

A POSITIVE DEVIANCE APPROACH TO AN AFTER-SCHOOL NUTRITION CURRICULUM FOR ELEMENTARY STUDENTS



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PURPOSE

The purpose behind creating a nutrition curriculum for local Ogden City Schools which are part of the Ogden Civic Action Network (OgdenCAN), is to combat food insecurity in relation to intergenerational poverty. Data supports the fact that food insecurity will never be eradicated, but through a positive deviance model, there is a greater chance of improving a family's awareness of resources that are available to them in their community. A positive deviance model is essentially the first step towards combatting intergenerational poverty in the greater Salt Lake Valley, specifically in Ogden, Utah.



[F]ood insecurity will never be eradicated, but through a positive deviance model, there is a greater chance of improving a family's awareness of resources that are available to them in their community.



INTRODUCTION/METHOD



This curriculum is to reach the students first, who will then take it upon themselves to inform family members and implement what they will learn to aid themselves.

The vision behind OgdenCAN aims to improve the health, strength, and engagement within our community: economically, socially, environmentally, educationally and civically (<https://www.weber.edu/ogdencan>). This curriculum has been designed to be implemented in 13 elementary schools in Ogden School District. Within the Ogden School district, 38.48% of its population are People of Color (POC), and 62% of the entire population in Ogden is low income (Social Determinate, 2019). While the intentions are to apply this at the elementary level, information provided can be upscaled for higher grade levels such as middle and high school. The elementary

schools that this program will potentially be implemented, 100% of students receive free breakfast as well as free or reduced lunch. Many of these students have received little or no nutrition education. Over time, the term “positive deviance” has become increasingly popular which has resulted in multiple definitions and applications (Herington & van de Fliert, 2018). Traditionally, **a positive deviance approach aims to reach the parents or guardians with hopes of essentially combating food insecurity. This curriculum is to reach the students first, who will then take it upon themselves to inform family members and implement what they will learn to aid themselves.**

SCOPE OF CURRICULUM

The curriculum that we designed is a comprehensive nutrition program that aims to increase nutrition education and combat food insecurity amongst elementary students. This curriculum is not designed to eradicate food insecurity, but rather to educate and influence students to make healthy food choices. When students meet, they will participate in activities such as general nutrition education, recipe education and implementation, as well as visiting local community resources that can aid them, and their families, to healthy food and meal choices or options. Additionally, students will learn about social movements such as farm to fork, which encompasses the process that their food takes from farm through all of the necessary steps to reach their table.

CURRICULUM FORMAT

This curriculum has been designed for seventy-two individual lessons. This would account for two meetings per week for thirty-six weeks. Students will meet for about two hours after school each day that the program is offered while their parents or guardians are still at work, amounting to four hours of teacher-student contact each week. The curriculum is designed for Ogden School District located in Ogden, Utah, but is versatile and can be manipulated to fit the population at hand. Teachers at the local schools will be responsible for implementing this curriculum at their respective schools. Additionally, a faculty member of the Annie Taylor Dee School of Nursing at Weber State University in Ogden, Utah, reached out to the curriculum creators to disburse this in other school districts throughout the state of Utah.

The curriculum is designed to fulfill health education standards in the state of Utah, including literacy, English Language Arts and mathematic standards.

CONTEXT

Students who attend an after-school program will partake in a nine-month program where they will meet two times per week, and learn topics such as general nutrition, healthy recipe creation, and where our food comes from. The curriculum is designed to fulfill health education standards in the state of Utah, including literacy, English Language Arts (ELA) and mathematic standards. Mathematics will be incorporated by observing students measuring foods and determining proper portion sizes when creating their meals. Additionally, to achieve ELA comprehension, students will be given a notebook when they join the afterschool program. This notebook is to be used as a food journal or diary, and gives them an opportunity to engrain what they have learned, but also pose questions that they may have throughout the curriculum. At the end of each meeting, or lesson, there is an evaluation for the facilitator. While students will not necessarily benefit directly from the evaluation, this will help the facilitator determine what material is being absorbed and implemented, as well as what the facilitator may need to revisit or clarify.

REFERENCES

Herington, M. J., & van de Fliert, E. (2018). Positive deviance in theory and practice: A conceptual Review. *Deviant Behavior*, 39(5), 664–678. <https://doi.org/10.1080/01639625.2017.1286194>

Social Determinants of Health. (2019). *mySidewalk*. Retrieved from <https://data.mysidewalk.com/reports/21949>

CURRICULUM

The inspiration behind this curriculum is to combat intergenerational food insecurity, and educate students on general nutrition that will help them as they grow older and become more aware of their surroundings and choices. In Ogden, Utah, there is very little formal nutrition education for elementary-aged students. Because of this, limitations include unfamiliarity with certain foods, access to resources for food, and proper implementation for the curriculum itself. For this reason, the curriculum creator suggests that the curriculum be implemented by an individual well-versed in nutrition, or a related field. Utah health education standards have been provided for grades 1, 3, and 5. The students who partake in this after school program will range from first to fifth grade, and there will be a rise in comprehension throughout the program appropriate to those grade levels.

