual vegetable preference scores. Listed from the most to the least change, individual vegetable preference scores increased for pickled okra, squash, broccoli, lettuce, pepper, and spinach. There were no significant changes from pre- to post-assessments in individual preference scores for tomato, carrot, or cauliflower.

Discussion

The current childhood obesity epidemic points to the continued need for engaging nutrition intervention programs for school systems. In Alabama, filling that

need became the motivation for BQ. This current study is an outcome evaluation of one objective of BQ: an increase in the preference for fruits and vegetables in third graders. Measurement of intent and consumption (behavior) of fruits and vegetables has been evaluated in another study (Mastropietro LM, unpublished data, 2012).

This study demonstrated a significant increase in vegetable preference. Specifically, an increase in vegetable preference was observed for two-thirds of the vegetables tested in this study. These vegetables are typically not considered to be palatable to children. Vegetables were served raw with ranch dressing, the method of preparation preferred by children,[15,24] which may have influenced preference increases.

Research has suggested that behavior change is likely to increase after having exposure to at least three nutrition education lessons with no significant increases occurring after the sixth lesson.[34,35] It is likely that education, combined with opportunities to taste, occurring throughout BQ intervention, made a positive impact in students' preference for vegetables.

Many studies report that preference increase in vegetables is a good indicator of possible changes in vegetable consumption.[4,8,13,14,32,29] Wardle *et al.*[37] reported significant preference increases in children who watched an adult eat a vegetable and were then given the opportunity to try the vegetable themselves. A study by Wall *et al.* showed that education, when coupled with demonstrations about incorporation of F/V in everyday life, can give significant preference increases.[14] Parmer *et al.*[37] reported that preference is influenced by hands-on garden-based learning and the opportunities to taste F/V. These studies all suggest that giving students the opportunities to try F/V can influence preference for those F/V.

This research used F/V that could realistically be obtained in the rural areas of a Southern state. The F/V tasted by these third graders were “common,” but not all were considered “kid-friendly”. The researchers speculated that fruit preference would be high at the beginning and throughout the entire 17-class program. In general, fruits were used to “break the boredom” of tasting vegetables throughout the program.

In addition to the unique opportunities for children in this study to taste F/V, BQ provided other novel opportunities to children in rural settings. iPad application technology was one benefit to the children participating in BQ intervention. It provided students with rare and valuable opportunities to use state-of-the-art and novel programming for learning. The guided learning style provided by these BQ reinforcements allowed students to experience, share, process, generalize, and apply concepts for a greater understanding of the material.

In this research, the novel use of clickers benefitted this outcome evaluation in two ways. First, BQ initiated over one million data points as students had weekly evaluation measures. Preference changes in this population were only one of the many evaluations of BQ from the 2011-2012 school year. This necessitated a unique data management process that would both monitor data progression and maintain student anonymity. Although clickers have been used in the classroom to gauge student understanding of a concept, the use of clickers in this research was ground breaking in that they were used to collect assessment data.[44,45] The incorporation of clickers allowed for a seamless data collection and management process, and reduced the burden of data input at the county level. Traditional nutrition programming usually assesses students with pencil and paper. In contrast, it was estimated that the use of

clickers allowed each educator 25% more time to invest in classroom education. Clickers also reduced data entry error.[44] The use of clickers and clicker software for data management allows BQ to become a long-term, wide-scale, multistate intervention program.

A second benefit of using clickers was that researchers believed students were allowed to answer assessment questions more truthfully. Children often provide answers based on what they believe their peers or teachers would want. In order to prevent this "pleasing phenomenon"[32] by study participants, clickers were used. While there may have been peer influence to participate in the classroom tasting activities, it is believed that the third graders provided a "real" response to tasting questions due to the anonymity of using clickers.

Limitations

One limitation of this study was that findings of the research are generalizable only to a third grade, rural population with schools of at least 50% or more of students receiving a free or reduced school lunch. While preference increases were measured, the study was not designed to examine predictors of preference, which would allow for more broad implications. Some existing predictors of F/V preference are socioeconomic status, gender, race, and ethnicity.[9,28]

After examining the limitations of this study, research design changes have been made to curriculum and evaluation tools for the second year of implementation (school year 2012-2013). One change was that only one assessment booklet is currently used throughout intervention instead of two booklets. The second change was one

assessment administered at four time points throughout intervention on weeks 1, 5, 7, and 12. This protocol is currently used in place of two pre-assessments taken at weeks 1 and 2, and two post-assessments taken at weeks 16 and 17. It is anticipated that a single assessment taken at multiple points throughout the intervention will produce better results and the opportunity to use more advanced statistical measurements, such as growth modeling, to measure changes in students throughout intervention.

Implications for Research and Practice

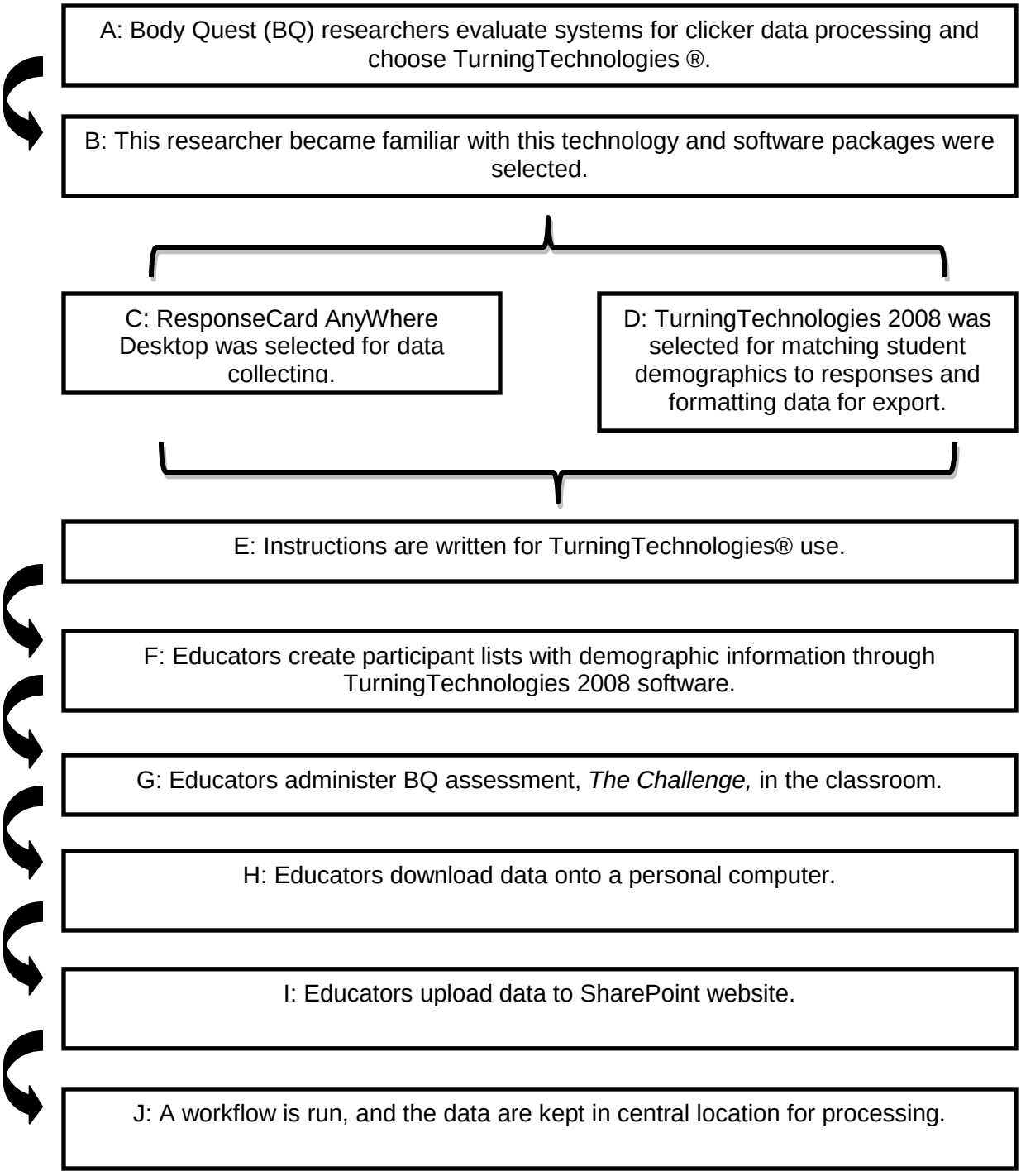
The present results emphasize the importance of including development of children's F/V preference into educational nutrition interventions. As preference for F/V is a known determinant of F/V consumption,[4,5,6,7] childhood obesity prevention programs should provide opportunities for children to form preferences for F/V. This study provided F/V tasting opportunities which lead to increased preferences for most F/V tasted during the course of the intervention. Providing these types of activities in typical nutrition education is a realistic method of developing F/V preferences, which may ultimately result in decreased prevalence of childhood obesity as consumption of a preferred F/V increases.

Another finding from this research suggests that implementing novel technology in an intervention program can effectively engage students in learning. Current novel technology, such as iPad apps, provides students with interactive learning experiences and immediate feedback. Because iPad apps will not always be the most novel pedagogy available, future programs should continue to explore creative teaching tools that can effectively teach nutrition content to the next generation of learners.

Table 1: Overall Mean Fruit and Mean Vegetable Preference Scores for BQ Participants

Variable	Intervention Group			
	Pre (SD)	**Post (SD)**	**t**	**Sig**
Overall Fruit Preference Score	2.58 (0.66)	2.55 (0.69)	1.153	.249
Overall Vegetable Preference Score	1.20 (0.76)	1.56 (0.80)	-13.82	.000
Individual Vegetable Preference Scores				
Tomato	1.24 (1.23)	1.25 (1.24)	-0.22	.825
Squash	1.10 (0.94)	1.37 (1.17)	-8.27	.000
Broccoli	1.47 (1.06)	1.71 (1.18)	-7.09	.000
Cauliflower	1.15 (1.16)	1.21 (1.78)	-1.15	.252
Pickled Okra	1.61 (1.11)	2.02 (1.19)	-8.03	.000
Carrots	1.93 (1.20)	1.91 (1.18)	0.46	.644
Peppers	1.09 (1.13)	1.25 (1.20)	-3.04	.002
Spinach	1.67 (1.05)	1.80 (1.14)	-2.59	.010
Dark Leafy Lettuce	1.54 (1.13)	1.70 (1.18)	-3.06	.002

Figure 1: A Workflow of BQ Data Setup and Processing.



Chapter 5

Summary of Findings

Foreword: This is a summary of findings from Chapter 3 and Chapter 4 of this thesis.

Overview

BQ was designed as a multicomponent childhood obesity intervention program for third grade students. The curriculum was implemented in schools where at least 50% or more of the children received free or reduced school lunch. In this thesis, this researcher summarized BQ as a Great Educational Material (GEM), and also documented the impact of BQ on changes in F/V preference in participating students.

Body Quest: Food of the Warrior Findings

The design of the BQ curriculum used traditional and nontraditional nutrition education methods to initiate a childhood obesity prevention program. Traditional components of BQ included SNAP-Ed educator-lead nutrition education curriculum, teaching aids such as card decks, and F/V tastings. Non-traditional components of BQ included the incorporation of technology such as iPad apps and clickers. The protocol of the 17-class curriculum was a long-term intervention and therefore, also is non-traditional.

Students and school administrators responded well to the novel opportunity to participate in this state-of-the-art education. For students, the BQ iPad apps provided an engaging “game-approach” that gave interactive learning opportunities with immediate feedback. School administrators were pleased that students in rural classrooms had access to state-of-the-art technology for learning as well as opportunities to taste F/V. For SNAP-Ed educators, BQ rejuvenated nutrition education components by employing a new pedagogy. Using iPad apps to reinforce classroom instruction allowed educators to directly engage the technology-driven student audience.

Data Management System and Changes in F/V Preference of Students

Another technology opportunity in BQ was that clickers were used for data collection and management. The use of clickers for BQ combined the researcher’s goals of incorporating technology into nutrition education as well as reducing the data processing burden at the county level. Furthermore, clickers gave BQ the seamless data processing needed for an long-term intervention program with multiple assessments.

Results of the BQ intervention included increases in preference for six of nine vegetables tasted during the 17-class curriculum. The researchers were pleased with increases in these vegetables, as they are not usually considered “kid-friendly” foods due to their bitter taste. Because increasing preference for a vegetable can increase consumption, the preference increases ultimately help promote healthy weight management.[4-7]

Future Implications

After the first school year (2011-2012) of BQ implementation, the researchers have made changes to the protocol with the goal of using statistical measurements such as growth modeling. Using growth modeling analysis would allow the researchers to monitor changes in preference at time points throughout the intervention. Other long-term goals of the BQ researchers are to measure physical activity changes, nutrition-related sleep hygiene, and family involvement.

BQ was a creative intervention program that could be administered through SNAP-Ed educators nationwide. Of the many values of BQ, the incorporation of technology into nutrition education as well as an increased opportunity to try F/V is prominent. This research revealed that BQ was well received statewide, and has profound implications towards impacting the healthy habits of children to prevent childhood obesity.

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Appendix A

Parental Consent Form

ALABAMA COOPERATIVE Extension SYSTEM

PARENT PERMISSION
for a Research Study called
Body Quest: Food of the Warrior
How to Get Children to Eat More Fruits and Vegetable

All students in your child's class are invited to help us study how to get children to eat more fruits and vegetables. It also will teach your child how to stay healthy by exercising and getting enough sleep. The program, called Body Quest, will take 30 minutes once a week for 17 weeks in class.

During Body Quest, your child will taste some fruits and vegetables. But your child does not have to eat any that he/she doesn't like or is allergic to. Circle any of these foods that your child is allergic to.

FRUIT: Blueberries, Cantaloupe, Strawberries, Oranges, Pears, Pineapple, Peaches

VEGETABLE: Tomatoes, Squash, Broccoli, Cauliflower, Pickled okra, Carrots, Peppers, Spinach, Lettuce

After tasting foods, we will ask questions about what your child tasted. Your child also will tell us what they ate at lunch and how they like to use things, like computers, in class. Everything your child tells us will be kept private.

During this nutrition program, your child:

1. Will use an iPad computer, either during or at the end of Body Quest.
2. May complete worksheets about eating healthy foods.
3. Will get things like a t-shirt and card deck that we will use in class.

If you let your child help us, we will use your child's worksheets and other information in our study. There are no good or bad answers. Your child's grades will not change because of anything your child says or does. Everything will be kept private.

Being a part of this study is totally up to you and your child. Your child can drop out any time.

Nothing bad will happen to your child if he or she does not want to be in this study or drops out. Your child will still stay in the classroom during Body Quest. Your child's grade will not change if he or she is not in the study. But your child will not get the teaching items like the t-shirt and card deck

Initial here to show that you read this page_____

The Auburn University Institutional Review Board has approved this document for use from 8/17/11 to 7/11/12
Protocol # 11-213 MR 1107

The Alabama Cooperative Extension System offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

Whether or not your child is in the study will not make a difference to Auburn University or the Alabama Cooperative Extension System.

If you or your child have questions, call Barb Struempler (334-844-2217) or the Office of Human Subjects Research (334-844-5966) at Auburn University.

