Virginia 4-H Food Challenge Curriculum Evaluation

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ABSTRACT

In 2014, 4-H agents brought the Food Challenge competition from Texas to the Virginia program as a new competition outlet for youth. With this new program comes the need to train Extension faculty, staff, and volunteers to provide adequate knowledge for youth to be successful in their competitive endeavors. Due to the competition being relatively new to the nation, a curricula specific to the competition had not been developed. This study compiled and reviewed existing 4-H healthy living curricula to determine what already-existing materials would help a team prepare for the competition. Many materials were found to be adequate at covering specific sections of the competition judging criteria, however only three were determined to meet a majority of the programming needs. The top recommended curricula were *Exploring the Food Challenge, Teen Cuisine,* and *Cooking Matters for Teens*. *Exploring the Food Challenge* covered all 12 criteria, with *Teen Cuisine* and *Cooking matters for Teens* covering 11 of the 12 criteria.

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Chapter 1: Introduction

Background and Setting

In Fairfax County, Virginia, there is a plethora of youth programming outlets; from Boy and Girl Scouts, to County Government Youth Programs, 4-H to band and sports, there is something for youth with any interest. While there are many options, each one has its pros and cons, such as location, price, and actual educational value. As identified by the citizens of Fairfax County in the 2013 Fairfax County Virginia Cooperative Extension Situation Analysis, more programming directly from the Extension office needed to be made available for youth (Bordas, Strong, & Nagurny, 2013). Promoting healthy lifestyles was also a key issue that was identified in the Situation Analysis. The Partnership for a Healthier Fairfax is also working to address the need to educate youth in proper nutrition and physical education to prevent chronic diseases. As demonstrated by this community survey, a demand exists for quality programming in the topic of healthy living for the youth of Fairfax County.

Research has shown that if youth are taught how to eat properly, they will grow with these good habits, and continue them well into adulthood (Rabe, Ohri-Vachaspati, & Scheer, 2006). Because Extension programming aims to make deep, meaningful changes that will impact someone's life, Extension educators feel it is important to work with children. Educating youth is important because they are forming their personal identity as well as their systems of belief, morals and values (Bissonnette & Contento, 2001). Since children's minds are still developing and they have not formed their opinions or deep-set bad habits, they are susceptible to change based on the information they learn. Children are also very prone to peer pressure, for both good choices and

bad (Concannon, Rafferty, & Swanson-Farmarco, 2011). When one hears the term peer pressure, most conjure images of the pressure to partake in drugs and alcohol. Peer pressure also happens in the school cafeteria. Youth are influenced by and will influence their peers to try new foods or snacks (Concannon, Rafferty, & Swanson-Farmarco, 2011). If even one kid touts a new, albeit healthy snack, other kids will want to try it. It is also a benefit to teach the youth, for they can in turn teach their parents and guardians this "new cool fact" they learned. If children are learning new things outside the home, they will inevitably bring some of that knowledge back to the home. Students have an impact on their home life after participating in educational programming. Teaching youth about healthy choices will have an influence on their household choices (Roth-Yousey, Caskey, May, & Reicks, 2007). Teaching one child can have a profound impact on an entire family. Investing in healthy living programming for youth will not only make for a better quality of life immediately for the participants, but for every dollar spent on educating the public, a savings of $10.64 can be saved in future health care costs (Rajgopal, Cox, Lambur, & Lewis, 2002). This programming will create a better life for participants for years to come.

Statement of the Problem

In 2014, Virginia 4-H introduced a new healthy living competition – 4-H Food Challenge (Texas A&M Agrilife Extension Service, 2016). Focusing on the topics of MyPlate, healthy ingredients, cost analysis, and nutrition, this competition combines cooking skills, innovation and problem solving, and public speaking skills to create a one-of-a-kind hands-on experience for youth. Initially developed by Texas 4-H, two Virginia Extension Agents attended a presentation about the competition at a national convention and implemented the competition in Virginia. With this introduction of a new competition, there was a need to develop training materials for volunteers

and staff. Within the realm of 4-H curricula, many materials exist that teach healthy living and food preparation skills. Although the competition has existed since 2010, there was no formal curriculum developed to prepare youth for the competition (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015). In 2016, a curricula was released from Texas A&M Agrilife Extension Service, but teams have been preparing by using other materials since the conception of the competition. Some of these materials are available as free resources, whereas others come at a cost, making it difficult to implement when resources are limited.

The 4-H Food Challenge competition is a direct application of the Experiential Learning Model (Kolb, 1984), allowing for youth to demonstrate the skills they have learned to prepare a dish and present what they have accomplished. With the introduction of this competition, youth now have an exciting outlet to demonstrate the skills and knowledge they have gained.

This study serves to identify healthy living topics that Virginia Cooperative Extension professionals need to address in their programming and materials that exist to ensure youth learn the nutrition, healthy living, and food preparation skills needed to succeed at the 4-H Food Challenge competition. There are many resources available, but not every resource covers all aspects of the contest judging areas. Despite Dodd, Melendez, Fancher, Clawson, and Belew (2016) having developed a new curricula for the competition, it is imperative that multiple resources be evaluated to have an assortment of options available for program implementation.

Purpose of the Project

The purpose of this project is to determine what tools exist to provide a foundation for any Extension staff or volunteer that wishes to prepare a team of youth for the 4-H Food Challenge competition. The target audience is youth aged 9-13 who reside in Fairfax County, VA.

Project Objectives

1. Identify existing materials and compile a database
2. Evaluate materials for content related to the 4-H Food Challenge competition judging criteria
3. Utilize Virginia Cooperative Extension volunteers and staff to identify curricula that best meets the competition criteria
4. Create an Extension publication to offer information to staff and volunteers to implement the 4-H Food Challenge in their Virginia locality.

Limitation of the Project

The limitations of this project exist with the number of curricula available. This project evaluated only peer-reviewed curricula that came from 4-H and Extension publication services. The decision of choosing a curriculum was determined by availability and ease of access to the materials.

Basic Assumptions

All curricula will be peer-reviewed and already be in use within Extension or 4-H programming. The curricula will target a youth audience and can be implemented by any volunteer conducting the program.