In addition to meeting the health education standards set forth, we also want to incorporate mathematics and reading/writing comprehension. To fulfill ELA comprehension, my suggestion is to provide students with a food journal, or diary. Their take-home work after each meeting is to write down what they have learned – Minimum will be one paragraph (3-5 sentences) that answers what they have learned, how they will apply this information, and to ask any questions that they may have. A standard notebook will suffice. There will also be multiple fiction, and non-fiction, readings that students will take part in during class as well as take-home activities as the facilitator finds necessary. Additionally, mathematic comprehension will be incorporated through the creation of recipes and measuring ingredients properly.

This is what has been considered the bare bones of a curriculum. It has been created to give the facilitator an outline of what is to be taught with current nutrition standards. A sample lesson plan has been provided for each monthly theme, or objective.

Utah Health Education Standards, Nutrition

1st grade, Strand 5

Standard 1.N.1:

Recognize major food groups, including water, and list a variety of healthy foods in each group.

Standard 1.N.2:

Identify foods and beverages that are healthy choices for the body and explain the importance of choosing healthy foods at each meal.

Standard 1.N.3:

Describe how food is fuel for the body.

Standard 1.N.4:

Recognize not all food products advertised or sold are healthy.



3rd grade, Strand 5**Standard 3.N.1:**

Demonstrate healthy behaviors to maintain or improve personal nutrition, fitness, and oral health including encouraging healthy food behavior and physical activity.

Standard 3.N.2:

Identify healthy foods, including snacks, in appropriate portion sizes.

Standard 3.N.3:

Describe the benefits of eating a nutritious breakfast.

Standard 3.N.4:

Discuss how family, peers, culture, and media influence eating habits.

5th grade, Strand 5**Standard 5.N.1:**

Use a food label to calculate how caloric intake can change depending on the number of servings consumed.

Standard 5.N.2:

Create a healthy meal, including beverage, using current dietary guidelines.

Standard 5.N.5:

Analyze the influence of media and technology, including social media, on personal and family nutrition and body image.

Standard 5.N.6:

Explain why different foods are produced in various regions of the United States and how this may affect consumer practices and local diets.

Utah English Language Arts Standards, Writing Standards**1st grade, Writing Standard 1**

Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

1st grade, Writing Standard 2

Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

Utah English Language Arts Standards, Literature Standards**1st grade, Literature Standard 1**

Ask and answer questions about key details in a text.

Utah English Language Arts Standards, Writing Standards**3rd grade, Writing Standard 2**

Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Utah English Language Arts Standards, Literature Standards**3rd grade, Literature Standard 1**

Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Utah English Language Arts Standards, Literature Standards

5th grade, Literature Standard 1

Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

Utah English Language Arts Standards, Writing Standards

5th grade, Writing Standard 1

Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

Utah Mathematics Standards

3rd grade, Strand: Number and Operations – Fractions (3.NF)

Develop understanding of fractions as numbers. Denominators are limited to 2, 3, 4, 6, and 8.

5th grade, Strand: Number and Operations – Fractions (5.NF)

Standard 5.NF.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including unlike denominators.

Theme 1: My Plate

- i. What is MyPlate
- ii. Sections of MyPlate – Grains and carbohydrates i.e. fruits and vegetables
- iii. Sections of MyPlate – Protein and dairy
- iv. Build healthy meals

Theme Objectives:

1. Students will develop an understanding of the different areas of MyPlate.
2. Students will design healthy meals based on MyPlate.
3. Students will begin to identify healthy food options for the different areas of MyPlate.

Sub-Theme Objectives:

Week 1: Students will grasp the objectives behind the MyPlate model.

Week 2: Students will define where, and how much, grains/carbohydrates, as well as fruits and vegetables, are suggested per meal for their plates.

Week 3: Students will define where, and how much, protein and dairy are suggested per meal for their plates.

Week 4: Students will demonstrate their knowledge by building MyPlate approved meals.

Sample Lesson Plan – Week 1, Day 1

Objective: Students will grasp the goals behind the MyPlate model.

References/Worksheets: https://fns-prod.azureedge.net/sites/default/files/tn/dmp_student2-1.pdf
MyPlate placemat

Materials: Markers, crayons, colored pencils, MyPlate Placemat worksheet

Procedure:

Time	Teacher Activity	Materials
3:00–3:15 pm	Ice breaker	Teacher discretion
3:15–3:35 pm	Introduction to MyPlate principles. What is MyPlate? Why do we use MyPlate? Brief intro. to what the different disciplines of MyPlate are. Explain to students that carbohydrates & proteins contain 4 kilocalories per gram, and fat contains 9 kilocalories per gram.	MyPlate Placemat worksheet
3:35–4:00 pm	Visit each individual area of a MyPlate plate. Give specific food examples for each that are culturally appropriate to the audience. As you teach each section, instruct students to color in that section with their favorite foods that apply.	MyPlate Placemat worksheet, markers, colored pencils, or crayons
4:00–4:10 pm	Student/Teacher break	
4:10–4:40 pm	Count students off 1 to 3, 1 to 4, or 1 to 5 depending on group size. Instruct students to then write out one sentence that describes their favorite food from each section of MyPlate. Observe sentences and conversation to make sure they are appropriate.	MyPlate Placemat worksheet, markers, colored pencils, or crayons
4:40–5:00 pm	Wrap up. Test student comprehension of lesson by asking appropriate questions related to MyPlate. Ask them to share one or two sentences that they completed while in their group activity.	White board, dry-erase marker(s)

Utilize the MyPlate website for activities to utilize during the second meeting of the week. An example includes ants on a log i.e. celery, peanut butter, and raisins in conjunction with fruit and vegetable sorting worksheet. When making the ants on a log, explain portion size and hold students accountable while they make them (this will suffice for the math comprehension).