IF YOU SIGN THIS FORM IT MEANS:

1. YOU UNDERSTAND WHAT IS IN THIS LETTER
2. YOU ARE LETTING YOUR CHILD BE IN THIS STUDY

Parent/Guardian Signature Date

Printed Name

Print Name of Child

Barb Struempler 8/22/11

Barb Struempler, Researcher Date

Barb Struempler

Investigator Printed Name

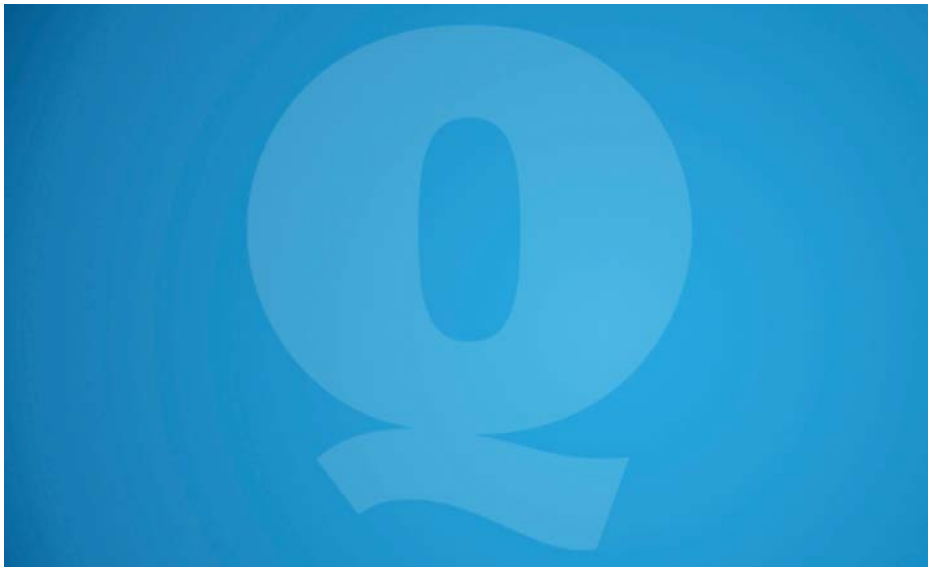
The Auburn University Institutional Review Board has approved this document for use from 8/17/11 to 7/11/12

Protocol # 11-213 MR 1107

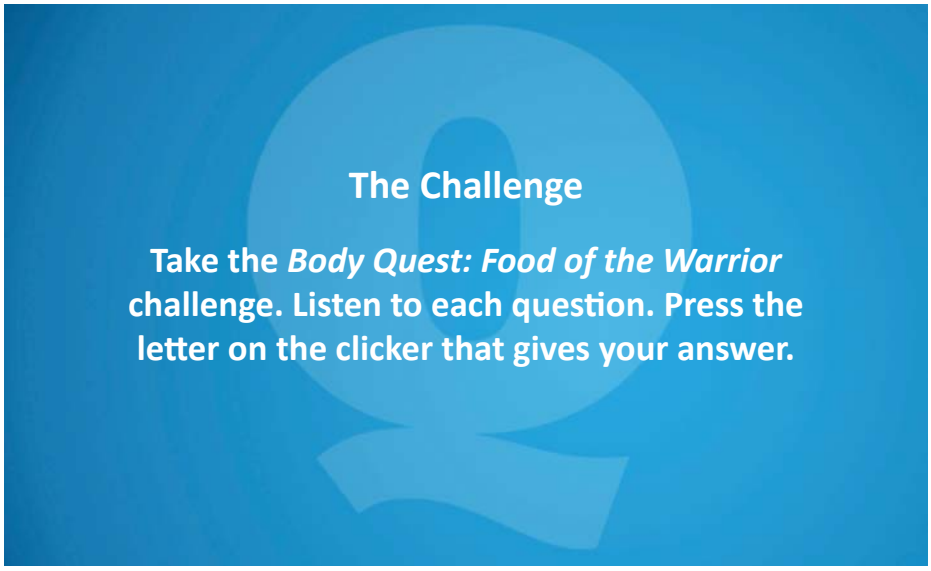
Appendix B

The Challenge (First) and *The Challenge (Second)*

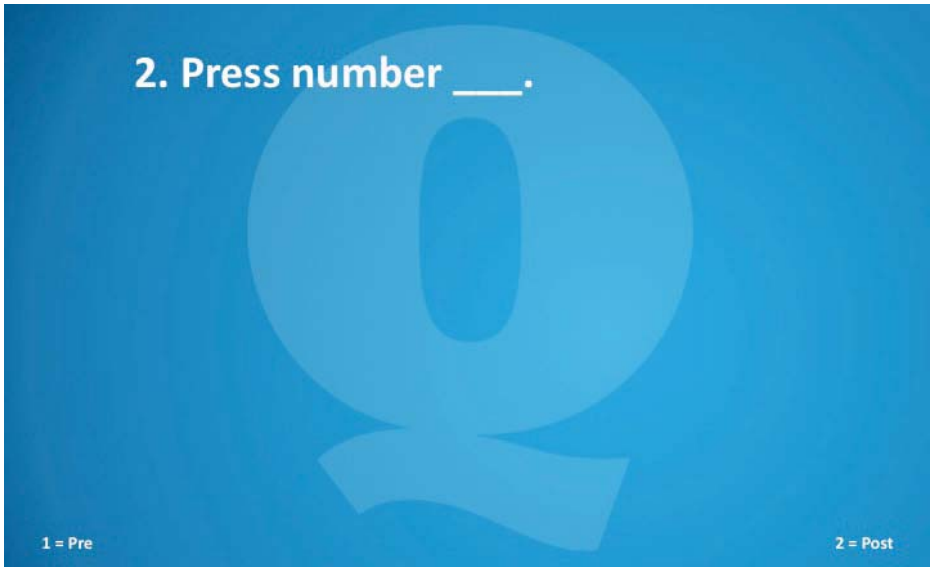
BODY QUEST | FOOD OF THE WARRIOR CHALLENGE



BODY QUEST | FOOD OF THE WARRIOR CHALLENGE



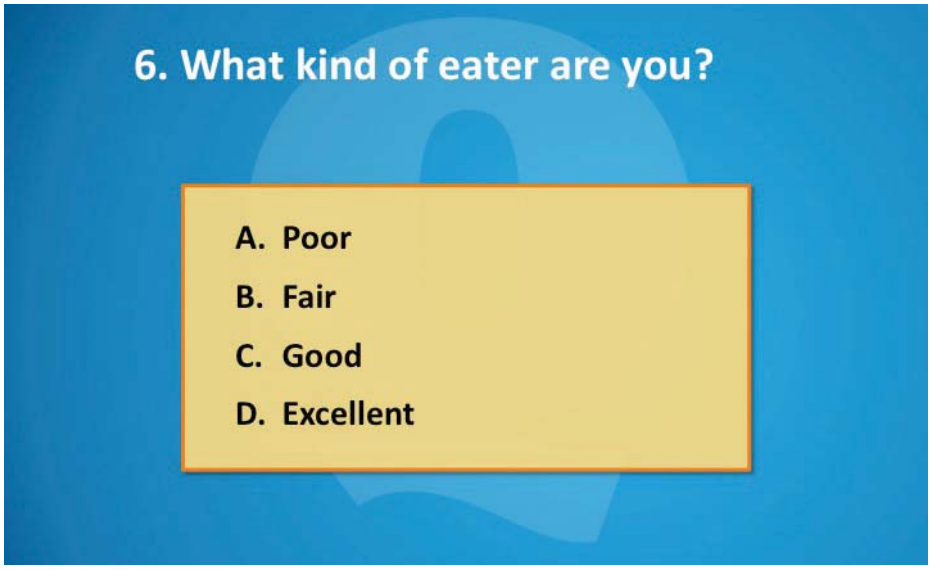
1. Press number ___.
1 = Tech
2 = P&P
3 = Class


2. Press number ___.
1 = Pre
2 = Post

3. Press number 3.

4. On most days, do you get a school breakfast?
A. No
B. Yes

5. On most days, do you get a school lunch?
A. No
B. Yes

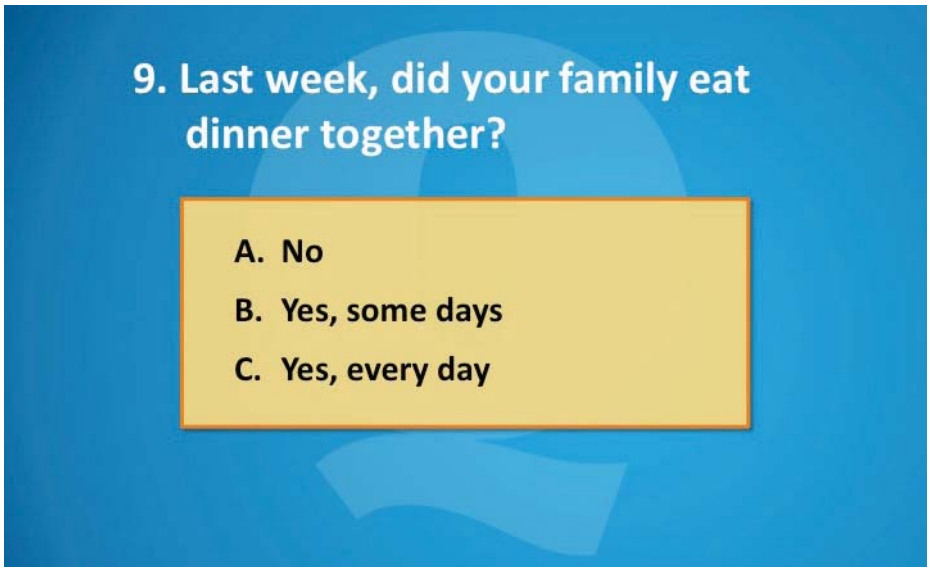

6. What kind of eater are you?
A. Poor
B. Fair
C. Good
D. Excellent

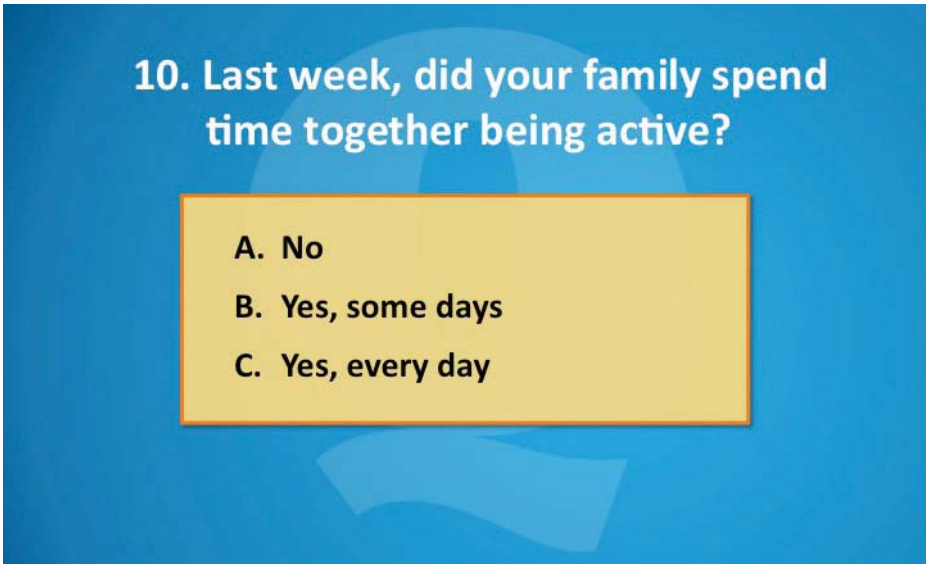
7. Last night, what time did you go to bed?

A. Before 7:00
B. 7:00 – 7:30
C. 7:30 – 8:00
D. 8:00 – 8:30
E. 8:30 – 9:00
F. After 9:00

8. This morning, what time did you get up?

A. Before 5:30
B. 5:30 – 6:00
C. 6:00 – 6:30
D. 6:30 – 7:00
E. 7:00 – 7:30
F. After 7:30


9. Last week, did your family eat dinner together?
A. No
B. Yes, some days
C. Yes, every day


10. Last week, did your family spend time together being active?
A. No
B. Yes, some days
C. Yes, every day

11. Do you eat fruits or vegetables as snacks?

A. No
B. Yes, some times
C. Yes, every day

12. Do you drink soda?

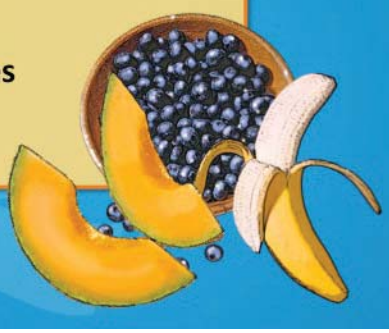
A. No
B. Yes, some times
C. Yes, every day

13. Do you drink milk?

A. No
B. Yes, some times
C. Yes, every day

14. Do you eat more than one kind of fruit each day?

A. No
B. Yes, some times
C. Yes, every day



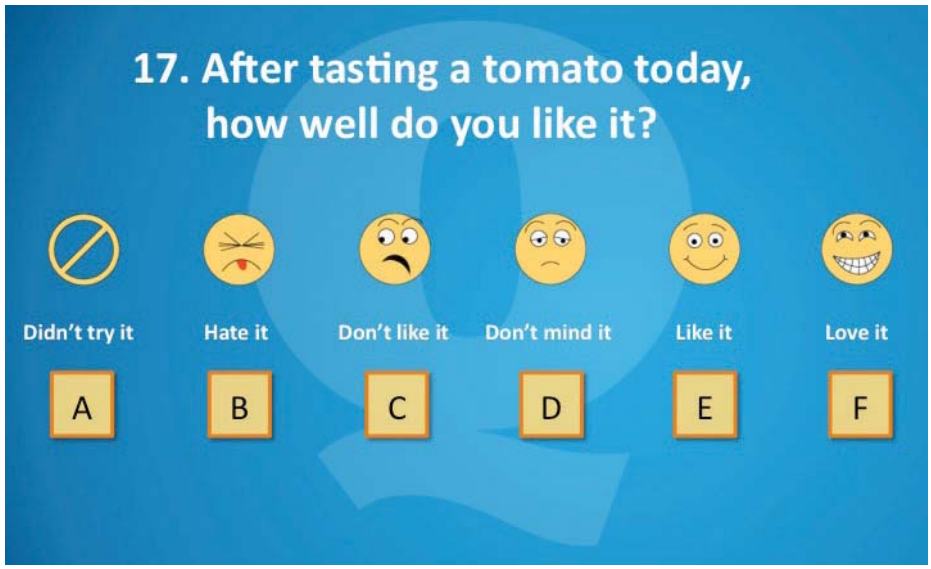
15. Do you eat more than one kind of vegetable each day?

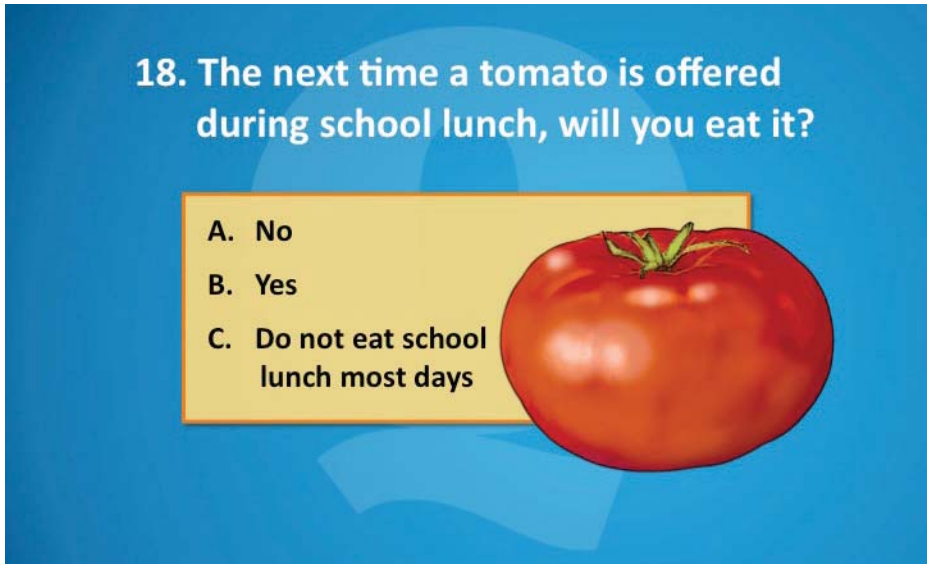
A. No
B. Yes, some times
C. Yes, every day

16. Do you like tomatoes?

A. No
B. Yes
C. Not sure

If you want, try a tomato now.


17. After tasting a tomato today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


18. The next time a tomato is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

19. Do you like squash?

A. No
B. Yes
C. Not sure

If you want, try squash now.

