



Nutrition Education Lessons

8 interactive and
edible nutrition
lessons to teach
K-4th graders
about eating
healthy food!





A Note from the Author:

I created this series of lessons during the 2016-2017 school year, while I was serving as a FoodCorps Service Member with San Diego Unified School District's Food and Nutrition Services Department. Each lesson is designed to take about 1 to 1.5 hours, and to take place inside the classroom. I taught the lessons on a monthly basis to kindergarten through fourth grades at both Ocean Beach Elementary School and Valencia Park Elementary School. Each lesson has been refined based on my experiences in the classroom, and each one can easily be adapted to your needs. Hands-on nutrition education can truly work wonders, and the expression on students' faces when they try kale for the first time cannot be beat. Please feel free to use and share this curriculum with your own students!



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Eat a Rainbow Lesson:

Materials:

- Eat a Rainbow Cutouts (Appendix 1-a)
 - Red heart cutout
 - Orange eyes cutout
 - Yellow smiley face cutout
 - Green skeleton and teeth cutouts
 - Blue brain cutout
- Colorful fruit/veggie posters (Appendix 1-b)
 - Red
 - Orange
 - Yellow
 - Green
 - Blue/Purple
- Eat a Rainbow Health Chart (Appendix 1-c)

Warm-Up:

- Colorful Fruits and Veggies Game: (*adapted from USDA Team Nutrition's "Summer Food, Summer Moves"*)
 - **ASK:** You may know that fruits and vegetables are good for you, but did you know that you should try to eat different colors of fruits and vegetables each day? Why do you think it's good to eat a variety of fruits and vegetables?
 - Encourage kids to say that different fruits and vegetables can have different vitamins, minerals, antioxidants, and other nutrients (define key words that may be new – write it on whiteboard, have kids repeat it). Eating a variety of fruits and vegetables helps the body to get the nutrition needed to grow, play, and be healthy.
 - **DO:** Invite kids to play a game. Have kids stand in a circle (OR have kids stay at their desks; the front of the classroom becomes the center of the circle).
 - **SAY:** Today we are going to play a fun game called Colorful Fruits and Veggies. I am going to stand in the middle of the circle and when I say a color, I'll give a few moments for everyone to think of a fruit or vegetable that is that color. For example, if I say "red," then you could say strawberry! Then, we'll go around the circle and when it is your turn, you give an answer. You cannot repeat a food that someone has already said. If you cannot think of a fruit or vegetable that is that color, then you become the person at the center of the circle. Whoever is in the center of the circle then calls out a new color, and we repeat the game.
 - For Younger Kids: Brainstorm a list beforehand and see how many they can remember.
 - **PLAY:** Write these colors on the board: red, orange, yellow, green, blue, purple, and white. Call out one of the colors to start the game, and then have students call out the remaining colors as the game progresses.

- Colorful Fruit and Veggie Reference List:
 - **Red:** Cherries, Raspberries, Strawberries, Tomatoes, Watermelon, Red Bell Peppers, Cranberries, Red Grapes, Pomegranates, Beets, Blood Oranges, Guava, Grapefruit, Radishes, Red Chili Peppers, Red Onions, Red Pears
 - **Orange:** Apricots, Peaches, Cantaloupe, Nectarines, Orange Bell Peppers, Carrots, Grapefruit, Oranges, Kumquats, Persimmons, Sweet Potatoes, Butternut Squash, Pumpkin, Tangerines
 - **Yellow:** Corn, Yellow Squash, Yellow Bell Peppers, Lemons, Yellow Tomatoes, Mangoes, Papayas, Pineapples
 - **Green:** Honeydew Melons, Lima Beans, Collard Greens, Spinach, Green Beans, Peas, Zucchini, Kale, Swiss Chard, Mustard Greens, Broccoli, Romaine Lettuce, Kiwi, Edamame, Sugar Snap Peas, Celery, Cucumbers, Green Apples, Green Grapes, Avocados, Asparagus, Arugula, Artichokes, Bok Choy
 - **Blue:** Blueberries, Blackberries, Black Currants
 - **Purple:** Purple Potatoes, Purple Cabbage, Figs, Purple Grapes, Plums, Eggplant, Raisins, Purple Cauliflower, Prunes, Purple Carrots
 - **White:** Bananas, Brown Pears, Cauliflower, Jicama, Mushrooms, Potatoes, Shallots, Onions, Turnips, White Corn, White Nectarines, White Peaches
- **WRAP UP:** Great job! You know so many different colors of fruits and vegetables.