Food Sorting Worksheets:

<https://www.fns.usda.gov/tn/discover-myplate-student-workbooks> (all worksheets)

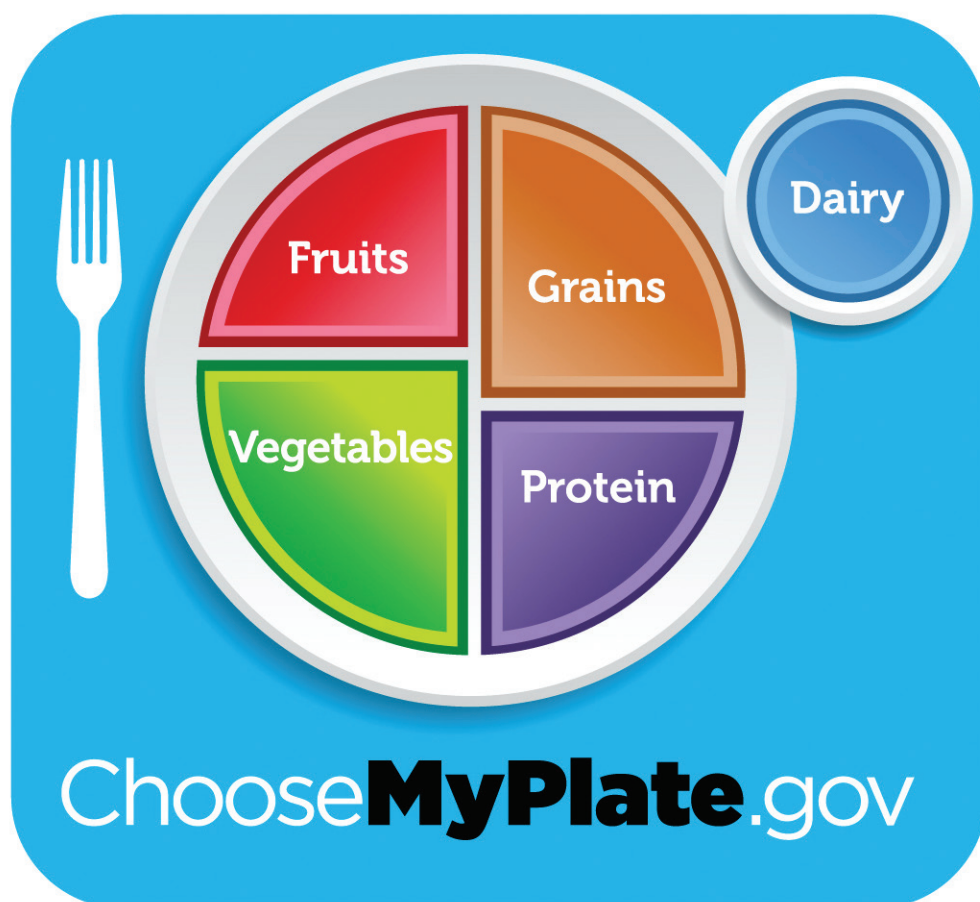
https://fns-prod.azureedge.net/sites/default/files/tn/dmp_student1-1.pdf (fruits & veggies)

https://fns-prod.azureedge.net/sites/default/files/tn/dmp_student1-3.pdf (protein)

Evaluation:

Students will primarily be evaluated during the group activity by making sure that their sentences are legible, appropriate, and make sense related to the different areas of MyPlate.

An evaluation for the second meeting will be completed by observing students to make sure that their serving sizes are correct. Additionally, teach them to add up the calories of one serving. The point of how many calories is not the point, rather, that they are competent in understanding that food = calories and being conscious of how much they are eating is important.



Theme 2: Grains and Carbohydrates

- i. What is a grain? What is the purpose within our body?
- ii. Bread and rice
- iii. Beans and legumes
- iv. Fruits and vegetables

Theme Objectives:

1. Students will understand different major carbohydrate sources.
2. Students will differentiate different starch sources, including rice and grains, beans and legumes, and bread.
3. Students will identify different fruits and vegetables.

Sub-Theme Objectives:

Week 5: Students will define what a carbohydrate is and how many calories are in one gram.

Week 6: Students will determine what grains derive from starch sources.

Week 7: Students will grasp the differences amongst popular beans and legumes.

Week 8: Students will demonstrate their knowledge about culturally appropriate fruits and vegetables.

Sample Lesson Plan – Week 8, Day 1

Objective: Students will demonstrate their knowledge about culturally appropriate fruits and vegetables.