20. After tasting squash today, how well do you like it?

Didn't try it	Hate it	Don't like it	Don't mind it	Like it	Love it
A	B	C	D	E	F

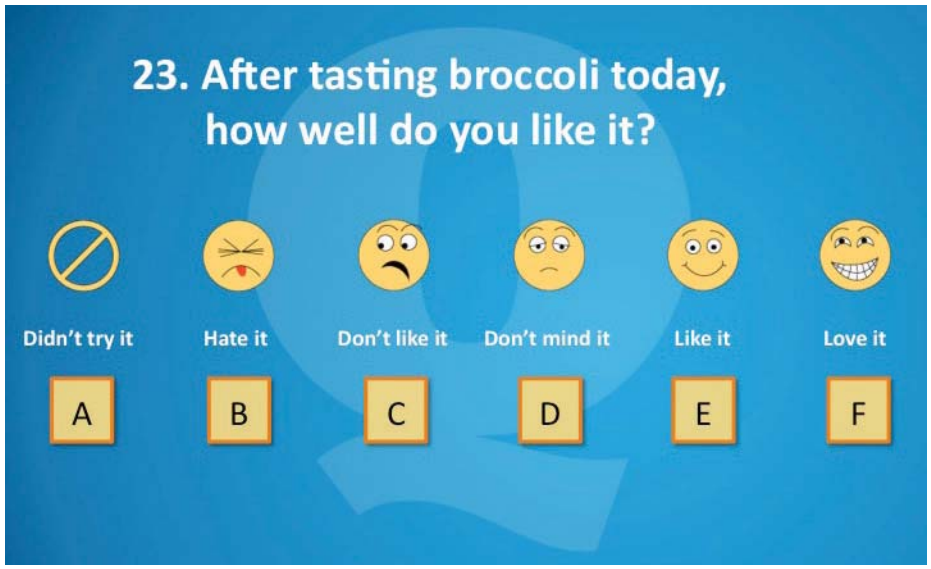
21. The next time squash is offered during school lunch, will you eat it?

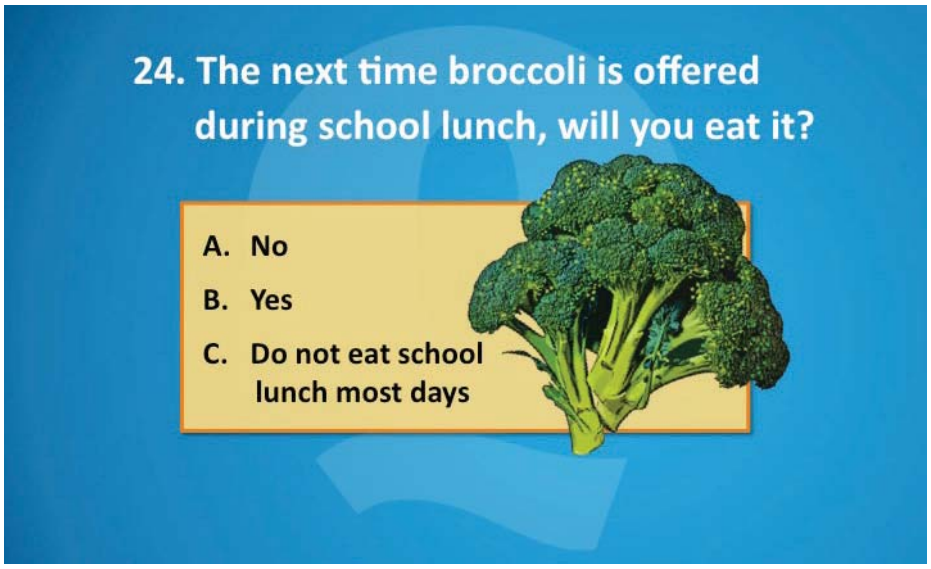
A. No
B. Yes
C. Do not eat school lunch most days

22. Do you like broccoli?

A. No
B. Yes
C. Not sure

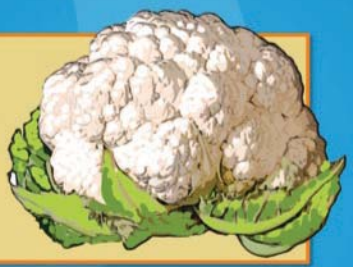
If you want, try broccoli now.


23. After tasting broccoli today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


24. The next time broccoli is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

25. Do you like cauliflower?

A. No
B. Yes
C. Not sure



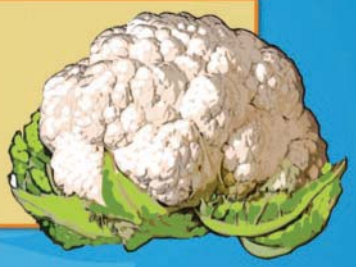
If you want, try cauliflower now.

26. After tasting cauliflower today, how well do you like it?

Didn't try it	Hate it	Don't like it	Don't mind it	Like it	Love it
A	B	C	D	E	F

27. The next time cauliflower is offered during school lunch, will you eat it?

A. No
B. Yes
C. Do not eat school lunch most days

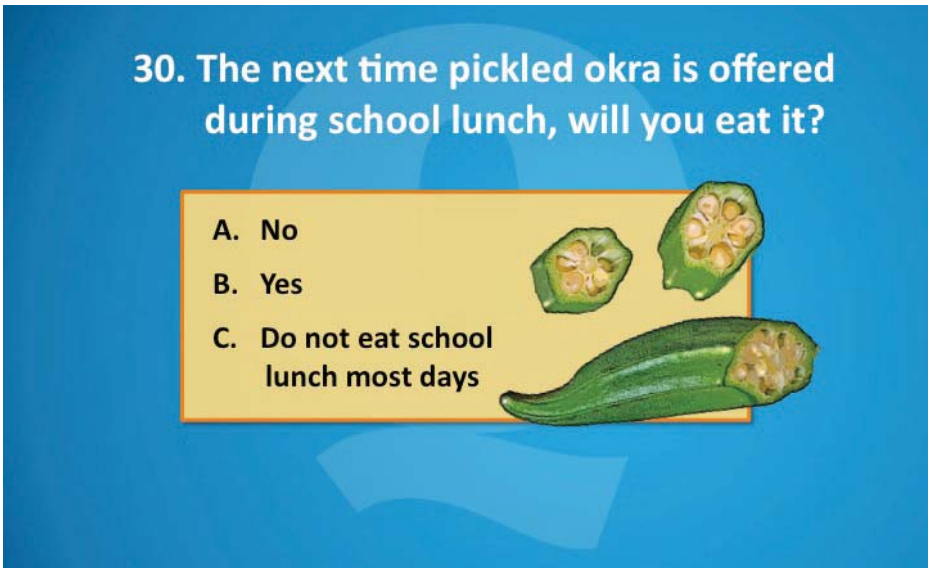


28. Do you like pickled okra?

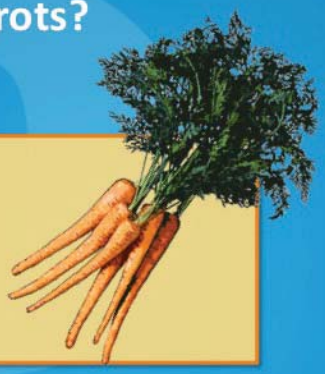
A. No
B. Yes
C. Not sure

If you want, try pickled okra now.

29. After tasting pickled okra today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


30. The next time pickled okra is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

31. Do you like carrots?



A. No
B. Yes
C. Not sure

If you want, try a carrot now.

32. After tasting a carrot today, how well do you like it?

Didn't try it	Hate it	Don't like it	Don't mind it	Like it	Love it
A	B	C	D	E	F

33. The next time a carrot is offered during school lunch, will you eat it?

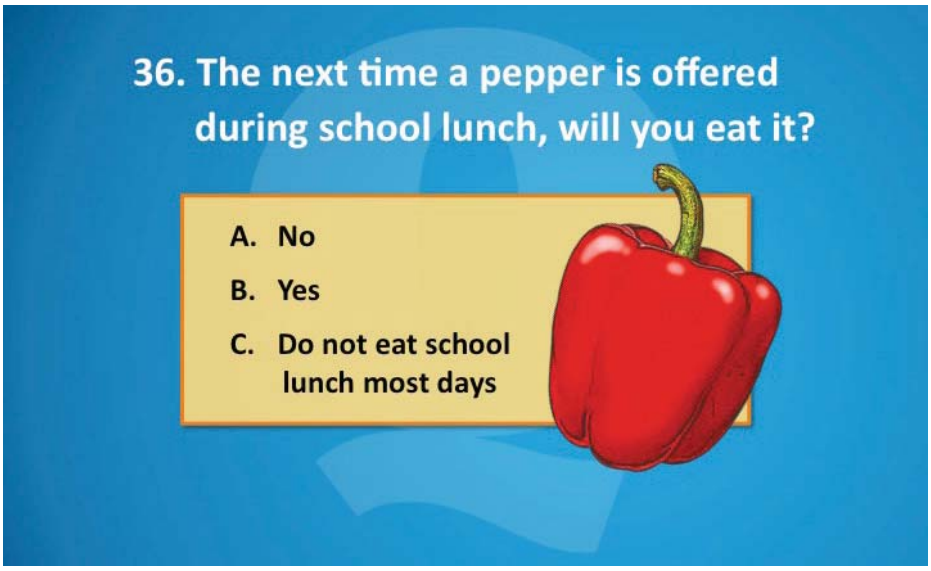
A. No
B. Yes
C. Do not eat school lunch most days

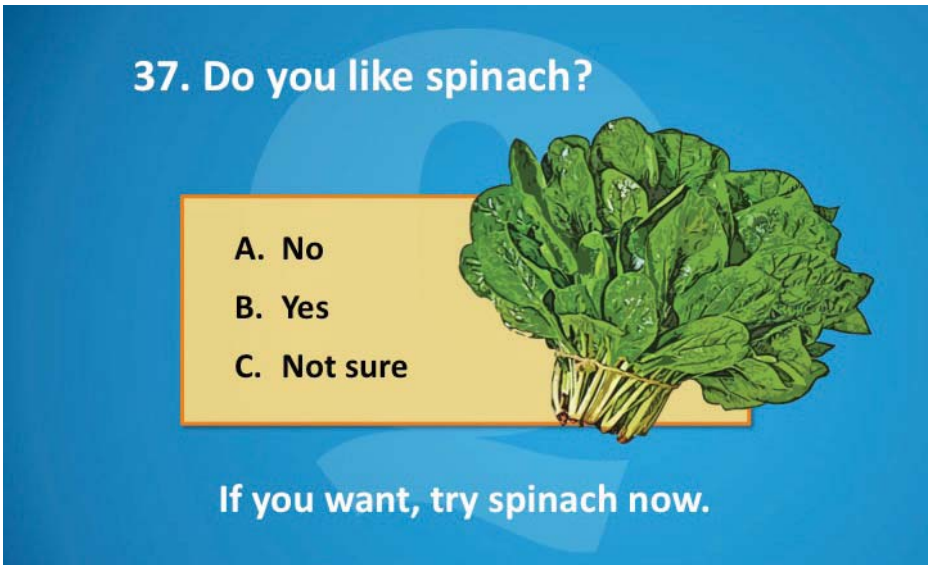
34. Do you like peppers?

A. No
B. Yes
C. Not sure

If you want, try a pepper now.

35. After tasting a pepper today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


36. The next time a pepper is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days


37. Do you like spinach?
A. No
B. Yes
C. Not sure
If you want, try spinach now.

38. After tasting spinach today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F

39. The next time spinach is offered during school lunch, will you eat it?

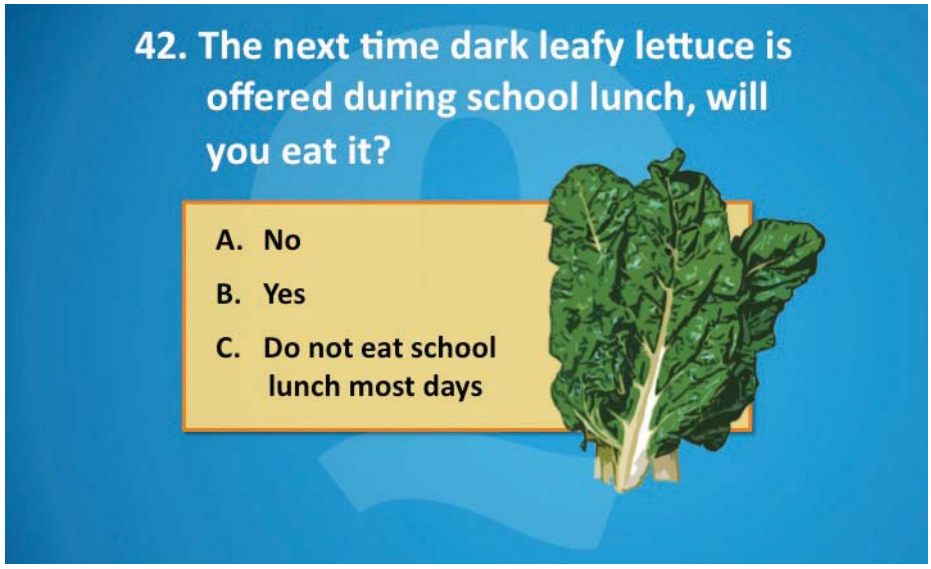
A. No
B. Yes
C. Do not eat school lunch most days

40. Do you like dark leafy lettuce?

A. No
B. Yes
C. Not sure

If you want, try lettuce now.

41. After tasting dark leafy lettuce today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


42. The next time dark leafy lettuce is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

BODY QUEST

"Body Quest: Food of the Warrior Challenge" is an assessment tool and one part of an evaluation used in conjunction with the *Body Quest: Food of the Warrior* curriculum. Body Quest is a comprehensive program for elementary youth with the goals of promoting fruits and vegetables, physical activity, and sleep hygiene. This cutting-edge, interactive, learner-centered curriculum includes a Body Quest package containing a leader's guide for educators, customized card decks for youth, posters of the Body Quest animé characters, and a poster-sized Body Quest vow card for youth to sign and pledge to the Body Quest goals. Body Quest is unique in that one method used for implementation is an application developed for iPad technology. In addition to this novel technology, pencil-and-paper activities are also included.