Significance of the Problem

Nutrition education is a key issue nationwide. There has been a significant increase in the demand for nutrition education programming available for youth in the past decade (Arnold & Schreiber, 2012). In the 2015 Fairfax County Public Schools Youth Survey, only 33% of Fairfax County sixth grade students and only 24% of twelfth-grade students reported eating 5-servings of fruit per day (FCPS, 2015). By creating programming to directly address the issues of youth not eating a proper diet and getting them directly involved in meal preparation, Extension educators can help increase the likelihood this statistic will improve in the next youth survey. Nutrition education has a positive cost-benefit based on the fact that future chronic long term diseases are prevented and health care costs are in turn lowered (Rajgopal, Cox, Lambur, & Lewis, 2002). By working to address these issues amongst the youth of our community, we will help the community for years to come.

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Chapter 2: Literature Review

Extension educators need to ensure that their program provides opportunities and educational experiences that will improve the community they serve. There is a need to educate the community about healthy living, and there is a need to provide high-quality, affordable, accessible, educational programming to the youth of Fairfax County. The 4-H programming model is unique and is an asset for the community, and nutrition education fits into the Experiential Learning Model. Extension programming is in the forefront when it comes to programming in nutrition and healthy eating (Arnold & Schreiber, 2012). Utilizing Virginia Cooperative Extension staff and faculty's expertise, Extension programming should have a profound impact on the community.

Since the current state of youth in the county and their habits are known, a positive solution to help address the problem can be formulated. Providing a program that is engaging to the youth participants is one challenge, but there are new 4-H programs available that appeal to a modern crowd. Utilizing the resources of 4-H, Family and Consumer Sciences, and Fairfax County Agencies and Partners, multiple possibilities for Extension programming exist. Utilizing existing partnerships broadens the abilities of organizations and extends the reach of the program wider than just one organization possibly could (Guion, 1998). When working with a diverse population such as that in Fairfax County, some subsets of the community have alliances and deep trust with certain programs and agencies. Working with partner agencies builds credibility with certain communities as they already know and trust the partners, whereas someone unknown coming in might not get support or participants to trust that they know what they are actually knowledgeable in the subject matter (Guion, 1998).

Developmental Needs of Youth

Programming can be tailored to meet the needs of the participants based on the context, the participant's age and developmental stage (Contento, 2010). Since the population of Fairfax County is over 1.1 million people, there is a large youth audience for this program, and not all participants will receive the information in the same way. By utilizing the appropriate curricula for the age, grade level, physical ability, allergies, skill level, etc. the program can have a greater impact. Since the program will utilize peer-reviewed materials that follow the 4-H Experiential Learning Model as depicted in Figure 1 (Kolb, 1984), the participants will immediately be able to apply the lessons they've learned and adapt them in their everyday lives. One advantage to 4-H is the wide age-range of participants. This provides unique challenges for Extension educators as participants can vary widely within the same program. This can be managed by limiting events to certain age levels to ensure appropriate activities are conducted.

Younger 4-H members, aged 9-13, are just beginning their major physical development, and social maturity is starting to evolve from elementary thinking (Snowman & Biehler, 2000). These youth are developing their logical thinking skills, however more abstract thoughts are difficult to conceptualize (Snowman & Biehler, 2000).

Youth between 12-13 years of age are beginning to distinguish themselves from the youngest members, but still have vast developmental differences from the older teens. These 12-13 year olds are middle school aged, which serves an incubator for a wide variety of social and physical developments. Youth are becoming socially more aware of "fitting in" and more likely the fear

of not conforming to the norm (Snowman & Biehler, 2000). These middle school aged youth need an environment that covers their basic cognitive needs while providing an atmosphere to grow and explore (Snowman & Biehler, 2000).

The oldest 4-H participants are teens aged 14 and older. This group of individuals are still youth, but they do not think of themselves that way. These teenagers are becoming leaders amongst themselves and serving as influencers in many aspects of their lives (Snowman & Biehler, 2000). This group is also the highest risk for eating disorders and adopting unhealthy habits (Snowman & Biehler, 2000), demonstrating the need to educate teens on proper nutrition and food habits.

Along with having different developmental needs, multiple intelligences exist that impact the way students learn. According to Gardner (1993), intelligence is multi-faceted with eight different types of intelligence. These intelligences are: Verbal-Linguistic, Logical-Mathematical, Visual-Spatial, Bodily-Kinesthetic, Musical, Interpersonal, Intrapersonal, and Naturalist. Gardner (1993) theorized that while people have a dominant intelligence style, they are not confined to one modality of learning and work best in multiple intelligences.

4-H Learning by Doing

Utilizing the 4-H Experiential Learning Model's hands-on approach to learning has a deep and immediate impact and effect on youth's retention of knowledge and behaviors (Kemirembe, Radhkrishna, Gurgevich, Yoder, & Ingram, 2011). The use of the Experiential Learning Model sets 4-H programming apart from other nutrition education programs (Kemirembe, Radhkrishna, Gurgevich, Yoder, & Ingram, 2011). Based on the work of Kolb (1984), Virginia 4-H uses the

five-step Experiential Learning Model (see Figure 1). This model uses five-steps to explain the cycle of experiential education: experience, share, process, generalize, and apply (Kolb, 1984).

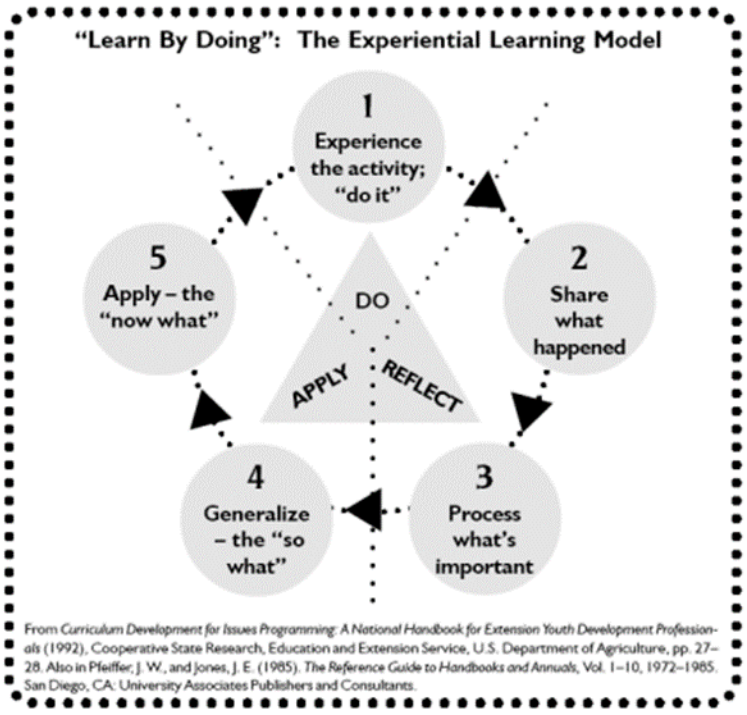

Figure 1. Experiential Learning Model based on the work of Kolb (1984).