References/Worksheets:

https://fns-prod.azureedge.net/sites/default/files/tn/dmp_student1-1.pdf (Fruit and Vegetable Sorting worksheet)

https://fns-prod.azureedge.net/sites/default/files/tn/dmp_student1-2.pdf (Grains and Dairy Sorting worksheet)

Materials: Markers, crayons, colored pencils, Fruit and Vegetable Sorting worksheet, Grains and Dairy Sorting worksheet, fresh produce i.e. mango, apple, pear, lettuce, tomato, and tomatillo, white bread, wheat or multigrain bread, pinto beans, black beans, lentils

Procedure:

Time	Teacher Activity	Materials
3:00–3:15 pm	Ice breaker	Teacher discretion
3:15–3:30 pm	Distribute Grain and Dairy Sorting worksheet. Put more emphasis on the grain section, as dairy will be discussed in depth at a later date. Instruct students to color the grain basket one color, and the dairy basket a different color. Then, ask them to distribute the foods appropriately.	Grain and Dairy Sorting worksheet, markers, colored pencils, or crayons, scissors, glue sticks
3:30–3:40 pm	Go over Grain and Dairy Sorting worksheet. Make corrections where applicable. If possible, use breads, legumes and beans, as physical and tangible examples for this.	Grain and Dairy Sorting worksheet, markers, colored pencils, or crayons, scissors, glue sticks
3:40–4:00 pm	Introduction to grains, specifically bread. Show white and multigrain bread. Discuss how carbohydrates are 4 kilocalories per 1 gram. Cut up both breads, into fours, and distribute samples to each student. Ask them which bread they prefer, and why. Allow discussion!	Plastic knife, napkins, plate, white bread loaf, and multigrain bread loaf
4:00–4:10 pm	Student/Teacher break	
4:10–4:25 pm	Distribute Fruit and Vegetable Sorting worksheet. Just like the Grain and Dairy Sorting worksheet, instruct students to color the baskets different colors and distribute fruits and vegetables appropriately.	Fruit and Vegetable Sorting worksheet, markers, colored pencils, or crayons, scissors, glue sticks
4:25–4:35 pm	Go over Fruit and Vegetable Sorting worksheet. Make corrections where applicable. If possible, use fresh produce as physical and tangible examples.	Grain and Dairy Sorting worksheet, markers, colored pencils, or crayons, scissors, glue sticks

4:35–4:55 pm	Introduction to fruits and vegetables. Distribute samples of each fresh produce for students to munch on while you teach them the applicable information. Discuss which they prefer over others, and why. What did they taste? Why do they like the fruits (generally) more than the vegetables? Which of these do they often eat? Did they try anything new?	Teacher discretion
4:55–5:00 pm	Wrap up. Ask if students need any clarification, and answer any appropriate questions that may arise.	

Evaluation:

Evaluation is similar to other weeks. Observe and make sure that students are putting the foods in the correct areas. During discussions, make sure that students are portraying their thoughts properly and make corrections with their communication skills as necessary. Also pose a question “How many calories are in 1 gram of carbohydrates? You can choose to weigh out specific foods, bread more than likely, to “guesstimate” the number of calories in one serving of said food. This will ensure mathematic comprehension.



Theme 3: Protein

- i. What is protein? What is the purpose within our body?
- ii. Animal proteins
- iii. Non-Animal proteins
- iv. Dairy

Theme Objectives:

1. Students will recognize the importance that protein plays in their bodies.
2. Students will categorize sources that are animal protein and non-animal protein.
3. Students will classify the different sources that protein can come from.

Sub-Theme Objectives:

Week 9: Students will define what protein is and what sources it can come from.

Week 10: Students will recognize the different animal proteins.

Week 11: Students will classify non-animal proteins.

Week 12: Students will examine dairy and the benefits of it throughout our body.

Sample Lesson Plan – Week 16, Day 2

Objective: Students will examine dairy, where it comes from, and how it is processed.

References/Worksheets:

<https://www.youtube.com/watch?v=EOAavg4ftFk>

Jenna, A Dairy Farmer

<http://www.agintheclassroom.org/TeacherResources/AgMags/Dairy%20Ag%20Mag%20for%20SmartBoard.pdf>

Illinois AgMag, Dairy

https://naitc-api.usu.edu/media/uploads/2016/02/03/Dairy_Farm_Fact_Sheet.pdf

Dairy Farm Fact Sheet

Materials: Worksheets and links listed above, markers, crayons, colored pencils, scissors.

Procedure:

Time	Teacher Activity	Materials
3:00–3:30 pm	Show the video “Jenna, A Dairy Farmer” At the completion of the video, ask the following questions: What tools or technologies did you notice that are necessary for the production of milk? What is different about how farmers produced milk and cheese in the past? Does milk come directly from the store? How has technology made it easier for us to buy so many different kinds of food products from the store?	Screen, projector, computer with proper cables, “Jenna, A Dairy Farmer” video
3:30–3:45 pm	Take a quick picture walk with the students using the Illinois Dairy Ag Mag. Ask questions such as: What will we be learning about? Where do you think dairy cows are milked? How does milk get from the farm to the grocery store?	Illinois Dairy Ag Mag printouts
3:45–4:00 pm	Instruct the students to state facts regarding the dairy cows from the Dairy Farm Fact Sheet. Have the Ag Mag handy in case they want to review a page.	Dairy Farm Fact Sheet, Illinois Dairy Ag Mag
4:00–4:10 pm	Student/Teacher break	
4:10–4:30 pm	Place students into groups or 3 to 4. Have them share with their group what they learned from the Dairy Farm Fact Sheet. Have students exchange fact sheets to see what each other has learned.	Dairy Farm Fact Sheet
4:30–4:50 pm	Take a survey and ask the students which dairy product they enjoy the most; butter, cheese, ice cream, yogurt, etc. Once votes are tallied show the video of the dairy product that received the most votes found in the Illinois Dairy Ag Mag on page 2 under the heading, “Udderly Cool.” Click on the video camera icon and the video will begin to play.	Screen, projector, computer with proper cables, Illinois Dairy Ag Mag, whiteboard, dry-erase markers
4:50–5:00 pm	Wrap up. Ask if students need any clarification, and answer any appropriate questions that may arise.	