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Food assistance helps people with little or no income buy food. To find out more, contact a county food assistance office or a county Extension office.
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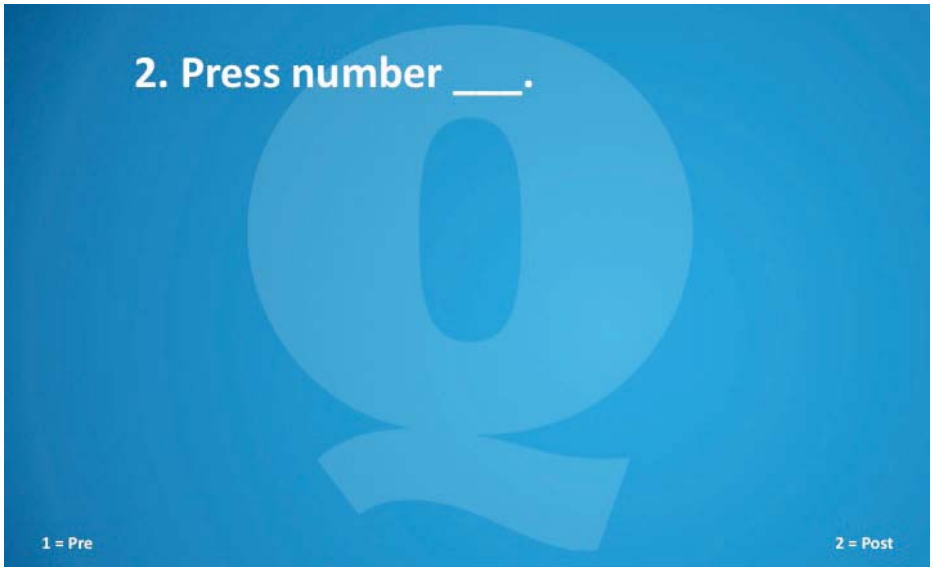
BODY QUEST | FOOD OF THE WARRIOR CHALLENGE

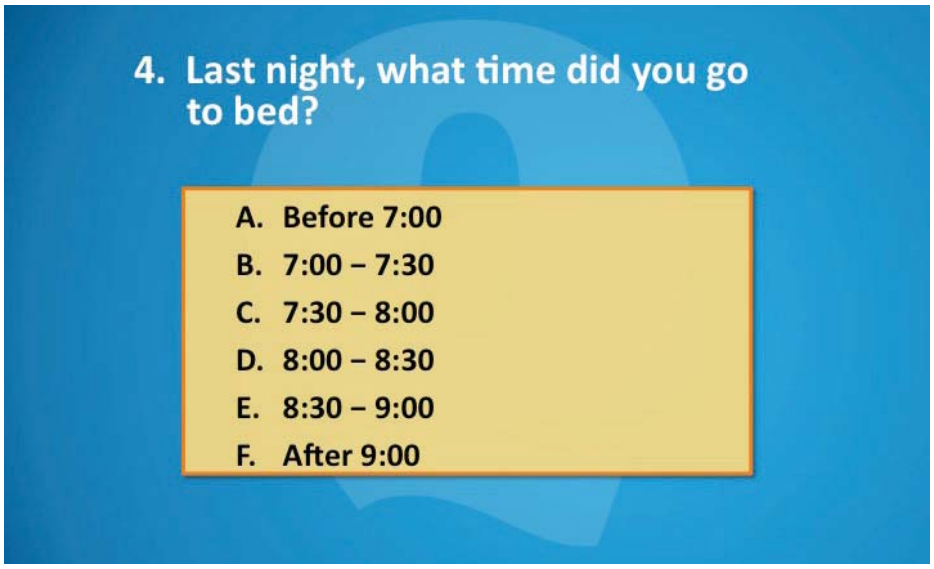
The Challenge

Take the *Body Quest: Food of the Warrior* challenge. Listen to each question. Press the letter on the clicker that gives your answer.

1. Press number ___.
1 = Tech
2 = P&P
3 = Class


2. Press number ___.
1 = Pre
2 = Post

3. Press number 4.


4. Last night, what time did you go to bed?
A. Before 7:00
B. 7:00 – 7:30
C. 7:30 – 8:00
D. 8:00 – 8:30
E. 8:30 – 9:00
F. After 9:00

5. This morning, what time did you get up?

A. Before 5:30
B. 5:30 – 6:00
C. 6:00 – 6:30
D. 6:30 – 7:00
E. 7:00 – 7:30
F. After 7:30

6. What is an important nutrient in milk?

A. Vitamin C
B. Calcium
C. Vitamin A
D. Iron

7. What is an important nutrient in grains?

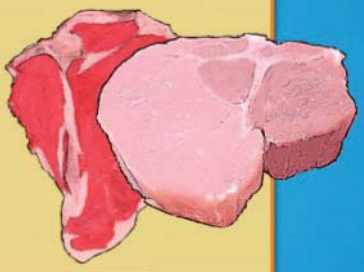
A. Vitamin A
B. Calcium
C. Carbohydrates
D. Vitamin C

8. What is an important nutrient in fruits?

A. Protein
B. Calcium
C. Iron
D. Vitamin C

9. What is an important nutrient in meats?

A. Vitamin C
B. Calcium
C. Vitamin A
D. Protein



10. What is an important nutrient in vegetables?

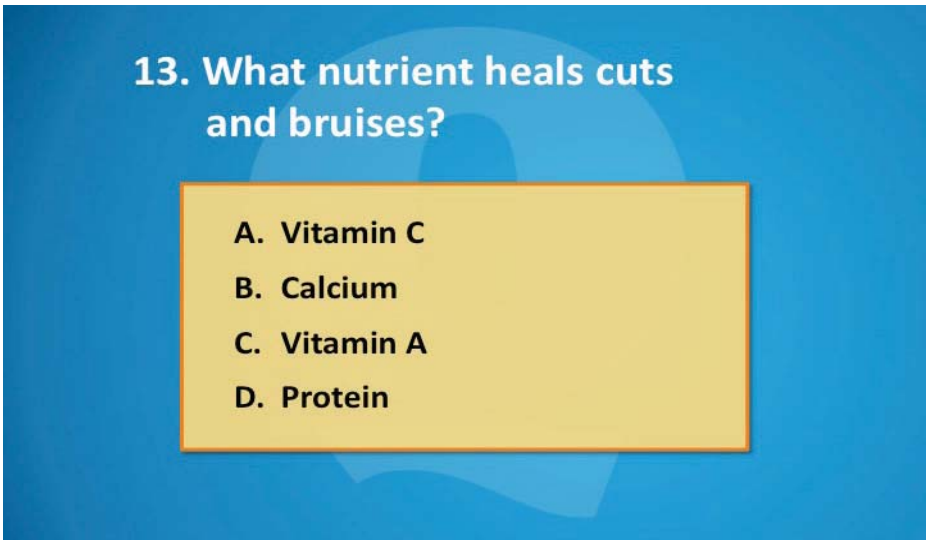
A. Vitamin A
B. Calcium
C. Protein
D. Sugar

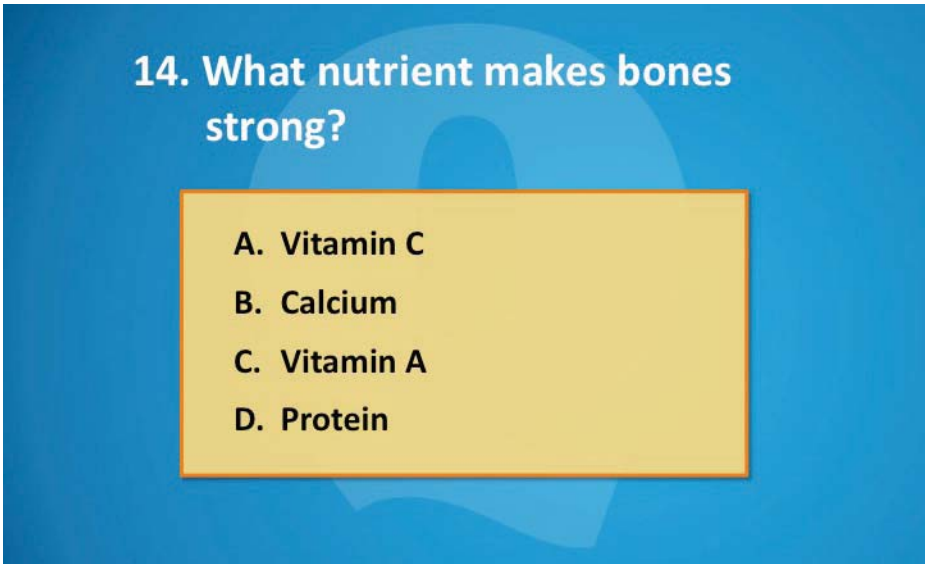
11. What nutrient is in soda?

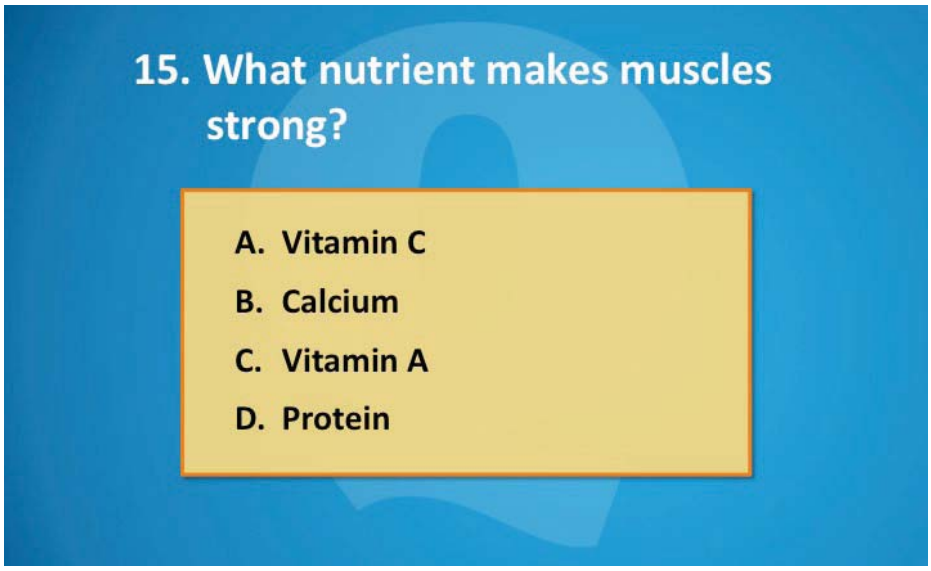
A. Protein
B. Calcium
C. Sugar
D. Vitamin A

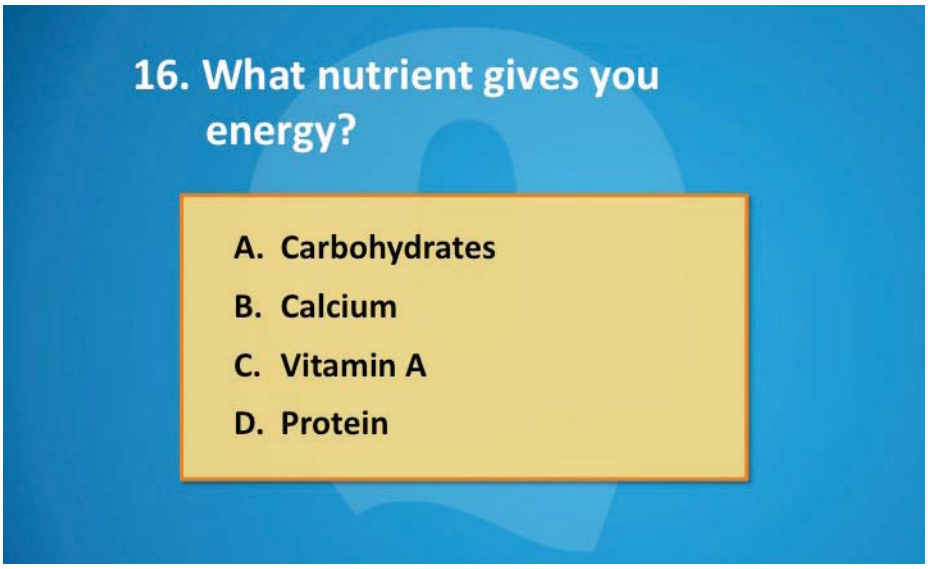
12. What nutrient helps eyes see in the dark?

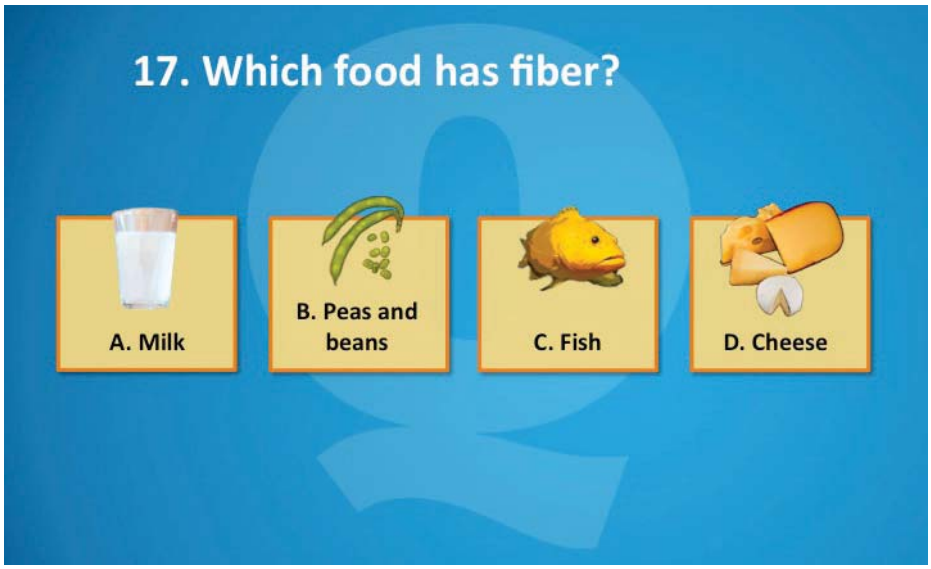
A. Vitamin C
B. Calcium
C. Vitamin A
D. Protein


13. What nutrient heals cuts and bruises?
A. Vitamin C
B. Calcium
C. Vitamin A
D. Protein


14. What nutrient makes bones strong?
A. Vitamin C
B. Calcium
C. Vitamin A
D. Protein


15. What nutrient makes muscles strong?
A. Vitamin C
B. Calcium
C. Vitamin A
D. Protein


16. What nutrient gives you energy?
A. Carbohydrates
B. Calcium
C. Vitamin A
D. Protein

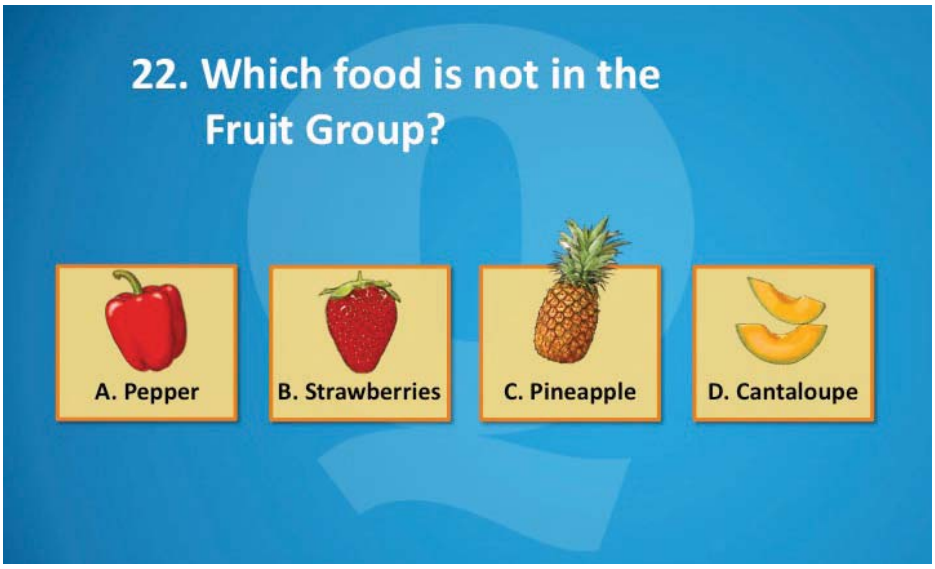

17. Which food has fiber?
A. Milk
B. Peas and beans
C. Fish
D. Cheese

18. For your health, which snack is the best?
A. Chips
B. Popcorn
C. Cookie
D. Candy

19. For your health, which drink is the best?
A. Water
B. Tea
Soda
C. Soda
diet Soda
D. Diet soda

20. Which food is not in the Grain Group?
A. Brown rice
B. Pasta
C. Green beans
D. Bagel

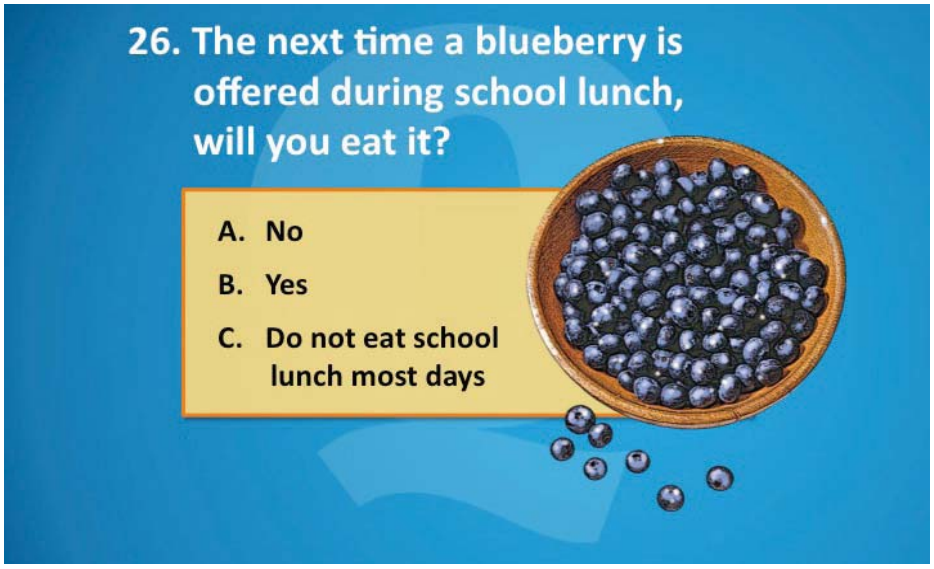
21. Which food is not in the Vegetable Group?
A. Broccoli
B. Carrots
C. Cauliflower
D. Pear