Youth begin the cycle by having an experience – this comes in the form of actually performing an activity (Kolb, 1984). For Food Challenge preparation, youth will have to practice preparing foods, so physically measuring the flour for pancake mix would be an experience. After having an experience, the youth then share what they just experienced (Kolb, 1984). This sharing can be in the form of informal conversations or formally processing with a facilitator. After stating the experience they just had, youth then process the steps they took to get that result (Kolb, 1984). Facilitators often ask questions to assist in the process. *How did the flour get to be exactly ¼ cup? What problems did you encounter?* After they process the experience, participants then generalize what has happened (Kolb, 1984). In this step, the participants reflect on what they

have learned from the experience (Norman & Jordan, 2010). Facilitators ask questions that help youth connect the experience to other experiences they have had in their lifetime.

The final step in the process is apply, in which participants discuss how they can use what was just learned in other aspects. The youth may have just measured flour, but what if the recipe calls for brown sugar, or even milk? The facilitator would ask questions to allow the youth to apply their newfound skills to other applications that require similar skills (Norman & Jordan, 2010). By allowing youth to have a hands-on experience, such as measuring out the actual amount of sugar in a beverage, they can more easily conceptualize the information presented to them. Continuing with experiential learning, the youth will reflect upon what they have learned and process the information. Completing the process, the youth will apply the information to other areas of life. After participating in 4-H nutrition education programming, youth are more likely to make healthy decisions (Roth-Yousey, Caskey, May, & Reicks, 2007). The youth have had the opportunity to process the information differently than they would in a normal classroom setting.

Food Challenge and 4-H Competitions

Developed by Texas A&M AgriLife Extension Service in 2009, the 4-H Food Challenge competition provides an exciting opportunity for youth to exhibit what they have learned about healthy living in a fun, hands-on setting (Dodd & Womble, 2010). This competition allows for 4-H programming to appeal to audiences that would not typically participate in “traditional 4-H programming” which usually involves showing livestock (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015).

Competitive events are not foreign concepts to 4-H. Competitions such as Food Challenge provide opportunities for youth to set goals and learn new skills in order to achieve those goals as a direct application of the Experiential Learning Model (Radhakrishna, Everhart, & Sinasky, 2006). Youth strive to show their competency in a skill (Daniels, 2007), and competitions are the perfect outlet to display these skill competencies. Many 4-H competitions utilize the Danish judging system where contestants are judged on their own merit. Other 4-H competitions utilize teamwork and encourage cooperation between members. According to Midura and Glover (1999), there are three main types of competition: the military model, reward model, and partnership model. The military model has sides where each sees themselves against the other with the goal of taking out the enemy (Midura & Glover, 1999). The reward model is based on the reward of achieving a winning result where success is the only positive outcome (Midura & Glover, 1999). Partnership competitions, however, encourage self-promotion through viewing opponents as challenges to better ones skills rather than enemies (Midura & Glover, 1999). Food Challenge is a great example of partnership competitions whereas the challenge itself is the competition, and the team members each have to work on refining a skill to improve the overall performance of the group. Partnership competitions promote using the definition and mastery of skills as self-motivation to improve the team with the individual assessing what skills they brought to the table (Daniels, 2007).

Through the 4-H Food Challenge competition, youth can display their knowledge in several healthy living areas. The competition aims to have youth learn about food safety, kitchen safety, nutrition, cost analysis, and working as a team (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015). Based on the Texas 4-H Food Challenge Handbook (Texas A&M Agrilife

Extension Service, 2016), the basic elements of the competition are as follows: Youth compete in teams of 3-5 to create a dish using a pre-selected set of ingredients working without a recipe. Teams are allotted 40 minutes to conceptualize and prepare a dish, clean up the workspace, and prepare a presentation for a panel of judges. There are two sets of judges – one set observes the teams as they are cooking to see their food and kitchen safety and teamwork in action while the other set of judges receives the team presentations. The teams are judged on a rubric, and each iteration of the competition ranks the teams based on score.

Through the competition, youth have the freedom to create dishes without having to follow a strict recipe, giving them ownership in the creation of the dishes, and helping them discover new ways to incorporate healthy foods into their diet. By encouraging youth to explore what goes into the dishes they eat, and encouraging them to have a hand in preparing the meal, the youth will associate positive thoughts with healthy living rather than see it as a punishment (Bissonnette & Contento, 2001).

The 4-H Food Challenge competition allows for youth to complete the Experiential Learning Model when preparing and competing. Having direct, hands-on interactions with kitchen supplies during practice sessions allows the youth to learn what is needed for the competition, but also gives them the skills they can take home and prepare food in their own kitchen (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015). Food preparation techniques are prime examples of the experiential learning cycle. During practice sessions, teams will only encounter a handful of ingredients. Learning the proper techniques to prepare food items can be easily transferred from one medium to the next – chopping is the same on peppers or lettuce. The youth

may have only learned using one vegetable, but learning the technique, they experience the sensation of using the knife to properly chop the produce. Then they process what they have done to ensure they are using the correct technique. Once they are faced with another vegetable, they can recall the skills they learned with that initial produce, and apply it to the new medium. Youth will gain insightful knowledge and learn how to make meaningful lifestyle changes after participating in Virginia Cooperative Extension healthy living programming.

Partnerships and Volunteers

By creating programming using existing partnerships and curriculum, quality nutrition education will be available to the community. Nutrition education is in high demand to meet the growing needs from health concerns that have emerged over the past 20 years (Arnold & Schreiber, 2012). The Food Challenge competition will teach youth healthy living concepts by teaching the youth how to prepare food, read nutrition labels, and make healthy substitutions (e.g. yogurt for mayonnaise in chicken salad) when preparing recipes. This will directly tackle an issue that has previously been identified as a priority by the 2013 Fairfax County Virginia Cooperative Extension Situation Analysis (Bordas, Strong, & Nagurny, 2013), and address the youth and promoting healthy lifestyles amongst them. Currently there are a variety of nutrition education programs being offered by Virginia Cooperative Extension staff, faculty, and volunteers. These come in the form of working with a group of youth over the course of several weeks using a curricula such as *Teen Cuisine* to teach and reinforce healthy living concepts. Participants receive information from the Extension educator and usually have a recipe to prepare along with the lesson.