Evaluation:

To evaluate, see 4:30-4:50 activity above. Essentially, students should be able to respond and answer these questions if the information was comprehended. Learning about where our food comes from is almost as, if not more important, than learning about the food itself.

As before, continue to check food journals/diaries to make sure that students are keeping up to date. I feel that this step is extremely valuable in student's comprehension, but also retention of the information that they have learned. It is likely that parents will review this information, OR students will feel inclined to share what they have learned with their family members.

Theme 4: Fats, Oils & Sweets

- i. What is fat and why do we need it?
- ii. Is oil really that bad for you?
- iii. Sweets... How much is too much?
- iv. You're nuts! (& seeds)

Theme Objectives:

4. Students will understand oil and its difference from solids and liquids.
5. Students will learn about portion control – Specifically with sweets and treats.
6. Students will examine different nuts and seeds.

Sub-Theme Objectives:

Week 13: Students will recognize the role that fat plays within our diet.

Week 14: Students will differentiate different types of oil that may be common in their diet.

Week 15: Students will learn about portion control and moderation when it comes to desserts and sweets.

Week 16: Students will categorize different nuts and nut butters.

Sample Lesson Plan – Week 20, Day 1

Objective: Students will categorize different nuts and nut butters.

References/Worksheets: N/A

Materials: Pinto beans, bowls, paper plates, butter knives, warm water, magnifying glasses, paper, markers, crayons, colored pencils.

Procedure:

Time	Teacher Activity
3:00–3:15 pm	Ice breaker activity of your choice
PART 1: No time frame, just follow steps and allot time necessary. Step 1: Distribute a dry pinto bean, a paper plate, and a magnifying glass to each student. Remind them not to put the bean in their nose, ears, or mouth! Ask students what they think it is. Some will say a bean; others may say it is a seed. Tell them that it is a bean, which is a kind of seed. Ask students: What is the job of a seed? Step 2: Tell students that today we will discover the job of a seed. We will dissect, or open up, the seeds and look inside. Ask students to open their seeds (without using their teeth) and describe what they see inside. Step 3: After a few minutes, ask if anyone has opened their seed. Probably no one has been able to. Ask students what they wear when it is cold outside (a coat). Tell students that a seed has a coat covering it until it is ready to grow. Right now, it is asleep, waiting to wake up. It may sleep for a week, a month or even a year until it has the right amount of water and warmth. The seed will need water and the soil must be warm enough for it to grow. Step 4: Distribute the soaked pinto beans to each student. Ask them to compare them to the dry one. Inform students that these pinto beans have been soaked in warm water to imitate the warm soil. Invite students to try to open these seeds and observe what is inside using their magnifying glasses. Most will see a new plant growing. If they do not find one, give them another bean.	
Break	
PART 2: No time frame, just follow steps and allot time necessary. Step 1: Gather students together and ask what they saw inside the seed. Ask one student to draw what they observed on chart paper. Label the parts of the seed for with lines extending from the three parts: seed coat (the outer area), food (inside the bean), and the new plant. Step 2: Invite students to draw a picture of the inside of their seed, label its parts and paint them. Step 3: Gather students back together and ask them to tell about the new plant they saw in their seed. Ask students what they think the new plant will do (grow). Ask students: Then what is the job of a seed? (To grow into a plant).	
*This lesson can be drawn out over multiple days so that students get a better idea of seeds and “how they work”. Feel free to adjust objectives and themes appropriately, but here is “Day 1”.	

Evaluation:

This specific lesson does not necessarily have a mathematical application, but if you would like to create something please feel free to do so. This lesson will play a large role in their journals/diaries, so following up on questions or concerns that may arise through that medium will be important.

Theme 5: Liquid

- i. Water is essential, essential, essential!
- ii. Fruit juices
- iii. Milk – How do I know which type to buy?
- iv. Smoothies Mm mm Yum!

Theme Objectives:

- 7. Students will assess the importance of adequate water consumption.
- 8. Students will identify dairy sources, specifically milk, and its importance in the human diet.
- 9. Students will develop healthy smoothie recipes.

Sub-Theme Objectives:

Week 17: Students will understand why adequate water consumption is essential to functioning optimally.

Week 18: Students will interpret which fruit juices are deemed healthy versus not healthy.

Week 19: Students will recall knowledge about milk and where it comes from.

Week 20: Students will test different smoothie recipes.

Sample Lesson Plan – Week 24, Day 2

Objective: Students will develop healthy smoothie recipes – Packed with vitamins, minerals, and energy!

References/Worksheets: N/A

Materials: blender(s), cups, Greek yogurt (vanilla), pineapple juice, pineapple, mango, banana, ginger, orange juice, avocado, spinach, kiwi, milk, strawberries, watermelon, raspberries.



Procedure:

Teacher Activity

Today will be spent making smoothies! While there is no time constraints on today, please be aware as to not run out of time before all students get their smoothie(s). A math component will be applied to this lesson by making sure that students understand proper ratios and measurements.