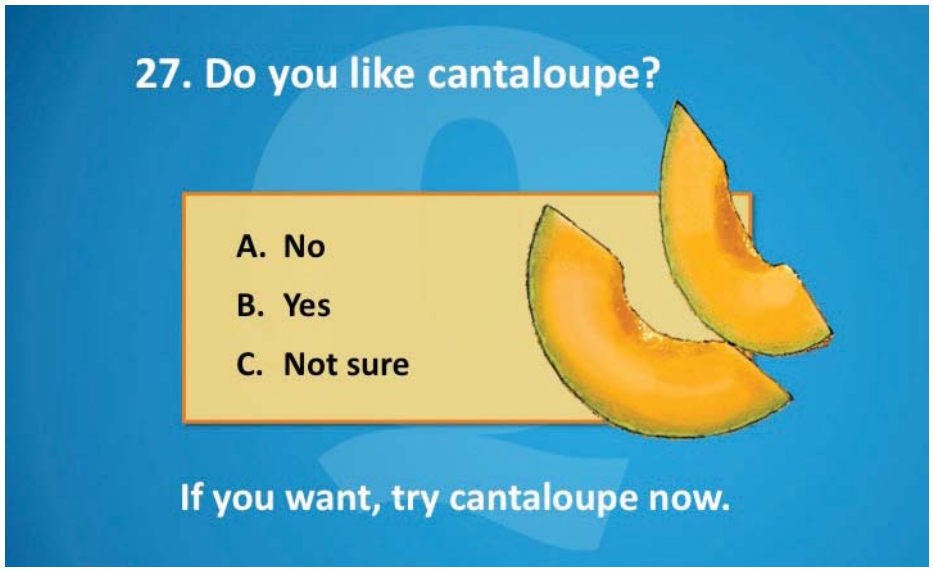

22. Which food is not in the Fruit Group?
A. Pepper
B. Strawberries
C. Pineapple
D. Cantaloupe

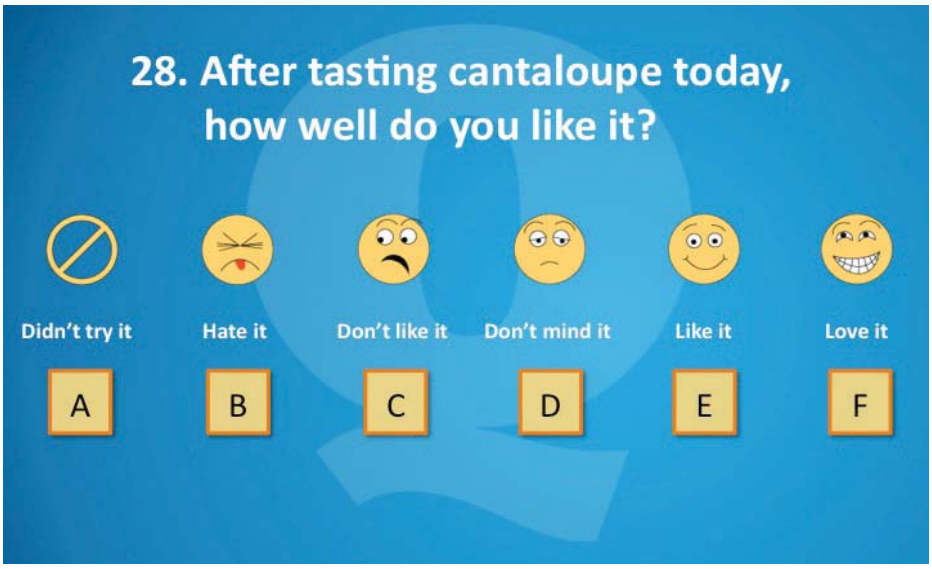
23. Which food is not in the Meat, Beans and Milk Group?
A. Eggs
B. Tortillas
C. Yogurt
D. Nuts

24. Do you like blueberries?
A. No
B. Yes
C. Not sure
If you want, try a blueberry now.

25. After tasting a blueberry today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F

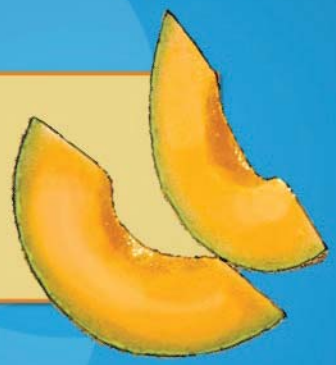

26. The next time a blueberry is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days


27. Do you like cantaloupe?
A. No
B. Yes
C. Not sure
If you want, try cantaloupe now.


28. After tasting cantaloupe today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F

29. The next time cantaloupe is offered during school lunch, will you eat it?

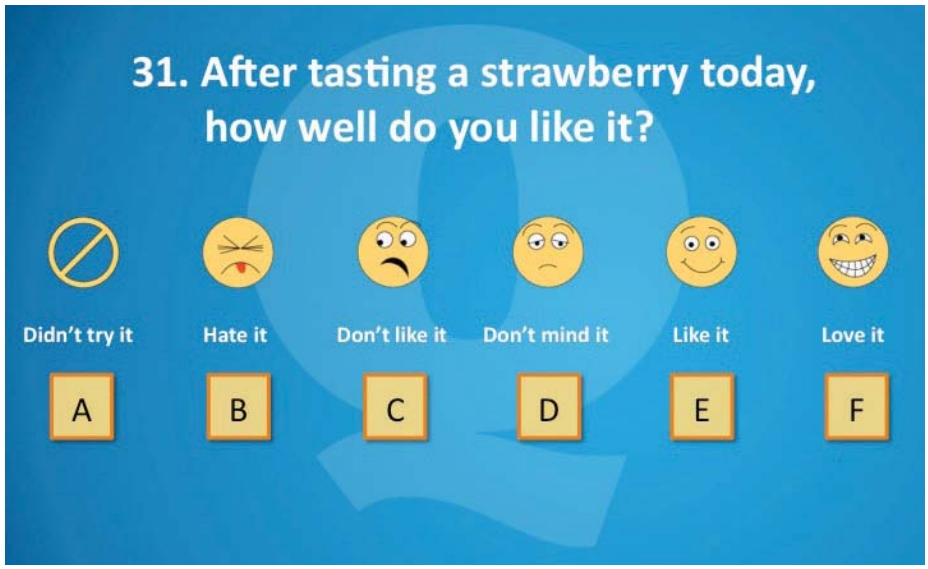
A. No
B. Yes
C. Do not eat school lunch most days

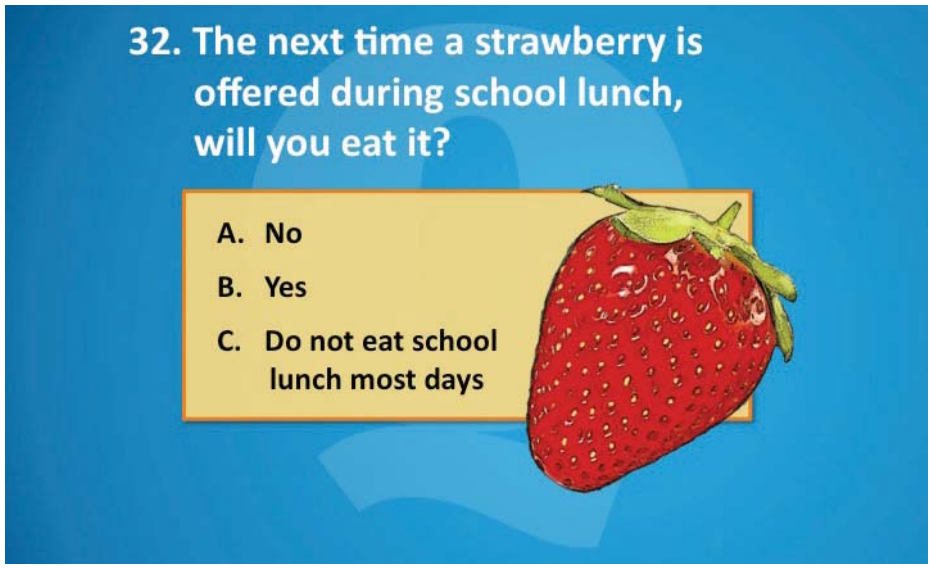


30. Do you like strawberries?

A. No
B. Yes
C. Not sure

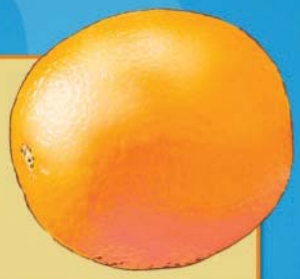
If you want, try a strawberry now.


31. After tasting a strawberry today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


32. The next time a strawberry is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

33. Do you like oranges?

A. No
B. Yes
C. Not sure



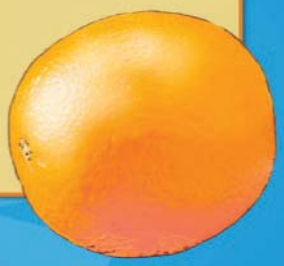
If you want, try an orange now.

34. After tasting an orange today, how well do you like it?

Didn't try it	Hate it	Don't like it	Don't mind it	Like it	Love it
A	B	C	D	E	F

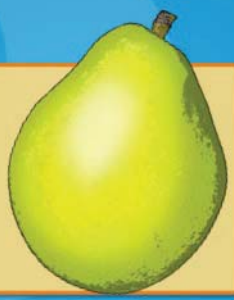
35. The next time an orange is offered during school lunch, will you eat it?

A. No
B. Yes
C. Do not eat school lunch most days



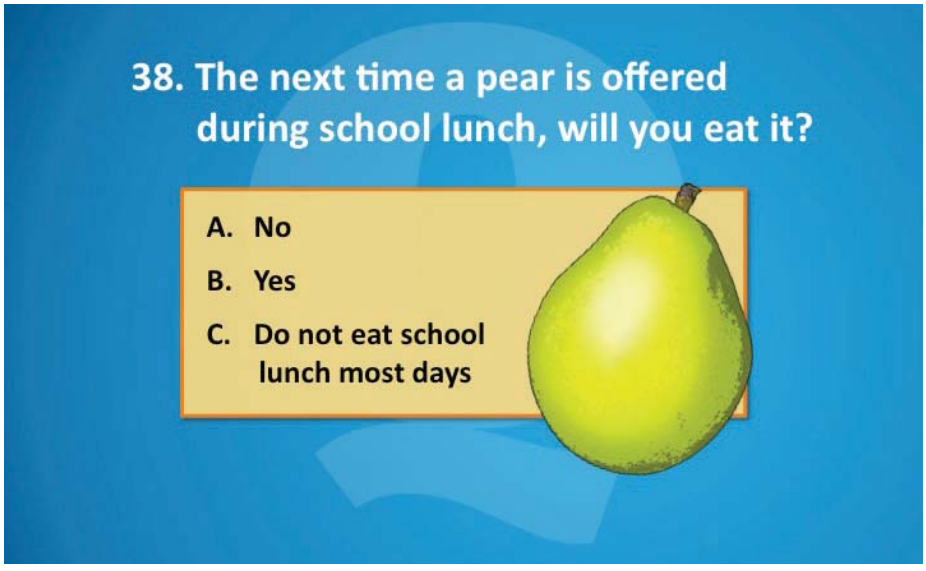
36. Do you like pears?

A. No
B. Yes
C. Not sure



If you want, try a pear now.

37. After tasting a pear today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


38. The next time a pear is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

39. Do you like pineapple?

A. No
B. Yes
C. Not sure

If you want, try pineapple now.

40. After tasting pineapple today, how well do you like it?

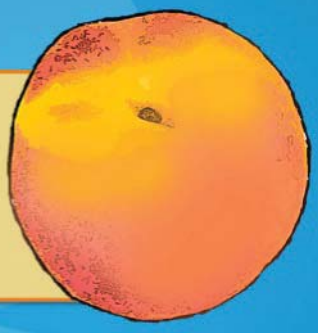
Didn't try it	Hate it	Don't like it	Don't mind it	Like it	Love it
A	B	C	D	E	F

41. The next time pineapple is offered during school lunch, will you eat it?

A. No
B. Yes
C. Do not eat school lunch most days

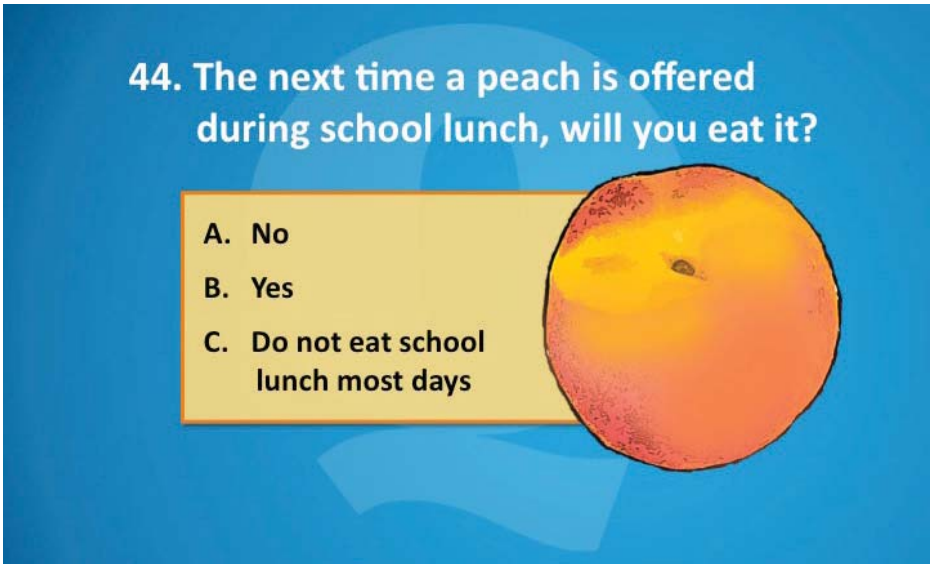
42. Do you like peaches?

A. No
B. Yes
C. Not sure



If you want, try a peach now.

43. After tasting a peach today, how well do you like it?
Didn't try it
Hate it
Don't like it
Don't mind it
Like it
Love it
A
B
C
D
E
F


44. The next time a peach is offered during school lunch, will you eat it?
A. No
B. Yes
C. Do not eat school lunch most days

BODY QUEST

"Body Quest: Food of the Warrior Challenge" is an assessment tool and one part of an evaluation used in conjunction with the *Body Quest: Food of the Warrior* curriculum. Body Quest is a comprehensive program for elementary youth with the goals of promoting fruits and vegetables, physical activity, and sleep hygiene. This cutting-edge, interactive, learner-centered curriculum includes a Body Quest package containing a leader's guide for educators, customized card decks for youth, posters of the Body Quest anime characters, and a poster-sized Body Quest vow card for youth to sign and pledge to the Body Quest goals. Body Quest is unique in that one method used for implementation is an application developed for iPad technology. In addition to this novel technology, pencil-and-paper activities are also included.