Partnerships are key to the success of any Extension program. Within the Virginia Cooperative Extension system, there exists four programming areas: Family and Consumer Sciences, Agriculture and Natural Resources, Community Viability, and 4-H Youth Development. At the local level, each program area recruits and trains its own volunteers, with some serving multiple program areas. There are also Master Volunteers within Agriculture and Natural Resources, and Family and Consumer Sciences. These Master Volunteers complete an intensive training course in their respective field so they are well versed in the subject matter. They are then expected to serve their respective program for a certain number of hours. Master Food Volunteers are trained with 30 hours of classroom instruction in basic nutrition, food safety, food preparation, and physical activity. These Master Volunteer programs allow for Extension programming to reach a broader audience, despite having relatively small staff numbers and limited budgets (Rohs, Stribling, & Westerfield, 2002). Volunteers who also conduct 4-H programming receive training in the Experiential Learning Model, providing them guidance to have youth involved in hands-on learning.

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Chapter 3: Methodology

Objectives of the Project

The objectives of this project are:

1. Identify existing materials and compile a database
2. Evaluate materials for content related to the 4-H Food Challenge competition judging criteria
3. Utilize Virginia Cooperative Extension volunteers to identify curricula that best meets the competition criteria
4. Create an Extension publication to offer information to staff and volunteers wishing to implement 4-H Food Challenge in their Virginia locality.

Research Design

To provide additional youth programming in the area of healthy living, existing 4-H and Extension curricula were evaluated for their content material and how applicable they are to the Food Challenge competition subject matter. This study utilized evaluation from a rubric as the primary data collection method.

Virginia Cooperative Extension volunteers were brought in to further evaluate the materials to ensure practical information is being taught, and the curriculum covers the materials properly. When organizing programming, it is imperative to include stakeholders such as volunteers at the planning table to ensure all needs are met (Cerevo & Wilson, 2006). These volunteers are supervised by and receive training from Extension professionals to conduct programming to meet local needs. The Master Food Volunteers and Family and Consumer Sciences Agent were consulted to create the rubric to ensure it aligned with the contest judging worksheet. By utilizing

the Virginia Cooperative Extension volunteers as subject matter experts, the materials were more fully vetted to ensure the competition judging criteria are adequately covered in a user-friendly format that any volunteer would be comfortable implementing them. Additional 4-H Extension staff were asked for their input on the materials.

Material Selection

Curricula was identified for review based on what was available both on-hand in the Extension office, easily found online via 4-H and Extension sources, and through 4-Hmall.org - the National 4-H Council curriculum source. When planning a program, many Extension educators or volunteers will utilize materials they already have at their disposal in the office, or those that are found online through other Extension services around the nation. All materials are peer-reviewed or official Extension publications. A total of 19 curricula were identified through these methods. Of the 19, 12 curricula were selected to be evaluated in-depth, with 7 identified as not meeting the needs of the competition.

Instrumentation

The curricula were evaluated based on a rubric, see Appendix A, created by the researcher to evaluate the subject matter covered and how closely it related to the 4-H Food Challenge competition judging criteria. Virginia Cooperative Extension volunteers were then brought in to evaluate the materials using their subject-matter expertise. In addition, other 4-H Extension staff were also asked to provide input. A total of 11 volunteers and staff were brought in to assist with the study. Interviews were conducted with the volunteers and staff after they were given the chance to review the materials.

Data Collection

Initially, each curricula was reviewed to ensure it was related to foods and nutrition. After culling the materials that did not relate appropriately, the remaining curricula was evaluated against the rubric. These curricula were evaluated firstly to determine if the criteria were in the material. If the resource only mentioned the criteria or merely contained a basic definition, without having a lesson or activity, the curricula was designated as having minimal coverage. If the resource had lessons or in-depth information on the topic, it was designated as covering the criteria. The results were compiled in a spreadsheet. Virginia Cooperative Extension volunteers and staff members evaluated materials for practicality. The volunteers and staff were brought in for their expertise in conducting 4-H programming. The volunteers and staff were asked to evaluate the 12 materials that had been evaluated in depth through the initial screening. The volunteers and staff then provided recommendations of which materials they would prefer to use if implementing this program.

The volunteer review session began with an overview of the Food Challenge competition basics, and a review of the judging sheets (Texas A&M Agrilife Extension Service, 2016), with a copy of the manual and judging sheets provided to each volunteer during the materials review. The volunteers were offered an opportunity to ask additional questions about the competition to ensure they understood the differing aspects of the program.

After reviewing the elements of the event, the volunteers were introduced to the problem identified in this study. The materials were introduced to the volunteers with the following prompt: "*You have been asked to prepare a team of 4-H'ers for the upcoming Food Challenge*

competition. They are all 9-13 years old and have limited experience with food preparation. The competition is 4 months away. Please look through these materials and identify which resource(s) you would use to prepare your team."

The volunteers were then allotted an hour to go through the materials. After the allotted time, the reviewer asked if the volunteers needed more time to look at the materials. Once the volunteers felt they had adequately reviewed the materials, the reviewer asked for their recommendations. The reviewer took note of the volunteer's top preferred resources, and asked follow-up questions. These questions were:

Why did you pick ___ as your top choice? What did it do better than the other choices? What resource did you prefer the least? What was it lacking that made you not want to use it? What supplemental resources are needed to make the less-preferred curricula more suitable for the competition preparation?

The reviewer documented the volunteer response by writing the responses as the volunteers provided their insight.

Data Analysis

The results of the curriculum evaluation were compiled via a spreadsheet. The spreadsheet tracked each material and the responses to the rubric. This information is used more as a visual representation of the evaluation of materials and no statistical analysis was conducted. The spreadsheet was used to visualize the results to identify the materials that best meet the needs of Extension educators. Volunteer responses were recorded as notes by the reviewer during an interview. These results were used in conjunction with the spreadsheet to create an order of

recommendation for the resources. The order was determined by coverage of the topics followed by recommendations by the volunteers.

Timeline and budget

The timeline of the project is as follows:

Date/Timeframe	**Activity**
January-May 2016	Project Proposal Approval
August-October 2016	Evaluation of existing materials and curriculum development
November 2016	Volunteer evaluation of materials
November 2016	Complete project report
December 2016	Project Defense

Figure 2. Timeline of the project

The budget for this study was covered through a 2016 Virginia 4-H Foundation Innovative Program Grant for $1000. This grant was used to cover the cost of purchasing materials not already owned by the Fairfax County Extension Office.