Recipes: Each recipe yields 4 servings, please allow students to try all of these options.

Yellow Smoothie

½ cup pineapple juice

½ cup Greek yogurt

½ cup frozen pineapple, diced

½ cup frozen mango

1 banana, chopped

1 tsp grated ginger

Green Smoothie

½ cup orange juice

½ vanilla Greek yogurt

½ avocado, peeled

2 kiwis, peeled

1 handful of baby spinach

Red Smoothie

¼ cup milk

½ cup Greek yogurt

½ cup frozen raspberries

½ cup frozen strawberries

½ cup frozen watermelon

Use **frozen fruit** as to not water down the smoothie mixture! Take different student volunteers to help prepare the different smoothies.

Evaluation:

Students will be evaluated by ensuring that adequate amounts of ingredients are added to the recipes for each smoothie. Allow them to adjust amounts as to serve enough for the entire class. Ask questions that they should be able to recall answers from previous lessons about fruits, vegetables, and fats. This is meant to be a fun lesson!



Theme 6: Food Safety

- i. A clean and sanitized cooking station
- ii. Cross contamination
- iii. Food temperatures
- iv. Shelf life

Theme Objectives:

- 10. Students will understand the importance of proper food safety.
- 11. Students will determine the appropriate “shelf life” for fresh produce.
- 12. Students will assess the negative consequences of cross-contamination.

Sub-Theme Objectives:

Week 21: Students will apply their knowledge to create a clean, and sanitized, cooking/food preparation station.

Week 22: Students will assess instances of cross-contamination.

Week 23: Students will learn to store food at proper temperatures to maximize freshness and shelf life.

Week 24: Students will differentiate “use by”, “sell by”, and “best if used by” dates.



Sample Lesson Plan – Week 26, Day 1

Objective: Students will assess instances of cross-contamination.

References/Worksheets: N/A

Materials: celery, carrots, broccoli, cauliflower, eggs, some sort of raw meat, produce brush, cinnamon, olive oil, dawn dish soap, plastic bags or Tupperware to separate food.

Procedure:**Teacher Activity**

We will break today's activities down into two activities: Clean and Separate. There is no time allotment for each of these activities, but aim for about 50 minutes for clean and 50 minutes for separate.

Clean:

1. Washing hands and surfaces often is important because foodborne bacteria can spread throughout the kitchen, getting onto cutting boards, utensils, sponges, countertops and food. If eaten, harmful bacteria can cause foodborne illness.
2. All fruits and vegetables need to be washed before eating them, even if the vegetable or fruit will be peeled. Contaminated skin easily can contaminate the edible portion of the fruit or vegetable.
3. Celery, carrots, broccoli and cauliflower should be washed with running water. Potatoes and other firm skinned vegetables, especially root vegetables, should be washed with a produce brush. (Demonstrate washing a carrot or potato with a produce brush. Hand out produce brushes.)
4. Wash freshly picked garden vegetables and tree fruits before eating them. Such produce may have been contaminated by birds, animals and insects.
5. Do not use soap or detergent to wash fruits or vegetables.
6. Discuss the importance of washing the tops of cans before opening. (Demonstrate with canned olives if desired.)

Activity:

1. Give each participant about a teaspoon of oil to rub in his or her hands.
2. Sprinkle hands with cinnamon.
3. Ask participants to wash their hands with no soap and see how clean they get.
4. Next, ask participants to wash their hands with warm water and soap for 20 seconds and see how clean they get.
5. When is washing your hands important? (Examples: Before you begin cooking, after touching raw meat, after using the restroom, after changing diapers, after touching a pet.)

Break

Separate:

1. Keeping potentially hazardous food, such as raw meat, fish and raw eggs, separate from foods that will not be cooked is another important way to keep foodborne bacteria from spreading.
2. Wash cutting boards, dishes and countertops with hot, soapy water after preparing each food item and before going on to the next item.
3. Meat and juices from meat can spread bacteria through cross-contamination: for example, handling raw meat and then handling vegetables without washing hands.

Some tips to avoid cross-contamination...

1. Wrap meat in plastic bags provided in the meat section of the grocery store.
2. If using reusable bags, have separate bags for meat and produce.
3. Store raw meat away from ready-to-eat items.
4. Place raw meat and eggs in the bottom of the grocery cart.
5. Store raw meat and eggs on the bottom shelf of your refrigerator.
6. Use a separate cutting board for produce and raw meat if possible. (Hand out flexible cutting boards if applicable.)
7. Never use the same plate for raw and ready-to-eat food unless it is washed in between.

Evaluation:

Evaluation for this activity will be determined by whether or not students follow instructions; Especially when they are instructed to wash their hands, brushes, and separate food appropriately. This is more of a “serious” lesson, but there is also room to make it fun! I suggest inserting your own ideas to spice things up, and make it a little more light-hearted.



Theme 7: Building a Healthy Meal

- i. Grains and carbohydrates
- ii. Produce – fruits and vegetables
- iii. Protein – animal meat and dairy
- iv. Grocery store field trip

Theme Objectives:

- 13. Students will implement what they have learned over the past few months to create healthy meals based on MyPlate standards.
- 14. Students will determine what carbohydrates, protein, and dairy are essential for a healthy meal.
- 15. Students will understand the different sections of a grocery store, and why foods are located where they are.