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www.aces.edu

Food assistance helps people with little or no income buy food. To find out more, contact a county food assistance office or a county Extension office.
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Appendix C

Clicker Instructions

Body Quest

Fall 2011 – Spring 2012

Clicker Instructions

Alabama Cooperative Extension System

Alabama A&M University and Auburn University

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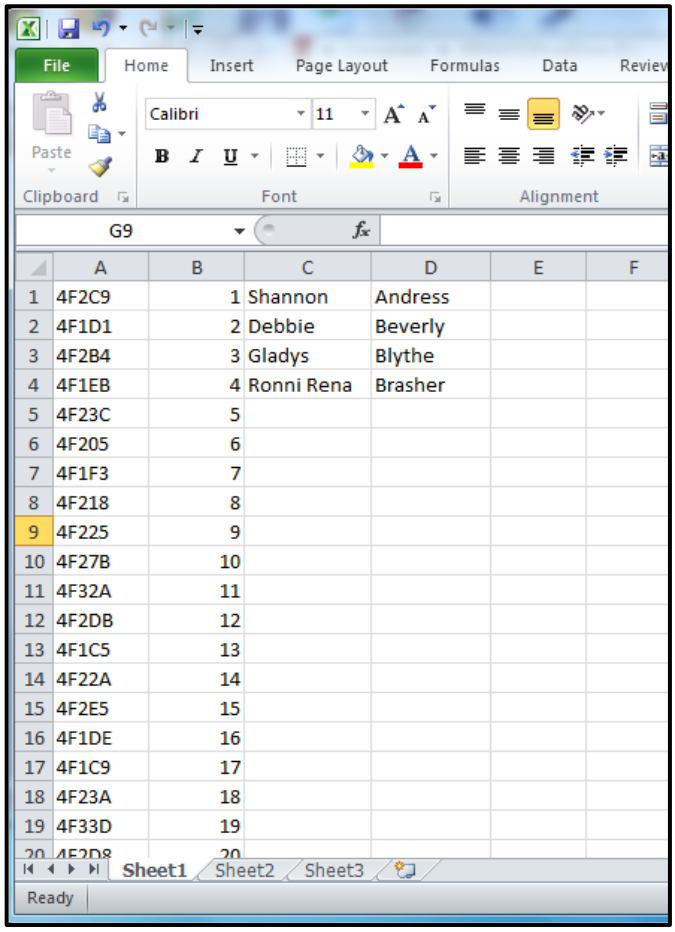
Step 1: Get a Class Roll of Students from the Teacher

NOTE: When creating your Participant List in step 2, enter student names as found on roll.

Step 2: Creating a Participant List

1. Open Internet Explorer.
2. Go to **sites.aces.edu/group/bodyquest.**
3. Under Libraries on the left, click on **Educator Materials**.
4. Double click on **Participant List Templates.**
5. Double click on the Excel spreadsheet titled: **Your county name_ ParticipantListTemplate.xlsx**. Example: Lee_ParticipantListTemplate.xlsx
6. Click on **Open in Excel** tab next to the green File tab.
7. A box will appear asking how you want to open the file. Select the **Edit** option by clicking the circle next to it.
8. Click **OK**.
9. The Excel file that appears on the screen will have two columns already filled in, column A and column B. **DO NOT TYPE IN EITHER COLUMN A OR COLUMN B.** If you do type in either column A or column B, click the blue backwards arrow in the top left corner.
10. Fill in columns C and D with the following information from your class role (Step 1):
    a. Column C = First name of student

b. Column D = Last name of student



	A	B	C	D	E	F
1	4F2C9	1	Shannon	Andress		
2	4F1D1	2	Debbie	Beverly		
3	4F2B4	3	Gladys	Blythe		
4	4F1EB	4	Ronni Rena	Brasher		
5	4F23C	5				
6	4F205	6				
7	4F1F3	7				
8	4F218	8				
9	4F225	9				
10	4F27B	10				
11	4F32A	11				
12	4F2DB	12				
13	4F1C5	13				
14	4F22A	14				
15	4F2E5	15				
16	4F1DE	16				
17	4F1C9	17				
18	4F23A	18				
19	4F33D	19				
20	4F2D8	20				

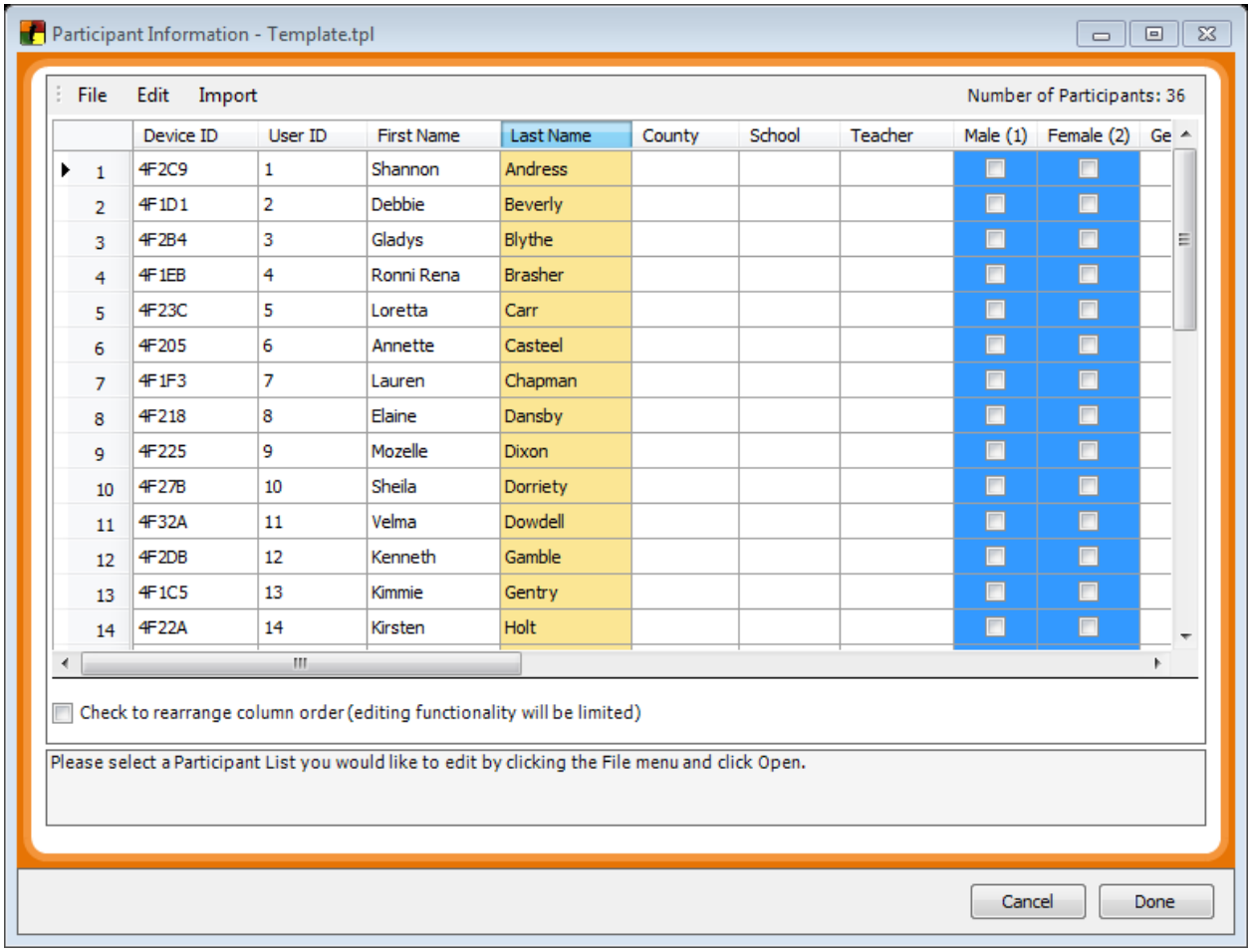
11. You might not fill up each numbered row with information on a student. Please leave any extra rows blank.
12. If you did not type in the students names in alphabetical order, then please read the rest of this step. If the students' names are in alphabetical order, please skip to step 2, number 13.
    a. In order to alphabetize your students' names, highlight all of the information in columns C and D.
    b. Click on the **Data** tab on the top of Excel, and then the sort button.
    c. Click on **Sort.**
    d. In **Sort By** field, select **Column D** from the drop down menu to alphabetize by last name.
    e. In **Sort On** field, select **Values** from the drop down menu.
    f. In **Order** field, select **A to Z** from the drop down menu.
    g. Click **OK**.

13. Save this Participant List by clicking **File** (2010) or the Round Microsoft symbol at the top left corner of the screen (2007).
14. Click **Save As**.
15. In the **Save In** field, select Desktop.
16. Double click on **Saved_ParticipantList** folder.
17. In the **File name** field, save the updated version of the Participant List as: **Educator First Initial Last Name_Teacher First Initial Last Name_Date**.
    Example: **SParmer_MJones_Feb232011**
18. After you have saved, **print the Excel spreadsheet for use in your classroom**. You will use it to call roll.
19. Minimize this document for the next step by clicking the uppermost slash **(-)** in the top right corner (**do not press the x**).
20. Close SharePoint from Internet Explorer by clicking the **red x** in the top right corner.

Step 3: Adding Demographics to the Participant List

1. Open Turning Point 2008 by double clicking the icon on your Desktop.
2. Click on **Participants.**
3. Click on **Edit a Participant List**.
4. Double click on **Templates** folder.
5. Double click the file **Template.tpl.**
6. Open Excel by clicking on the Excel tab on the bottom row of your Desktop.
7. From the Open Excel File, highlight Columns A through D, rows 1 through 30.
8. Copy the highlighted columns by choosing **Copy** from the Home tab.
9. Minimize this document for the next step by clicking the uppermost slash **(-)** in the top right corner (not the x).
10. In the **Participant Information-Template.tpl** click **Edit** and **Paste**. You should see the data from the Excel file.
11. Open Excel by clicking on the Excel tab on the bottom row of your Desktop.
12. Close Excel by clicking the **x** in the top right corner.
13. If you get a pop up box asking if you want to save the information on the Clipboard, click **No**.

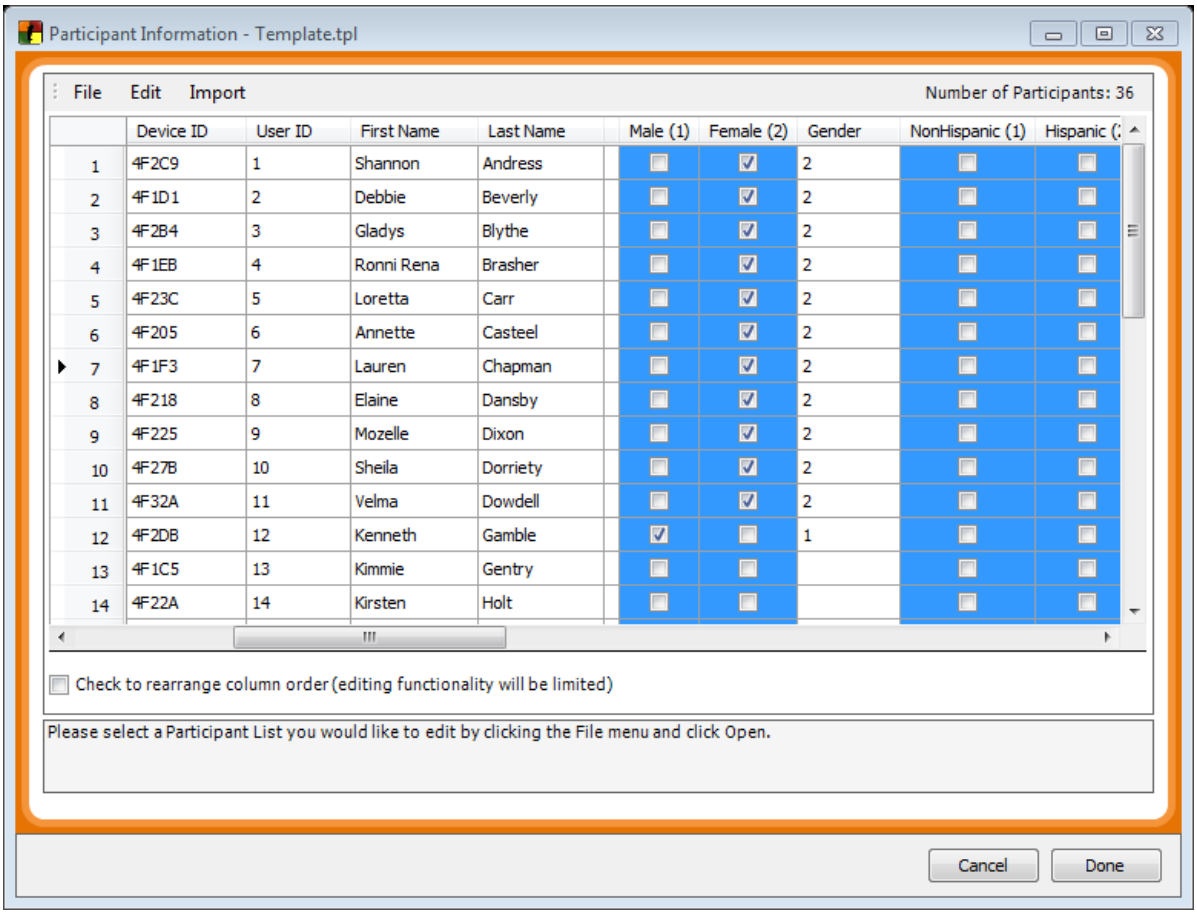
14. Highlight the Last Name Column by clicking the header **Last Name** (this will highlight all last names in yellow).



15. Click **Edit**, and **Freeze Columns**. This will allow you to fill in the rest of the demographic data while still viewing each student's name.
16. For **County**, once you have entered the information for one student, you can copy this for all other students.
    a. Place your cursor in the cell you want to copy, and copy only one column at a time.
    b. Click **Edit**
    c. Click **Copy**
    d. Highlight all cells where you want the information moved, including blank cells. *To highlight multiple cells, click in the first cell, hold shift key down, and use down arrow to highlight cells.*
    e. Click **Edit**
    f. Click **Paste**
17. For **School**, once you have entered the information for one student, you can copy this for all other students.

a. Place your cursor in the cell you want to copy, and copy only one column at a time.
b. Click **Edit**
c. Click **Copy**
d. Highlight all cells where you want the information moved, including blank cells. *To highlight multiple cells, click in the first cell, hold shift key down, and use down arrow to highlight cells.*
e. Click **Edit**
f. Click **Paste**

18. For **Teacher**, once you have entered the information for one student, you can copy this for all other students.
    a. Place your cursor in the cell you want to copy, and copy only one column at a time.
    b. Click **Edit**
    c. Click **Copy**
    d. Highlight all cells where you want the information moved, including blank cells. *To highlight multiple cells, click in the first cell, hold shift key down, and use down arrow to highlight cells.*
    e. Click **Edit**
    f. Click **Paste**
    g.
19. For **Gender**, check the appropriate gender in the blue box.
20. Click in the white cell under the **Gender** column and type in the appropriate number that matches what you checked in the blue boxes. *See image on the following page.*
    a. Male=1
    b. Female=2



21. For **Ethnicity**, check the appropriate ethnicity in the blue box.
22. Click in the white cell under the **Ethnicity** column and type the appropriate number that matches what you checked in the blue boxes.
    a. NonHispanic = 1
    b. Hispanic = 2
23. For **Race**, check the appropriate race in the blue box.
24. Click in the white cell under the **Race** column and type the appropriate number that matches what you checked in the blue boxes.
    a. White = 1
    b. Black = 2
    c. AmerInd/AlaskNat = 3
    d. Asian = 4
    e. Haw/PacIslander = 5
25. For **Grade**, check the appropriate grade in the blue box.
26. Click in the white cell under the **Grade** column and type the appropriate number that matches what you checked in the blue boxes.
    a. Grade 2 = 2

b. Grade 3 = 3
c. Grade 4 = 4

27. Unfreeze columns by clicking **Edit**, and click on Unfreeze Column(s).
28. Choose **File** and **Save As.**
29. In the **File name** field, save the updated version of the Participant List as: **Educator First Initial Last Name_Teacher First Initial Last Name_Date.**
    Example: **SParmer_MJones_Feb232011.**
30. Click **Save**
31. Click **OK**
32. Click **Done**
33. Exit Turning Point 2008 by clicking on the **x** in the top right corner.