Discussion:

- Now we are going to learn why eating all of these different colors of fruits and vegetables is so good for you!
 - Discussion Questions:
 - When you hear “Eat the Rainbow,” what do you think about? (*fruit candy, the sky, weather, etc.*)
 - What color is your favorite food? How many colors have you eaten today?
 - Do you think a red piece of candy and a red strawberry do the same thing in your body? Why/why not? What if you eat a package of rainbow-colored skittles? Will you get all the nutrition you need?
 - What do you think would happen if you only ate one color for your whole life?
 - Do you eat fruits and vegetables at home? What about at school?
 - Facts:
 - Fruits and vegetables are packed with nutrients (vitamins, minerals, antioxidants, and fiber) that keep us healthy – and help us avoid some really serious diseases
 - Fruits and vegetables help us to grow strong, have healthy skin and hair, and do our best when we play and learn
 - As we saw in our game, fruits and vegetables come in lots of different colors
 - To be most healthy, it’s important to ‘Eat a Rainbow!’ of fruits and vegetables – eat different *naturally occurring* colors every day to help your body get a complete range of nutrients

- Try to make half of your plate fruits and veggies at each meal

Activity 1 (Grades K-2): “Now we’re going to play another game!”

- Put 6 cutouts (1 for each color) around the room: a red heart; orange eyes; yellow smiley; green bones/teeth; blue brain. (*Refer to Appendix 1-a*)
- “I am going to call out the health benefit of each color food one at a time. Then you will go stand by the sign that you think matches the health benefit. Ready?” (e.g. “This color food keeps your heart strong”).
 - **Red:** This color food keeps your **heart** strong
 - **Orange:** This color food keeps your **eyes** healthy
 - **Yellow:** This color food helps **keep you from getting sick**, & keeps you happy & healthy
 - **Green:** This color food helps make your **bones** and **teeth** strong
 - **Blue/Purple:** This color food helps your **memory**
 - **(White:** Lowers high **blood pressure** and fights against **disease**)

Activity 2:

- Use the posters from Appendix 1-b. There is one for each color of the rainbow. The red poster is filled with pictures of red fruits and veggies; the orange poster is filled with pictures of orange fruits and veggies; etc. (*Optional: Display the poster from Appendix 1-c on the Promethean at the front of the room during this activity.*)
- Hold up the red poster.
 - Ask students to raise their hand if they can name a fruit or vegetable pictured on the poster.
 - Once the students have named all of the pictured red fruits and vegetables, ask if they have any to add that weren’t included.
 - Next, explain and act out the health benefit of red fruits and veggies.
 - Repeat: “Red is good for my heart”
 - Action: Pound hand over heart and say buh-boom a few times.
 - Have students repeat the health benefit back to you, and then act it out with you multiple times.
 - Then call out a red fruit or veggie, and have the students act out the health benefit of that food.
 - Example: “If I say, ‘red strawberries!’ what do you do?” Students then go buh-boom over their hearts.
- Repeat with the orange poster, then yellow, green, and blue/purple.
 - After each round, review the previous colors by calling out different colored fruits and vegetables that we’ve already learned about (e.g. “Red tomatoes!” or “Green broccoli!”), and have students act out that color’s health benefit. To make it a little harder for older grades (3-4), don’t say the color – just say “tomatoes!” or “broccoli!” and have the students act out the health benefit.
 - Red
 - Repeat: “Red is good for my heart”

- Action: Pound hand over heart and say buh-boom a few times.
- Orange
 - Repeat: “Orange is good for my eyes”
 - Action: Put palm perpendicular to forehead (like a salute) and look around the room as if searching
- Yellow
 - Repeat: “Yellow, sick no more”
 - Action: Dance/run/jump around
- Green
 - Repeat: “Green is good for my teeth and bones”
 - Action: Wiggle (your bones) and smile (show your teeth)
- Blue/Purple
 - Repeat: “Blue and purple are good for my brain”
 - Action: Jump up & say “ding!” while making a lightbulb turning on motion w/ your hand
- Lastly, have students taste a fruit/veggie of each color of the rainbow (e.g. tomatoes, carrots, corn, cucumbers, blueberries), passing each color out one at a time. In order to get their taste, they must act out and tell you what that color fruit/veggie is good for.