Sub-Theme Objectives:

Week 25: Students will determine which grain or carbohydrate sources are suggested for a balanced meal.

Week 26: Students will determine which fruits and vegetables go with other sources of food for a balanced meal.

Week 27: Students will determine healthy sources of protein and dairy for a balanced meal.

Week 28: Students will tour a grocery store and learn where fresh produce, protein sources, and junk food are located (and why they are placed where they are).

Sample Lesson Plan – Week 28, Day 1

Objective: Students will implement what they have learned over the past few months to create healthy meals based on MyPlate standards.

References/Worksheets: https://fns-prod.azureedge.net/sites/default/files/tn/dmp_student2-1.pdf
MyPlate placemat

Materials: crayons, markers, colored pencils, MyPlate placemat sheets, plates, cups, apples, celery, nut butter, raisins, grape juice, orange juice, water, milk.

Procedure:

Time	Teacher Activity	Materials
3:00–3:15 pm	Ice breaker	Teacher discretion
3:15–3:30 pm	Explain to students that today they will be building healthy meals based on what they have learned during this nutrition program. Hand out MyPlate placemat sheets and allow them to grab markers, colored pencils, or crayons.	MyPlate Placemat sheet, markers, colored pencils, or crayons
3:30–4:00 pm	Allow students to work alone, or in groups. Instruct them to list their 5 favorite foods for each section of MyPlate. After they have determined what those foods are, they should draw small pictures of them in the appropriate section.	MyPlate Placemat sheet, markers, colored pencils, or crayons
4:00–4:15 pm	Student/Teacher break	
4:15–4:35 pm	Ask students to share what they have colored/ written down. Ask 3 students to share what their favorite meal would be if they could only choose one food from each section.	MyPlate Placemat sheet
4:35–4:50 pm	Discuss the differences of their meals, and make connections. At this point, most students will grasp what foods make a healthy meal, and should be able to discuss why they have chosen these foods.	MyPlate Placemat sheet
4:50–5:00 pm	Wrap up. Ask if students need any clarification, and answer any appropriate questions that may arise. This will be one of the last entries in the students' food journal. Surprise them with their field trip to the grocery store during their next meeting!	

Evaluation:

For this lesson, evaluation will be observed by what they have chosen to write down as their foods and ultimately what foods they would choose to make a complete meal under MyPlate guidelines. As I mentioned above, at this point student should have a sound understanding of what foods make a healthy meal and this is ultimately a fun activity for them to collaborate with others.

Theme 8: Origins of Food and Media Influence

- i. Farm to fork
- ii. Farmers Market field trips
- iii. Positive media influence
- iv. Negative media influence

Theme Objectives:

- 16. Students will identify what “farm to fork” means.
- 17. Students will examine local farmers markets and learn about what they have to offer compared to their local supermarket(s).
- 18. Students will engage in positive, and negative, social media applications related to food security and insecurity.

Sub-Theme Objectives:

Week 29: Students will identify different instances of “farm to fork” social constructs.

Week 30: Students will compare and contrast local farmers market(s).

Week 31: Students will determine what areas of media are for positive nutrition choices.

Week 32: Students will determine what areas of media are centered around poor nutrition choices.

Sample Lesson Plan – Week 29, Day 1

Objective: Students will identify different instances of “farm to fork” social constructs.

References/Worksheets: Activity 1: “Who Grew My Soup” book (\$7, ask district to buy this), fact wheel, food samples, food/farm connection matching cards.

Activity 2: Food item with product of origin label, where does my food come from activity sheets.

https://naitc-api.usu.edu/media/uploads/2016/02/09/Where_Does_My_Food_Come_From.pdf

Procedure:

Both of these activities call for about 45 minutes each. Please utilize time accordingly.

Teacher Activity**Activity 1: Food/Farm Connection**

1. Read the book *Who Grew My Soup?* by Tom Darbyshire.
2. Ask the students to create a list recalling the ingredients in Phin's soup (carrots, tomatoes, green beans, celery, corn, barley, spinach, peas, onions, potatoes).
3. Cut out and assemble the Fact Wheel (located at the end of the lesson). Each student can make their own Fact Wheel or it can be assembled prior to the lesson (one for each group).
4. Divide the class into 10 groups. Assign each group a food from the list. Give the groups enough time to match their food with the picture and information on the fact wheel. Provide a few samples of the ingredients for students to taste or observe while each group shares the facts about their food.
5. Ask the students if they think all of the ingredients in Phin's soup can be grown in Utah. The answer is yes. Ask the students if they think they can buy these ingredients locally grown all year long. Discuss what factors would affect the availability of locally grown food.
6. Pass one Food/Farm Connection card (located at the end of the lesson) to each student. Allow students to walk around the classroom and find the student who has their matching card. Students should match the food item with its farm source. (ex. Oatmeal – oats, French fries – potatoes, eggs – chicken, applesauce – apples) Discuss the connections as a class.



Activity 2: Where Does Your Food Come From?