Step 4: Distributing Clickers in the Classroom

1. Using the printed Participant List, distribute clickers to the class according to the assigned User ID (1-30).

    a. **What if someone is absent?** This clicker will not be used at this time. Do not give their clicker to another student.

    b. What if a clicker will not turn on or is not answering questions? If someone's clicker will not turn on, it's okay. There are extra clickers in each box. For a student who needs a clicker, give them the next available clicker and proceed with assessment.

Step 5: Setting Up ResponseCard AnyWhere Channel

Turning Technologies

1-866-746-3015
www.TurningTechnologies.com

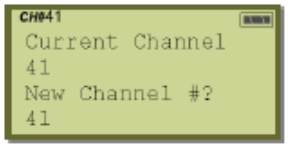
Section 1 – Before You Begin

Before you poll your audience, be sure to verify the Radio Frequency (RF) Channel that your ResponseCard AnyWhere is programmed to. RF ResponseCards need to be programmed to the same channel as the ResponseCard Anywhere.

Note: If multiple people are using ResponseCard AnyWhere you will want to make sure that each device is set to a different channel, otherwise you may experience interference.

To View/Change the RF Channel:

1. Press **MENU/OK**
2. Press the **DOWN Arrow** until "Change Channel" is highlighted
3. Press **MENU/OK**
4. Your screen will display the following:



5. Use the **UP Arrow** to scroll up to channel number 82, alternately use the **DOWN Arrow** to scroll down to channel number 1
6. Once you have selected the desired RF Channel press **MENU/OK** to accept the change
7. Your screen will display the following:

Created on 5/7/2010 9:11:00 AM

Turning Technologies

1-866-746-3015
www.TurningTechnologies.com

To Program the RF Channel on the RF ResponseCards:

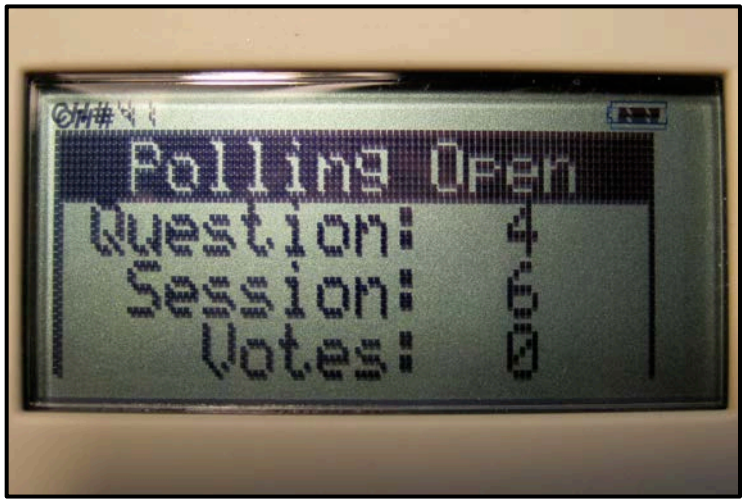
1. Press and release the GO button (the light will flash red and green)
2. Enter the **2-digit channel number** (ex. for channel 41 enter 4, then 1 after each button press the amber light will flash)
3. Press and release the GO button again to accept the new channel number
4. You will see a **green light** to confirm the change was accepted

Created on 5/7/2010 9:11:00 AM

Step 6: Using ResponseCard AnyWhere and Clickers in the Classroom

1. On the ResponseCard AnyWhere, press **MENU/OK**. The home screen will open up.
2. Press **UP Arrow** or **DOWN Arrow** until **New Session** is highlighted. Press **MENU/OK**.
3. To begin a New Session, press **UP Arrow** to select yes.
4. Record your current session number on your Participant List.

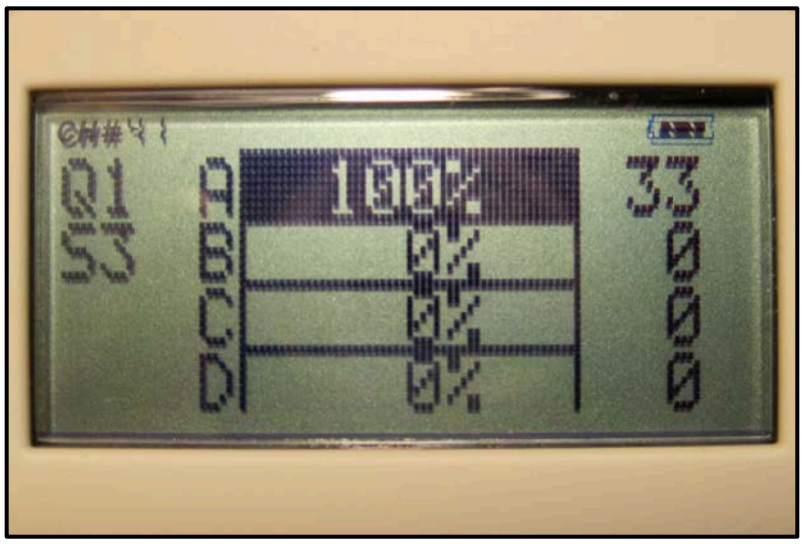
   Note: The current session number will disappear quickly. If you do not have a chance to write it down before it disappears, then as you poll each question the session number will be visible and you can record it then. See image below.

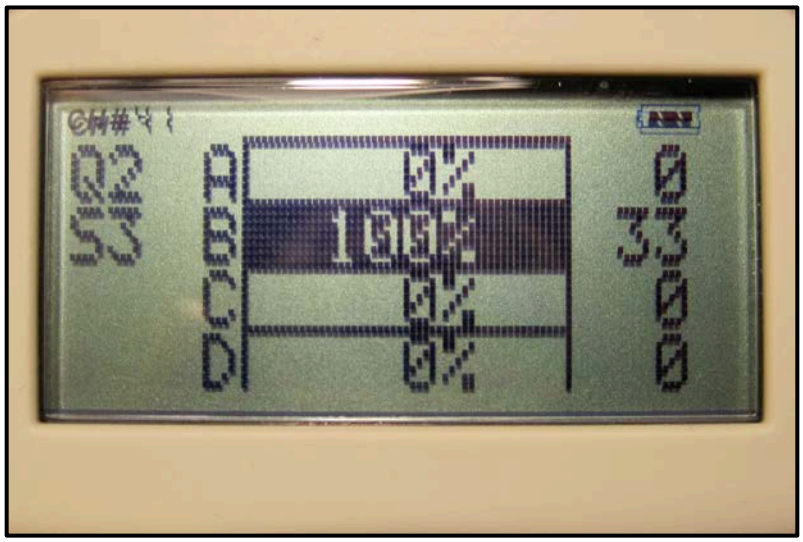


5. Pass out student booklet, *BQ: Food of the Warrior Challenge* or Tasting Sheets.
6. Read questions aloud so that students can respond to each question through clicker polls.
7. Read question 1. To begin polling, press **MENU/OK** once **Start Polling** option has been highlighted.

   *Once polling has opened, your screen will say **Polling Open**, and you will watch the number increase next to **Votes** as students click in.*
8. Once all students have answered, push the **MENU/OK** button to end polling.
9. You will see the results from the question listed on the screen.

   Important Note: For all assessments, the first two questions must be answered identically by all students (100%). These first two questions correspond to the assessment number. If they are not identical, you will have to delete the question, and begin polling again. See figures below:





a. To delete a question, begin from home screen.
b. Press the **UP Arrow** or **DOWN Arrow** until the option **Delete Question** is highlighted.
c. Press the **MENU/OK** button.
d. Delete the last question by pressing the **UP Arrow**
e. Confirm by pressing the **UP Arrow** again to select choice Yes.
f. You will return to the home screen. Start polling again.

10. Press **MENU/OK** to return to the home screen. You will now be ready to poll the next question.
11. To begin polling again for the next question, repeat step 5 numbers 5-8.
12. The Pres and Post assessments are conducted in two parts each. Part 1 is questions 1-53. Part 2 is questions 54-109. Each tasting assessment consists of 18 questions.

Note: Remember the first two questions in each assessment must have 100% same answer.

13. After polling has finished, collect the clickers and student booklets.
14. Your ResponseCard AnyWhere device and clickers will automatically turn off.
    To begin a new session in a new classroom, repeat beginning with step 5, number 1. Make sure that each time you begin a new polling session in the classroom, you select a new Session in the ResponseCard AnyWhere, and record the Session number on the Participant List.

NOTE: If you have to put data on your computer very quickly so that you can delete it from your clicker and make room for collecting responses from other classes, please see Appendix A and follow the directions there.

Step 7: Retrieving Session and Import Participant List:

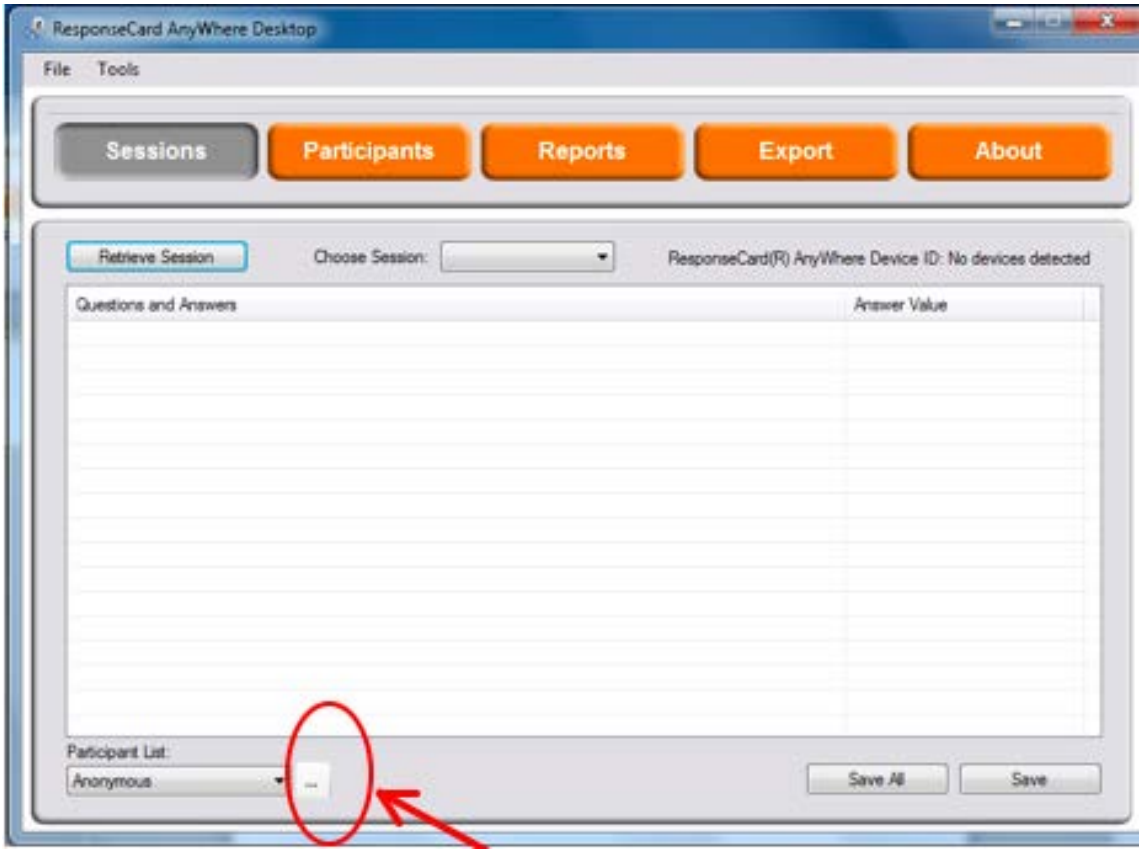
Option 1: *When retrieving session and importing participant list at the office after classes are complete.*

Option 2: *When retrieving session and importing participant list between classes at the school.*

OPTION 1

1. Connect your ResponseCard AnyWhere to your computer through the USB cable.
   ***Note:** If you have a Windows 7 machine and need to use Windows XP mode to access ResponseCard AnyWhere Desktop, you may need to attach the USB drive. To do so, once Windows XP mode has started, click the USB drop down box at the top center of the screen, and select the USB drive that you want to attach by clicking on it.*
2. Open ResponseCard AnyWhere Desktop by double clicking the Icon on your desktop.
3. Click **Retrieve Session**
4. In **Choose Session** field, use drop down menu to click on appropriate session.
5. To retrieve your Participant List:
   a. **If you have previously used a particular Participant List**, click on the **Participant List** drop down menu and choose the correct list.

b. **If this is the first time you are using a particular Participant List**, do the following:
    i. Click the box with the three dots located in the lower left corner under **Participant List**. You now will begin to import the correct Participant List. *See image below.*



    ii. From the **Look In** drop down menu, select **My Documents**.
    iii. Double click **TurningPoint** folder.
    iv. Double click **Participants** folder.
    v. Double click the appropriate file name. The file will end with **.tpl**
    vi. **In the Participant List drop down menu, choose the Participant List you just imported.**

6. Click **Save** on the bottom right hand corner of the software.
7. Double click the folder **2011-2012.**
8. For **The Challenge and Tasting Assessments**, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Assessment Name_Date**. Example:
    a. Educator First Initial Last Name: SParmer
    b. Teacher First Initial Last Name: MJones
    c. Assessment Name:

i. Pre1 = Pre Assessment First Booklet
ii. Pre2 = Pre Assessment Second Booklet
iii. Post1 = Post Assessment First Booklet
iv. Post2 = Post Assessment Second Booklet
v. Tas51 = Tasting Sheet 51
vi. Tas52 = Tasting Sheet 52
vii. Tas53 = Tasting Sheet 53
viii. Tas54 = Tasting Sheet 54
ix. Tas55 = Tasting Sheet 55
x. Tas56 = Tasting Sheet 56
xi. Tas57 = Tasting Sheet 57
xii. Tas58 = Tasting Sheet 58
xiii. Tas59 = Tasting Sheet 59
xiv. Tas61 = Tasting Sheet 61
xv. Tas62 = Tasting Sheet 62
xvi. Tas63 = Tasting Sheet 63
xvii. Tas64 = Tasting Sheet 64

d. Date: Date in which the assessment occurred.
e. The file will have the .tpz extension.

9. For the **Technology Survey pre-assessment** file, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PreTechSurvey**.
   Example: SParmer_MJones_Tech_PreTechSurvey
10. For the **Technology Survey post-assessment** file, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PostTechSurvey.**
    Example: SParmer_MJones_PP_PostTechSurvey
    Class Type = **Tech** (iPad class), **PP** (pencil-and-paper class) or **Class** (control class)
11. Click **Save**
12. Repeat Step 7 numbers 4 through 9 for each remaining session on your ResponseCard AnyWhere until all sessions have been saved.
13. Once all sessions have been saved, close ResponseCard AnyWhere Desktop by clicking on the **red x** in the top right corner.

OPTION 2

Part 1: Help! I have just completed two classes and my receiver is now full. I have to quickly put data on my computer so that I can free up space on my receiver in order to collect more responses from students! What do I do?