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Chapter 4: 4-H Food Challenge Competition Resource Guide[1]

Introduction to the 4-H Food Challenge Competition

The 4-H Food Challenge competition was developed as an outlet for youth participating in healthy living programming to display the skills they learned. Developed by Texas A&M AgriLife Extension Service in 2009, the 4-H Food Challenge competition provides an exciting opportunity for youth to exhibit what they have learned about healthy living in a fun, hands-on setting (Dodd & Womble, 4-H Food Challenge, 2010). This competition allows for 4-H programming to appeal to audiences that would not typically participate in "traditional 4-H programming" which usually involves showing livestock (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015). Competitions such as Food Challenge provide opportunities for youth to set goals and learn new skills in order to achieve those goals as a direct application of the Experiential Learning Model (Radhakrishna, Everhart, & Sinasky, 2006).

Through the 4-H Food Challenge competition, youth can display their knowledge in several healthy living areas. The competition aims to have youth learn about food safety, kitchen safety, nutrition, cost analysis, and working as a team (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015). Based on the Texas 4-H Food Challenge Handbook (Texas A&M Agrilife Extension Service, 2016), the basic elements of the competition are as follows: Youth compete in teams of 3-5 to create a dish using a pre-selected set of ingredients working without a recipe, and

[1] This chapter is intended for use as a stand-alone extension publication.

no prior knowledge of the selected ingredients. Teams are allotted 40 minutes to conceptualize and prepare a dish, clean up the workspace, and prepare a presentation for a panel of judges. There are two sets of judges – one set observes the teams as they are cooking to see their food and kitchen safety and teamwork in action while the other set of judges receives the team presentations. The teams are judged on a rubric, and each iteration of the competition ranks the teams based on score.

Competition Structure in Virginia

In 2014, the competition was brought to Virginia 4-H after agents attended a presentation at a national conference in 2013. Virginia 4-H follows the standards set by Texas 4-H as they are the host of the national-level competition. The rules are updated yearly and hosted on the Texas 4-H website (Texas A&M Agrilife Extension Service, 2016). The only variation from the national rules that Virginia has made is the elimination of ovens as provided competition equipment since local facilities are not equipped with multiple ovens. Units are encouraged to host competitions in their locality. There are then district level competitions for teams to compete with a larger pool of their peers. Senior teams, ages 14-19, can then compete at the state level during 4-H Congress. The winning team at the state level is invited to participate in the national competition held at the Texas State Fair.

Preparing for the Competition

With this introduction of a new competition, there was a need to develop training materials for volunteers, faculty, and staff. Many team coaches took it upon themselves to learn the competition basics and prepare the youth using whatever means they had available. Although the competition has existed since 2010, there was no formal curriculum developed to prepare youth for the competition (Dodd, Follmer-Reece, Kostina-Ritchey, & Reyna, 2015). In 2016 a curricula

was created from Texas A&M Agrilife Extension Service to meet the specific needs of training teams for the Food Challenge competition. Prior to this resource being created, teams had prepared using other materials. Within the realm of 4-H programming curricula, many materials exist that teach healthy living and food preparation skills. This resource serves as a guide to 4-H healthy living materials and how they apply to the Food Challenge judging criteria. The reviewed materials also cater to different audiences and skill levels. Despite the creation of a contest-specific curricula, the materials should still be evaluated. Because 4-H reaches a broad range of youth, there are many different ages, development levels, and skill levels of the participants. With this diverse audience, one curricula simply will not meet the needs of all participants. Having multiple resources available for educators provides a healthy variety of options to select activities that best suit the needs of one's program participants.

The judging of the competition is broken into various criteria and topics within the realm of food knowledge (see Figure 3). Resources were evaluated on these topics that relate directly to judging criteria from the Food Challenge competition. The areas of evaluation are as follows:

Judging Criteria	Description
Cooking Terminology	Teams are given higher scores if during their presentation they use proper cooking terminology.
Cost Analysis	Teams must calculate the cost of each serving as well as the total cost of the meal.
Food Safety	During the preparation phase, teams are observed for following proper food safety practices, and they must include some safety procedures the team followed in the presentation.
Healthy Ingredient Substitution	Judges often ask how the teams could modify their prepared recipe and which ingredients they could substitute

	to make it a healthier meal.
Kitchen Safety	Observation judges watch teams to ensure they are following kitchen safety procedures; the presentation should also highlight aspects of kitchen safety.
Kitchen Tools	Knowledge of equipment is paramount to properly preparing a meal, as well as being able to use the correct terminology in the presentation.
Measuring Ingredients	Youth should be able to properly measure both wet and dry ingredients to prepare recipes according to instructions. During presentations teams should include what recipe, including measurements, they used to prepare their dish.
MyPlate	The highest number of points can be earned for demonstrating knowledge of MyPlate, and having the prepared dish resemble the nutrition guide.
Nutrition Basics	Teams should be able to include basic information about nutrients someone would gain from consuming their dish. Teams are provided with a reference guide during the competition, but should have a working knowledge to know where to start.
Reading Nutrition Labels	In order to know what nutrients are provided from the components of the dish, nutrition labels are provided, and teams should know how to read them to gain the sought after information.
Recipe Practice	Allowing for teams to practice preparing a variety of dishes so when they are provided a bag of ingredients, they can start to formulate an idea of what to cook.
Serving Sizes	Preparing an appropriately sized dish is an important aspect of the competition, and teams are expects to have knowledge of proper serving sizes, and the number of servings in their dish.

Figure 3. Curricula evaluation areas, adapted from the Texas 4-H Food Challenge Rules and Guidelines Manual (Texas A&M Agrilife Extension Service, 2016).

Curriculum Evaluation

A total of 19 curricula were identified based upon their availability in hard copy, as well as online through known 4-H materials sources. 18 of the curricula are 4-H and/or Extension publications. The remaining resource, while not published by Extension, is used with 4-H programming. 12 curricula were evaluated in depth, with 7 being excluded or identified as not meeting the needs of the competition. The curricula that were identified are listed in the table below:

4-H Cooking 101, (Weese, et al., 4-H Cooking 101, 2015)	
	Description: 4-H Cooking Series, first level. Aimed at youth in grades 3-4, and those who are beginner skill-level with cooking. Learning basics of food preparation and food and kitchen safety. **Where to Purchase**: National 4-H Council Supply Service at 4HMall.org **Cost:** $9.95 (plus shipping)
4-H Cooking 201, (Weese, et al., 4-H Cooking 201, 2015)	
	Description: 4-H Cooking Series, second level. Aimed at youth in grades 5-6, and those who are beginner to intermediate skill-level with cooking. Expanding upon basic skills, covering food handling, preparation, and safety. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $9.95 (plus shipping)
4-H Cooking 301, (Weese, et al., 4-H Cooking 301, 2015)	
	Description: 4-H Cooking Series, third level. Aimed at youth in grades 7-9, and those who are intermediate to advance skill-level with cooking. Focuses on meal planning and party preparation, focuses on baking and grilling. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org