Tasting the Rainbow:

- Materials:
 - Tasting cups (1 per student)
 - Red: cherry tomatoes
 - Orange: carrot sticks
 - Yellow: corn
 - Green: cucumbers or broccoli
 - Blue/Purple: blueberries
- Preparation:
 - Portion out one serving of each color food into the tasting cups (so each cup has a rainbow of fruits and veggies in it)
 - Pass one tasting cup out to each student – but instruct them not to eat the food yet
 - Let students know that you hope they’ll try everything, but that it’s okay if they don’t like it. Introduce the “Two-Bite Club.” Explain “Don’t yuk my yum.”
 - The “Two-Bite Club” means that even if you don’t think you’ll like the food, at least give it two brave bites just to see what you think – one bite to test it out, and the second bite to solidify how you think it tastes. Once you’ve taken two bites, you’re in the Two-Bite Club!
 - “Don’t yuk my yum” means that when trying new foods, there will likely be some people who like it and some who don’t like it. If you happen to try the food and dislike it, you don’t want to hurt the feelings of someone who does like it by saying something like,

“Ewww!” or “Gross!” Instead, it is more polite to say something like, “It’s not my type” or “It’s not for me.”

- Tasting:
 - As a class, taste each color food together, one color at a time
 - For each color food, ask:
 - What does it smell like?
 - What does it feel like?
 - What does it taste like?
 - At the end of the tasting, ask:
 - Which is your favorite? (Look for some of these foods on your school salad bar!)

Edible Plant Parts Lesson:

Materials:

- Plant Part Poster (Appendix 2-a)
- Plant Part Cutouts (Appendix 2-b)
 - Roots (5)
 - Stems (5)
 - Leaves (5)
 - Flowers (5)
 - Fruits (5)
 - Seeds (5)
 - Sun (1)
- Plant Part Song Lyrics (Appendix 2-c)
- Edible Plant Parts Posters (Appendix 2-d)
- Plant Part Ingredient Labels (Appendix 2-e)

Warm-Up:

- **ASK:** Who likes plants? What is your favorite plant?
- **SAY:** Today we are going to learn about plant parts you can eat! There are six different plant parts, and each part has an important job to do to help the plant grow, survive, or make more plants (reproduce).
- **DO:** Using the Plant Part Poster (Appendix 2-a) as a visual aid, introduce the six basic plant parts and functions:
 - **Roots** – Hold the plant in the ground. Get water and nutrients (e.g. vitamins and minerals) from the soil.
 - **Stems** – Support the plant. Move water and nutrients throughout the plant.
 - **Leaves** – Use sunlight to make food for the rest of the plant.
 - **Flowers** – Make seeds. Attract birds, insects, and other pollinators.
 - **Fruits** – Protect the seeds. Disperse seeds.
 - **Seeds** – Make new plants—“reproduce” themselves.
- **Play:** Plant Part Song:
 - “Roots, Stems, Leaves, Flowers, Fruits, & Seeds” – by the Banana Slug String Band
<http://bananaslugs.bandcamp.com/album/singing-in-our-garden>
 - Complete Lyrics: [Click Here](#)
 - *Chorus:*
Roots, stems, leaves, flowers, fruits, and seeds
Roots, stems, leaves, flowers, fruits, and seeds
That’s six parts, six parts
Six plant parts that plants and people need.
 - (1) Teach Song Chorus/Movements (*display lyrics from Appendix 2-c*)

- Movements: Roots (touch the ground), Stems (grab your legs), Leaves (make jazz hands), Flowers (make a circle with your arms above your head), Fruits (make a “V” with your arms above your head, and shape your hands into fists), and Seeds (wiggle your fingers all the way down to the ground like seeds falling)
- (2) Play Song – sing along and act it out together
- (3) Start slow and get progressively faster with each chorus repetition

Activity 1: Plant Part Factory (*adapted from UC Davis Children’s Garden Program*)