1. Connect your ResponseCard AnyWhere to your computer through the USB cable.

***Note:** If you have a Windows 7 machine and need to use Windows XP mode to access ResponseCard AnyWhere Desktop, you may need to attach the USB drive. To do so, once Windows XP mode has started, click the USB drop down box at the top center of the screen, and select the USB drive that you want to attach by clicking on it.*

2. Open ResponseCard AnyWhere Desktop by double clicking the Icon on your desktop.
3. Click **Retrieve Session.**
4. In **Choose Session** field, use drop down menu to click on appropriate session.
5. Click the drop down arrow in the lower left hand corner under **Participant List** and select the option **Auto.**
6. Click **Save.**
7. Double click the folder **2011-2012.**
8. For **The Challenge and Tasting Assessments**, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Assessment Name_Date.** Example:
    a. Educator First Initial Last Name: SParmer
    b. Teacher First Initial Last Name: MJones
    c. Assessment Name:
        i. Pre1 = Pre Assessment First Booklet
        ii. Pre2 = Pre Assessment Second Booklet
        iii. Post1 = Post Assessment First Booklet
        iv. Post2 = Post Assessment Second Booklet
        v. Tas51 = Tasting Sheet 51
        vi. Tas52 = Tasting Sheet 52
        vii. Tas53 = Tasting Sheet 53
        viii. Tas54 = Tasting Sheet 54
        ix. Tas55 = Tasting Sheet 55
        x. Tas56 = Tasting Sheet 56
        xi. Tas57 = Tasting Sheet 57
        xii. Tas58 = Tasting Sheet 58
        xiii. Tas59 = Tasting Sheet 59
        xiv. Tas61 = Tasting Sheet 61
        xv. Tas62 = Tasting Sheet 62
        xvi. Tas63 = Tasting Sheet 63
        xvii. Tas64 = Tasting Sheet 64
    d. Date: Date in which the assessment occurred.
    e. The file will have the .tpz extension.
9. For the **Technology Survey pre-assessment** file, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PreTechSurvey**.
   Example: SParmer_MJones_Tech_PreTechSurvey

10. For the **Technology Survey post-assessment** file, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PostTechSurvey.**
    Example: SParmer_MJones_PP_PostTechSurvey
    Class Type = **Tech** (iPad class), **PP** (pencil-and-paper class) or **Class** (control class)
11. Click **Save.**
12. Repeat numbers 4 through 9 for each remaining session on your ResponseCard AnyWhere until all sessions have been saved.
13. Once all sessions have been saved, close ResponseCard AnyWhere Desktop by clicking on the red x in the top right corner.

Part 2: Attaching a Participant List from the situation in Part 1.

1. Open Turning Point 2008 by double clicking the icon on your desktop.
2. Click **Continue Prior Session** icon in the upper left hand corner of the Turning Point 2008 options bar.
3. In the Look In field, select **Desktop.**
4. Double click the folder **My Documents.**
5. Double click the folder **ResponseCard AnyWhere Desktop.**
6. Double click the folder **Sessions.**
7. Double click the folder **2011 – 2012.**
8. From 2011-2012, select the correct session that you want to attach a participant list to.
9. Click **Open**. A blank screen will appear.
10. Click **Insert Slide** icon, and choose the option **Vertical Slide.**
11. On the right hand side in the TurningPoint 2008 box under **Participant List,** use the drop down arrow to select the participant list that you wish to attach to this specific data set.
12. Click **Save Session** icon in the upper left hand corner of the Turning Point 2008 options bar.
13. In the Save In field, select **My Documents.**
14. Double click the folder **ResponseCard AnyWhere Desktop.**
15. Double click the folder **Sessions.**
16. Double click the folder **2011 – 2012.**
17. For **The Challenge and Tasting Assessments**, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Assessment Name_Date.** Example:
    a. Educator First Initial Last Name: SParmer
    b. Teacher First Initial Last Name: MJones
    c. Assessment Name:
        i. Pre1 = Pre Assessment First Booklet
        ii. Pre2 = Pre Assessment Second Booklet
        iii. Post1 = Post Assessment First Booklet

iv. Post2 = Post Assessment Second Booklet
v. Tas51 = Tasting Sheet 51
vi. Tas52 = Tasting Sheet 52
vii. Tas53 = Tasting Sheet 53
viii. Tas54 = Tasting Sheet 54
ix. Tas55 = Tasting Sheet 55
x. Tas56 = Tasting Sheet 56
xi. Tas57 = Tasting Sheet 57
xii. Tas58 = Tasting Sheet 58
xiii. Tas59 = Tasting Sheet 59
xiv. Tas61 = Tasting Sheet 61
xv. Tas62 = Tasting Sheet 62
xvi. Tas63 = Tasting Sheet 63
xvii. Tas64 = Tasting Sheet 64

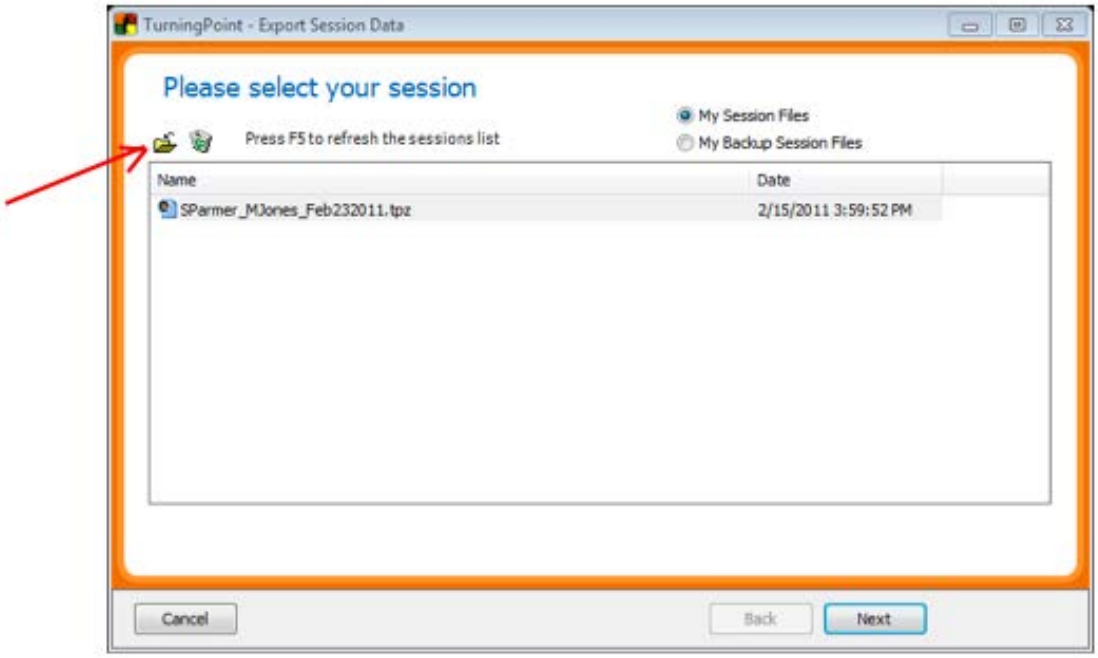
d. Date: Date in which the assessment occurred.
e. The file will have the .tpz extension

18. For the **Technology Survey pre-assessment** file, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PreTechSurvey**.
    Example: SParmer_MJones_Tech_PreTechSurvey
19. For the **Technology Survey post-assessment** file, name the file: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PostTechSurvey.**
    Example: SParmer_MJones_PP_PostTechSurvey
    Class Type = **Tech** (iPad class), **PP** (pencil-and-paper class) or **Class** (control class)
20. Click **Save.**
21. A pop up box will appear asking if you want to replace the existing file. Click **Yes.**
22. **You may now resume the directions for exporting to Auburn University starting with Step 8.**

*Note: If you decide to close Turning Point 2008 before exporting to Auburn University (Step 8), then a pop up box will appear asking if you want to save changes to the Presentation. Click **Don't Save.***

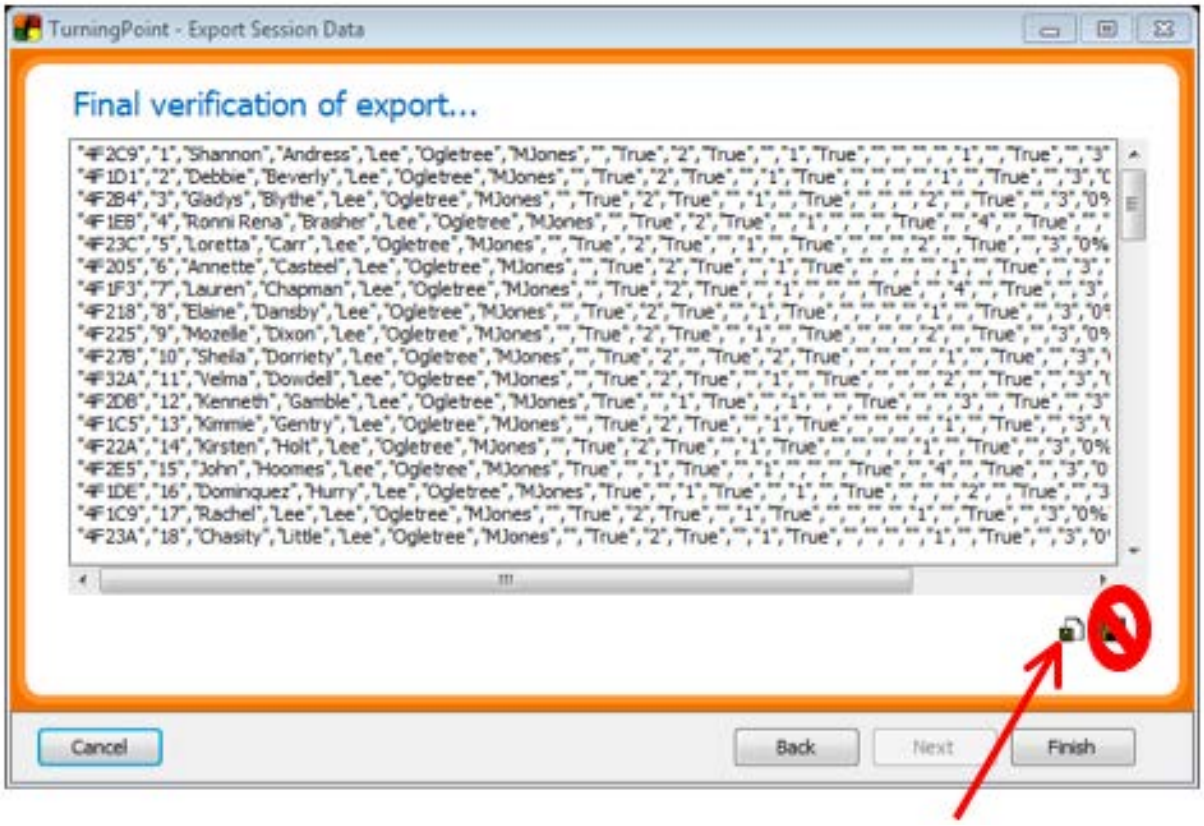
Step 8: Exporting Data to Auburn University

1. Open Turning Point 2008 by double clicking the icon on your desktop.
2. Click **Tools** icon.
3. From the **Tools** drop down menu, **Session Management**, then **Export Session Data**.
4. To load your previously saved session, click on the yellow folder icon with the arrow above it on the top left corner of the window. *See image below.*



5. In the **Look In** field, select Desktop.
6. Double click the folder **My Documents.**
7. Double click the folder **ResponseCard AnyWhere Desktop.**
8. Double click the folder **Sessions.**
9. Double click the folder **2011-2012.**
10. From the **2011-2012** folder, select the correct session file by double clicking. It will appear highlighted in the Export Session window.
11. Click **Next.**
12. Uncheck the options **Questions and Answers** and **Scores**.
13. Click **Next.**
14. Select the option **Do Not Show Any Answers.**
15. At the top of the window, click the **Responses** tab.

16. Select **Show results Vertically**
17. Click **Next**
18. Click **Next**
19. Click the icon with the disk and the piece of paper. **DO NOT CLICK THE FLOPPY**. **See image below.**



20. In **Save In** drop down, choose **Desktop.**
21. Double click **Export_Sessions** Folder.
22. For **The Challenge and the Tasting** files, in the **File Name** field, save files using this format: **SParmer_MJones_Pre1_Feb232011**
23. In the **File Name** field, save the **Technology Survey** files using this format:
24. For the **Technology Survey pre-assessment** file, in the **File Name** field, save files using this format: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PreTechSurvey**.
    Example: SParmer_MJones_Tech_PreTechSurvey
25. For the **Technology Survey post-assessment** file, in the **File Name** field, save files using this format: **Educator First Initial Last Name_Teacher First Initial Last Name_Class Type_PostTechSurvey.**
    Example: SParmer_MJones_PP_PostTechSurvey

Class Type = **Tech** (iPad class), **PP** (pencil-and-paper class) or **Class** (control class)

26. Click **Save**
27. Click **OK**
28. Click **Finish**
29. Repeat Step 8 numbers 2-25 for all remaining sessions.
30. Close TurningPoint 2008 by clicking the **x** in the top right corner.

Step 9: Putting Data on SharePoint

1. Go to Internet Explorer.
2. Go to **sites.aces.edu/group/bodyquest.**
3. Double Click on **Incoming BQ Clicker Data.**
4. Upload Files
    a. **If you have multiple files to upload:**
        i. Click **Add Document** in the middle of the screen. The **Add Document** option has a **green** plus sign next to it.
        ii. Click **Upload Multiple Files**
        iii. Click the option **Browse for files instead**
        iv. In the Look in field, select Desktop
        v. Double click the folder **Export Sessions**
        vi. Hold down the **Ctrl** key on your keyboard, and with the **Ctrl** key pressed down, use your mouse to click on each file that you want to upload.
        vii. Click **Open**
        viii. Click **Ok**
        ix. Click **Done**
    b. **If you have a single file to upload:**
        i. Click **Add Document** in the middle of the screen. The **Add Document** option has a **green** plus sign next to it.
        ii. Click **Browse**
        iii. In the **Look in** dropdown box, select **Desktop**
        iv. Double Click on the **Export_Sessions** folder.
        v. Double click the file that you want to open.
        vi. Click **OK**
5. Close Internet Explorer by clicking on the **red x** in the upper right corner.
6. After you have uploaded the file to SharePoint, you will get an e-mail confirming the upload. The next time you go to SharePoint to upload a file, it is normal if you do not see any of your previously uploaded files in SharePoint.

Step 10: How to Delete Sessions

*Note: You will delete sessions from your ResponseCard AnyWhere **ONLY AFTER** the data has been exported to SharePoint.*

1. On your ResponseCard AnyWhere, press **MENU/OK**
2. Press the **UP Arrow** or **DOWN Arrow** until **Delete Questions** is highlighted.
3. Press **MENU/OK**
4. Press **DOWN Arrow** to Delete All.
5. Press **UP Arrow** to choose yes.

Authors: Sondra M. Parmer, PhD, NEP Project Manager, Sarah M. Smith, NEP Evaluation Assistant, Barb Struempler, PhD, Professor/ Nutritionist, Alabama Cooperative Extension System, Auburn University (2/2011).

Food assistance helps people with little or no income buy food. To find out more, contact a county food assistance office or a county Extension office. These materials are funded by the Alabama Cooperative Extension System and the Alabama Department of Human Resources, equal opportunity providers and employers.

Appendix D

All About Students

All About Students

Directions: Complete this information after conducting a series of nutrition classes in NEP. This information needs to be entered into the Nutrition Evaluation spread sheet on the S: drive. Retain this form in county files.

School name _____

Teacher name _____

Grade of students _____

Free lunch rate (%) in school _____

Which curriculum was used?

OrganWise Guys_____ Arianna's _____

Little D's _____ MyPyramid _____

Show Me Nutrition _____ Body Quest _____

Number of nutrition lessons in the series (including pre- and post-assessments)

2 to 4 lessons _____

5 to 9 lessons _____

10 or more lessons _____

Average length of class time (in minutes) for each lesson of this series _____

Number of students in classroom: _____

(This number must equal the same number of students who completed both pre- and post-assessments.)

How many students are:

Boys _____

Girls _____

Total _____

For those students having only one race, answer these two questions.

1. How many students are Hispanic/Latino _____
2. How many students are:
   - Black _____
   - White _____
   - Asian _____
   - American Indian or Alaska Native _____
   - Native Hawaiian or Other Pacific Islander _____
   - Total _____

For those students having multiple races, answer these two questions.

1. How many students are Hispanic/Latino? _____
2. How many students are:

Black AND White	_____
Black AND American Indian or Alaska Native	_____
White AND Asian	_____
White AND American Indian or Alaska Native	_____
All others of more than one race	_____
Total	_____

Date of pre-assessment _____
(MM/DD/YY)

Date of post-assessment _____
(MM/DD/YY)

NEP Educator _____