	Cost: $9.95 (plus shipping)
4-H Cooking 401, (Weese, et al., 4-H Cooking 401, 2015)	
	Description: 4-H Cooking Series, fourth level. Aimed at youth in grades 10-12, and those who are advanced skill-level with cooking. Focuses on preparing ethnic foods, and preparing foods using an oven. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost**: $9.95 (plus shipping)
Cooking Matters for Teens, (Share Our Strength, 2012)	
	Description: Teaching teens, grades 6-12, healthy living and food preparation skills to become self-sufficient in the kitchen. **Where to Purchase:** Contact your local Virginia Cooperative Extension Office **Cost:** Free
Discover 4-H Kitchen Science Clubs, (Porter, Francis, & MacArthur, 2014)	
	Description: Teaching youth of all ages scientific concepts that take place in the kitchen in six pre-planned meeting activities. **Where to Purchase:** Download via: http://utah4h.org/discover/ **Cost:** Free, however must request access to the document
Exploring the Food Challenge, (Dodd, Melendez, Fancher, Clawson, & Belew, 2016)	
	Description: Created to meet the needs of preparing for the 4-H Food Challenge competition. Has six pre-prepared lessons that assist a team of any age learn the competition essentials. **Where to Purchase:** Available for download via: http://texas4-h.tamu.edu/projects/food-nutrition/ **Cost:** Free
Food, Culture, and Reading, (Mincher, DeMarco, & Hanley, 2010)	
	Description: Nutrition education taught using connections to literature and differing cultures. Aimed at youth in grades 4-6. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $12.50 (plus shipping)

Foods with an International Flavor, (Cook, et al., 1991)	
	Description: Introduction to various cultures via cuisine. Members prepare dishes from several countries and regions to gain cultural competency. **Where to Purchase:** Unavailable, was on-hand in the Fairfax Extension Office. **Cost:** Free
Foodworks, (Barkman & Wright, Foodworks, 2002)	
	Description: Fantastic Foods curriculum series, fourth level. Youth in grades 10-12 learn food safety and science, preservation, and careers in the food industry through a variety of hands-on experiments and activities. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $3.99 – available only as a digital download
Kitchen Science for Kids, (Thonney & Farrell, 1995)	
	Description: Teaching youth ages 5-12 scientific method and inquiry using food and kitchen-based science experiments. **Where to Purchase:** Available for download via: https://ecommons.cornell.edu/handle/1813/9427 **Cost:** Free
Microwave Magic, Levels A-D, (Barkman, Wright, & Page, Microwave Magic, 2005)	
	Description: A progressive curriculum series with four differing levels of skill, ranging for youth in grades 3-4, 5-6, 7-9, and 10-12. The activities and experiments focus on preparation of foods using the microwave. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $3.99 per level – available only as a digital download
Now You're Cookin', (Maxa & Havens, 1999)	
	Description: Basic introduction to food preparation, kitchen safety, and using various kitchen utensils and equipment. Aimed at youth with beginner level cooking skills. **Where to Purchase:** Unavailable, was on-hand in the Fairfax Extension Office. **Cost:** Originally $2.00, but unavailable from original source

Science Fun with Kitchen Chemistry, (Blackford & Cochran, 2014)	
	Description: 4-H members explore the scientific method conducting experiments in the kitchen using foods and other everyday items. Aimed at beginners. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $8.95 (plus shipping)
Six Easy Bites, (Barkman & Wright, Six Easy Bites, 2002)	
	Description: Fantastic Foods curriculum series, first level. Youth in grades 3-4 learn about healthy foods, basic nutrition, food safety, and careers in the food industry through a variety of hands-on experiments and activities. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $3.99 – available only as a digital download
Tasty Tidbits, (Barkman & Wright, Tasty Tidbits, 2002)	
	Description: Fantastic Foods curriculum series, second level. Youth in grades 5-6 learn about healthy foods, food costs, food safety, and careers in the food industry through a variety of hands-on experiments and activities. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $3.99 – available only as a digital download
Teen Cuisine, (Carrington & Margheim, Teen Cuisine Leader's Guide, 2014), (Carrington & Margheim, Teen Cuisine, 2014)	
	Description: Teaching teens, grades 6-12, healthy living and food preparation skills to become self-sufficient in the kitchen through a variety of hands-on food preparation and educational activities. **Where to Purchase:** Contact your local Virginia Cooperative Extension Office **Cost:** Free
What's on Your Plate?, Units 1-4, (Craig & Alleman, 2014)	
	Description: A progressive curriculum series with four different levels. Written for youth in grades 6-9, but can be adapted for differing age level. Available as facilitator

	and youth handbooks for each level. Curricula explores science and chemistry using experiments youth can more often than not consume. Combining biology, chemistry and physics in the kitchen. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $12.95 per facilitator guide, $9.95 per youth guide
You're The Chef (Barkman & Wright, You're The Chef, 2002)	
	Description: Fantastic Foods curriculum series, third level. Youth in grades 7-9 learn about food purchasing, preservation, preparation, and careers in the food industry through a variety of hands-on experiments and activities. **Where to Purchase:** National 4-H Council Supply Service at 4HMall.org **Cost:** $3.99 – available only as a digital download

Figure 4. Table of identified cooking and nutrition resources

The materials were evaluated to determine if the subject matter covered topics that were identified on the Food Challenge judging rubrics. In order for a material to be considered to cover the criteria, firstly the curricula must have some mention of the criteria. The resources were then scrutinized for the depth of the coverage. Some resources were designated as having minimal coverage as they mentioned or defined the criteria, but did not contain a lesson to teach the subject matter. Materials were initially evaluated by the reviewer for content material. After all materials were evaluated, Virginia Cooperative Extension volunteers and 4-H staff members were asked to review the materials and give recommendations.

Resources Excluded from Further Review

The following materials were excluded from in-depth review:

Discover 4-H Kitchen Science Clubs (Porter, Francis, & MacArthur, 2014) – While this resource provided fun, hands-on activities, there was no cooking involved. Many of the activities included

aspects of food and preparing recipes, but there was no nutrition or food knowledge being conveyed, and therefore the resource was excluded from further review.