1. Prior to the activity, ask students to find a food item with a product of origin label at home. (Be prepared with extra food and a computer at school for students who are unable to complete this assignment at home.)
2. Have each child complete the “Where Does My Food Come From?” activity sheet by using National Geographic’s Mapmaker Interactive, available online at https://naitc-api.usu.edu/media/uploads/2016/02/09/Where_Does_My_Food_Come_From.pdf, to find the distance between their food’s country of origin and the town in which they live. Instructions are found on the activity sheet. This can be completed as a homework assignment or in school depending on computer access.
3. As a class, locate the origin of each child’s food on a world map. Students can label each location on the activity sheet world map. Compare the distances and determine whose food traveled the farthest and shortest distances.
4. Discuss the different ways the food could have traveled to a local grocery store (truck, airplane, train, boat). What steps need to be taken to ensure that the food doesn’t spoil before arriving at the market?
5. What are some possible reasons the food traveled so far? Discuss how the climate of a particular location affects what foods can be grown there
6. Identify the different jobs involved in getting food from the farm to the table (i.e. grower, harvester, truck driver, packagers, processors, warehouse operators, grocers etc.).

If time allows, please continue on to activity 3 listed in the above PDF link...

Evaluation:

Evaluation for these activities will be observed simply by student interaction. There will be a lot of conversation, and potentially confusion, as many students only understand their food coming from the supermarket or grocery store. This lesson is designed to give students the resources to form educated thoughts and conversation related to the process that almost all of our food makes from farm, to supermarket, to fridge, to table, and finally our bellies! Just like many other lessons in this curriculum, we can observe whether or not information has been retained through their food journals/diaries.

Theme 9: Cook for your friends and family!

Meet once per week during this month.

All of these will need plastic gloves, plates, plastic utensils, small cups, and napkins

Basic kitchen utensils suggested i.e. hot plate, toaster oven, toaster, pan, spatula, mixing bowls

i. Whole-grain bagel with peanut butter and banana, calcium-fortified orange juice

- a. Whole grain bagels (½ bagel per student)
- b. Natural peanut butter (1 tbsp. per student)
- c. Bananas (½ banana per student) pre-sliced coin-sized
- d. Orange juice (6 oz. per student)
- e. Toaster

Procedure:

1. Pick 8 student volunteers, 2 for each step above (group 1, 2, 3, and 4)
2. Group 1 will toast the bagels in a toaster and put bagels on paper or reusable plates
3. Group 2 will apply 1 tablespoon of peanut butter to each half of the bagel
4. Group 3 will distribute ½ banana of slices per bagel
5. Group 4 will pour 6 oz. of orange juice

ii. Multi-Grain cheese and veggie quesadillas, fat sour cream

- a. Whole or multi-grain tortillas
- b. Boiled and mashed kidney beans
- c. Chopped onion (optional)
- d. Cilantro
- e. Diced or quartered cherry tomatoes
- f. Chopped/sliced red, orange, and yellow bell peppers
- g. Grated mozzarella and white cheddar cheeses
- h. Unflavored, non-fat Greek yogurt
- i. 1 lemon
- j. Grapes
- k. Milk (optional)
- l. Salt
- m. 2 hot plates
- n. 2 pans

Procedure:

1. To make "Sour Power" sour cream, combine yogurt with lemon juice and mix thoroughly. Make sure to remove any pulp or seeds.
2. Using a hot plate over light-medium heat, put tortillas in and heat up 2 minutes each side
3. Using the second hot plate on medium heat, combine bean mash, peppers, tomato, and onion. Lightly brown veggies
4. While the tortilla is still warm, apply ¼ cup of mozzarella and ¼ cup of white cheddar cheeses to one half of the tortilla
5. Place browned veggies in with the cheeses
6. Fold the tortilla over and cook for another 2 minutes on each side, or until the cheese has melted.
7. When finished, cut folded tortilla into 4 slices (2 slices per student)
8. Garnish with "Sour Power" sour cream and grapes
9. Serve with 6 oz. milk or 8 oz. water

iii. Pita pizzas, cherry tomatoes

- a. Tomato sauce
- b. Tomato paste
- c. Minced garlic
- d. Dried basil, thyme, and oregano
- e. Whole-wheat pita bread
- f. Green onion
- g. Red bell pepper
- h. Chopped mushroom
- i. Milk
- j. Toaster oven



Procedure:

1. Combine tomato sauce, tomato paste, garlic, basil, oregano, and thyme
*Tip, half as much tomato paste to tomato sauce i.e. 12 oz. tomato sauce to 6 oz. tomato paste
2. Turn pita upside down and spread with 2-3 tbsp of sauce
3. Top with chopped vegetables
4. Place in toaster oven and bake until edges are lightly brown (about 10 minutes)
5. Cut pitas in half, one half per student
6. Serve with 6 oz. milk

iv. Bean burrito with lettuce, tomato, and guacamole, rice, peach-mango salsa, milk

- a. Whole or multi-grain tortillas
- b. Shredded lettuce
- c. Boiled and mashed kidney beans
- d. Diced tomato
- e. Pre-made or fresh guacamole
- f. Brown rice
- g. Peaches
- h. Mangos
- i. Cheeses (optional)
- j. Milk

**Procedure:**

1. Cook rice using a rice maker or hot plate and pot
2. Using a hot plate and pan, heat up tortilla
3. Using a second hot plate and pan or microwave, heat up bean mash
4. Dice tomatoes, peaches, and mangos
5. After tortillas are heated, spread bean mash, lettuce, and peach-mango salsa in tortilla
6. Optional, add cheese blend
7. Add $\frac{1}{2}$ cup of cooked brown rice to each burrito
8. Cut burritos in half, one half will serve one student

Serve with 6 oz. milk