Food, Culture, and Reading (Mincher, DeMarco, & Hanley, 2010)– This resource was unique as it tied in literature and cultural competencies with foods. Unfortunately, there was not enough focus on preparing dishes and teaching nutrition through the activities. It did however have a portion of each lesson dedicated to preparing a simple recipe, as well as relating to sections MyPyramid – which has since been replaced with MyPlate making the curricula out-of-date. Food, Culture, and Reading also promoted physical activity whereas other materials did not, but this is not part of the judging criteria. There was not enough food preparation to include it in the study.

Foods with an International Flavor (Cook, et al., 1991) – This resource is a Virginia Cooperative Extension publication, however, it was mostly a list of international themed recipes. There was a lack of education outside of connecting foods to differing cultures to create competency. This publication could be used as a recipe list for practice, but not a recommended teaching resource and was not included in the study.

Science Fun with Kitchen Chemistry (Blackford & Cochran, 2014) – This was a well-organized resource that used food and kitchen products to conduct science experiments. However there was no food preparation outside of following instructions for experiments, and no nutrition, therefore it was excluded from further review.

Kitchen Science for Kids (Thonney & Farrell, 1995) – This is a curriculum that focused on scientific inquiry using foods and kitchen equipment. There was not enough material related to the competition to include it in the review.

Microwave Magic, levels A-D (Barkman, Wright, & Page, Microwave Magic, 2005) –This is an innovative series of curricula that teach youth to prepare meals using a microwave. While this is a technology that is easy for youth to use, it is not equipment that is available during the competition, therefore this series was not included in the study.

What's On Your Plate? Levels 1-4 (Craig & Alleman, 2014) – This is a newer curriculum series released from National 4-H Council that relates to healthy living topics by exploring science using foods and kitchen chemistry. The experiments, while engaging and can be used at any age level, unfortunately are lacking in content that is directly applicable to the Food Challenge competition. Therefore this series was excluded from the extensive review.

Results

The materials that were determined to be relevant to the competition upon initial review were then evaluated for their coverage of competition judging criteria. Figure 5 below is the results of the materials review.

Curricula	Cooking Terminology	Cost Analysis	Food Safety	Healthy Substitution	Kitchen Safety	Kitchen Tools	Measuring Ingredients	MyPlate	Nutrition Basics	Reading Nutrition Labels	Recipe Practice	Serving Sizes

Exploring the Food Challenge	X	X	X	X	X	X	X	X	X	X	X	X
Teen Cuisine	X		X	X	X	X	X	X	X	X	X	X
Cooking Matters for Teens	X	X	X	X	X	X	X	X	X	X	X	
Six Easy Bites	X	X	X		X		X		X	X	X	
4-H Cooking 101	X		X		X	X	X	X	X		X	
4-H Cooking 201	X		X		X	X		X	X	X	X	
Now You're Cookin'	X		X		X	X	X		X	X	*	X
4-H Cooking 301	X		X		X	X		X	X		X	
4-H Cooking 401	X		X		X	X		X	X		X	
Tasty Tidbits	X	X	X	X			X		X		X	
Foodworks	X	X	X		*		X		X		X	*
You're The Chef	X		X		X				*		X	X

*Figure 5. Materials and the topics they cover, organized by recommendation, X = Sufficient coverage, * = Minimal coverage, Blank = no coverage. Curricula with an italicized name were identified by volunteers and staff as the recommended resources to use when preparing a team.*

Recommendations:

Volunteers and staff identified the same resources as the most complete and ready to use for competition preparation. *Teen Cuisine*, *Exploring the Food Challenge*, and *Cooking Matters for Teens* were overwhelmingly selected as the materials that best covered the competition subject areas. *Exploring the Food Challenge* was created specifically to meet the needs of the competition and covers all identified judging criteria. Volunteers suggested this resource was comprehensive and needed no supplemental materials to enhance competition preparation. Despite having this resource created for the competition, volunteers and staff preferred the *Teen Cuisine* and *Cooking Matters for Teens* curricula due to the availability of a facilitators guide with the program materials. *Exploring the Food Challenge* does not have a dedicated facilitator's manual or separate youth guide and only exists as one resource. Both *Teen Cuisine* and *Cooking Matters for Teens* have both a facilitators' guide and companion youth manual. These facilitator's guides would allow for any volunteer to lead the programming as they could be used as a script for implementation. Volunteers also recognized that both *Teen Cuisine* and *Cooking*

Matters for Teens are directed at a teen audience, and the activities and information were suitable to use with younger teams.

Exploring the Food Challenge covers all competition aspects, whereas all other curricula are missing at least one judging area. This is an advantage of the resource being tailored directly for the competition. Volunteers and staff indicated that despite missing a section dedicated to cost analysis, *Teen Cuisine* still provided a more user-friendly curricula both for the facilitator and the youth. One volunteer noted that cost analysis of a meal can easily be added to a lesson and does not necessarily need an entire lesson dedicated to the topic. The other top resource, *Cooking Matters for Teens* was noted by the volunteers to be very similar to *Teen Cuisine* in structure and activities. *Cooking Matters for Teens* had a lesson on meal costs, but was missing a lesson on proper serving sizes for meals. Volunteers noted that while they liked the *Cooking Matters for Teens* curriculum, *Teen Cuisine* had an edge in content. One volunteer stated that she could more easily add a simple cost calculating activity to any lesson she taught, but serving sizes would be more challenging to modify a lesson to include.

Another consideration for implementation is the application of the Experiential Learning Model. Within the top three, only two come from Extension sources, whereas *Cooking Matters for Teens* comes from the Share Our Strength Foundation. Despite being an "outside resource," *Cooking Matters for Teens* is a program that is widely implemented within Virginia Cooperative Extension programming, primarily through the Food and Nutrition Program. While it does not explicitly mention the Experiential Learning Model, *Cooking Matters for Teens* utilizes the core principles established by Kolb (1984) of having youth actively involved in the preparation of

foods and learning from the experience. *Exploring the Food Challenge* and *Teen Cuisine* were created using the Experiential Learning Model as the framework for each curricula, ensuring that youth had the chance to complete the processing with each lesson. All three of the top resources heavily utilize hands-on learning to reinforce concepts covering a wide variety of topics.

Access is also a consideration when choosing resources. While *Teen Cuisine* was preferred, volunteers have easier access to *Exploring the Food Challenge*. Agents and volunteers would have to order *Teen Cuisine* or *Cooking Matters for Teens* through their Extension Agent, whereas *Exploring the Food Challenge* is available as a free download online. Both *Cooking Matters for Teens* and *Teen Cuisine* are primarily used with the Food and Nutrition Program (FNP). Program staff with FNP teach nutrition and healthy living skills to limited-resource individuals. *Teen Cuisine* is primarily taught by the FNP program staff to teens from limited-resource families. While this is their primary delivery method within Virginia, the program can be implemented with any audience. The limitation exists where FNP program staff would not be able to assist with the implementation due to grant funding restrictions. Anyone wishing to implement the program is required by Virginia Cooperative Extension to complete a course from a certified trainer. However, after completing the training session, anyone would be able to implement *Teen Cuisine* with any audience.

Other resources evaluated were sufficient in their content material, but volunteers indicated they would be less effective at preparing a team for the competition. *Now You're Cookin'* was a resource the volunteers had a tough time with forming an opinion. This curricula had a great lesson on kitchen utensils which was much more in-depth than most of the other materials,

however they felt that the rest of the resource was lackluster. The formatting was unappealing and many of the volunteers, and while they recognized it had good information, they indicated they would not use it with a group if they had access to the other resources. The age of *Now You're Cookin'* was also a disadvantage when comparing it to the other resources. It still refers youth to the Food Guide Pyramid, which was replaced in 2005 with MyPyramid, and then by the MyPlate guidelines in 2010 by the United States Department of Agriculture (USDA) as the recommended nutrition guidelines (United States Department of Agriculture, 2016).

Eight of the resources belong to two sets of a progressive series of curricula. The 4-H Cooking series is comprised of *4-H Cooking 101, 4-H Cooking 201, 4-H Cooking 301,* and *4-H Cooking 401*. The Fantastic Foods series is comprised of *Six Easy Bites, Tasty Tidbits, You're the Chef,* and *Foodworks*. These series of curricula suggest participants complete the first level, then build upon the skills learned during the subsequent levels, however it is not required to use this approach. Volunteers saw the merit of using each curriculum as a stand-alone unit, but felt they were not as comprehensive without the companion books.

The *4-H Cooking Series* begins with 101 and 201 teaching basic food preparation skills, which are essential to success in the kitchen. The more advanced levels, 301 and 401, while they enhance the skills learned in 101 and 201, cover baking, grilling, and cooking using a slow cooker. These pieces of equipment are not available during the competition. Another disadvantage of the *4-H Cooking Series* is the topics that are neglected through all four levels. Cost analysis, serving size, and healthy substitutions are not covered with this series and would

have to be supplemented with additional materials if used to ensure a team was properly prepared for the competition.

Volunteers liked the *Fantastic Foods* curricula series, but believed it would not adequately prepare them for the competition. The variety of activities was appreciated, but the lack of sufficient coverage of the competition criteria was a concern. This series promotes the MyPyramid guidelines which were replaced in 2010 by MyPlate (United States Department of Agriculture, 2016). This series has a unique aspect of educating youth on careers in the food industry within each level, as well as having lessons on food preservation in *You're the Chef* and *Foodworks*. *Fantastic Foods* also had no lessons dedicated to kitchen equipment and its proper usage. While youth would learn equipment through its use in preparing recipes throughout the lessons, volunteers felt this was a glaring omission. Aspects of this series were favored by volunteers, but the overall consensus was the outdated information and missing topics make this series one that would need to be heavily supplemented and modified to use with a team.

One consideration that may have influenced the volunteer's recommendations is the timeframe stated in the prompt. The volunteers were told they had four months until the competition. This limited timeframe may have influenced the volunteers to prefer the curricula that were not in a series as that better fit their timeline. This timeline was established as it is a realistic situation that volunteers face. With the advent of a new 4-H programming year coming each October, participants decide what new projects they want to complete in the coming year. Most competitions occur in the early part of the calendar year, only allotting a few months between the start of the new 4-H year and the competition.

Volunteer Support

One resource that is available through Virginia Cooperative Extension is the Master Food Volunteer program (Virginia Cooperative Extension, 2016). Master Food Volunteers are trained with 30 hours of classroom instruction in basic nutrition, food safety, food preparation, and physical activity. They are then expected to serve their respective program for a certain number of hours. These master volunteer programs allow for Extension programming to reach a broader audience, despite having relatively small staff numbers and limited budgets (Rohs, Stribling, & Westerfield, 2002). Volunteers who conduct 4-H programming receive training in the Experiential Learning Model, providing them guidance to have youth involved in hands-on learning. Volunteers within the organization are allowed to devote time to more than one program area, leading to volunteers being Master Food Volunteers or Master Gardeners, but also assisting with 4-H programming. Master Food Volunteers can be utilized to assist in coaching a team to help youth learn from a volunteer who is trained both in nutrition and 4-H teaching methods. Volunteers are also needed to serve as judges for the competition, and having knowledgeable individuals provides legitimacy to the judging when evaluating nutrition knowledge amongst the teams. At the time of publication, Master Food Volunteers are not found in every unit within the Virginia Cooperative Extension system, however there are resources within the Family and Consumer Sciences program area to assist interested individuals in connecting with resources.

Supplemental Materials

The included materials were all evaluated as complete curricula that an educator could use to conduct a program in its entirety. Many additional materials exist that could be used as

supplemental materials for a specific topic. These additional materials can be found at the following sites:

- ChooseMyPlate.gov (United States Department of Agriculture, 2016) is a resource site developed by the USDA to provide materials for educating the public on proper use of the MyPlate nutrition guidelines.
- Texas 4-H Foods and Nutrition Projects Site (Texas A&M Agrilife Extension Service, 2016) was created by Texas 4-H to host Food Challenge competition resources, as well as additional food and nutrition projects. The site provides access to handouts and lesson plans that can be used to supplement competition areas.
- Virginia Cooperative Extension's Family Nutrition Program site (Virginia Cooperative Extension, 2016) has resources and fact sheets on various healthy living topics, as well as healthy and economical recipes.

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Appendix A – Food Challenge Resource Evaluation Rubric

4-H Food Challenge Resources Evaluation

Name of Resource: _____

Source Agency/Institution: _____

Where Available for Purchase: _____

Cost of Resource: _____

Age Range: _____

How organized: _____

_____

_____

Food Challenge Judging Areas Covered (circle all that apply, add notes as applicable):

MyPlate		Nutrition Knowledge		Cooking Terminology	
Food Safety		Kitchen Safety		Serving Sizes	
Cost Analysis		Kitchen Tools		Reading Nutrition Labels	
Food Measurements		Recipe Practice		Ingredient Substitutions	

Additional Notes: _____

_____

Recommendation:

Does Not Recommend Recommends Strongly Recommends