- Students create a “Plant Part Factory” to act out the functions of the different plant parts.
- Pass out one plant part cutout (Appendix 2-b) to each student, and explain the role of each of the parts. Have students practice the parts as they are described. As the teacher, you are the sun cutout.
 - **Roots** – Sit or lie down on the ground and make a very loud slurping, sucking sound to represent absorbing water and nutrients from the soil.
 - **Stems** – Stand up straight and tall to represent supporting the plant and move their arms up and down, while chanting “up and down, up and down” to represent moving water and nutrients throughout the plant.
 - **Leaves** – Reach towards the sun, as if they are grabbing something, then make a stirring motion and chant “take and make, take and make” to represent taking energy from the sun and making food for the plant.
 - **Flowers** – Wave their props around and chant “Hey bee, look at me!” to represent attracting birds, insects and other pollinators.
 - **Fruits** – Make a “rocking the baby” motion to represent protecting the seeds, and chant “Rock-a-bye-baby, Rock-a-bye-baby”.
 - **Seeds** – Jump out from the plant and crouch down to the ground. Then slowly stand up raising your arms. Chant, “Pop out, grow up!” to represent seed falling and the growth of a new plant.
- Once everyone knows their part, it’s time to assemble the plant part factory. Make sure you have enough open space for the whole group to gather. Call up the roots and ask them to start doing their action, and then add the stems, leaves, etc. until you have a complete plant part factory. This may be loud and chaotic!
- It’s useful to use the sun as a cue for moderating or ending the activity. Since the leaves can’t do their job without sunlight, when the sun goes down or is covered by a cloud, it’s time for the plant part factory to take a break.
- You may want to repeat the activity, allowing students to act out a different role.

Activity 2: Name that Plant Part

- Did you know that we eat plant parts every day?
 - Use the Edible Plant Part – Food Posters (Appendix 2-d). Explain that for each food you hold up, the students will try to guess which part of the plant it is.
 - Example: Hold up the poster of the beets. Ask students which part of the plant beets are (the root). Hold up the poster of the celery. Ask students which part of the plant

celery is (the stem). Hold up the poster of the broccoli. Ask students which part of the plant broccoli is (the flower). Etc.

Plant Part Burritos:

- **Materials:**
 - Bowls and spoons for each ingredient
 - Disposable gloves
 - Paper plates
 - Knife
 - Cutting board
- **Ingredients:**
 - Root: Shredded Carrots
 - Stem: Chopped Celery
 - Leaf: Whole Lettuce leaves (large)
 - Flower: Broccoli Florets
 - Fruit: Tomatoes
 - Seed: Sunflower Seeds
 - Hummus, Ranch, or other dressing
- **Preparation:**
 - Prepare the ingredients if not already washed/chopped/cut/shredded.
 - Place each ingredient into a bowl with a spoon, on a table at the front of the classroom. Place a Plant Part sign (Appendix 2-e) next to each bowl (the “Roots” sign goes next to the carrots, the “Flowers” sign goes next to the broccoli, etc.).
 - Pass a paper plate to each student
- **Explain:**
 - “Now you will all make and taste a burrito that contains all 6 of the plant parts!”
 - Call students to line up at the table in the front of the classroom
 - As they go down the line, they will fill their lettuce leaf with carrots, celery, broccoli, tomatoes, sunflower seeds, and dressing
 - Let students know that you hope they’ll try it, but that it’s okay if they don’t like it. Review “Don’t yuk my yum.”
- **Eat & Enjoy!**
 - Once everyone has their plant part burrito, have students say “To plant parts!” and then eat their burritos!

Go, Grow, Glow Lesson:

Materials:

- Go, Grow, Glow Poster (Appendix 3-a)
- Go, Grow, Glow Food Posters (Appendix 3-b)
- Go, Grow, Glow Chart Poster (Appendix 3-c)

Warm-Up:

- **ASK:** What does food do for us?
- **EXPLAIN:** Different foods help our bodies in different ways.
 - **(A) Whole grains**, like whole wheat bread, brown rice, corn tortillas, oatmeal, or whole grain pasta, are full of carbohydrates that help us **GO**. They give us energy to run, play sports, dance, and other things like that.
 - **ASK:** What do you like to do that falls into the GO category (What’s your favorite thing to do at recess?)? (E.g. playing soccer, dancing, etc.)
 - “A whole grain is a cereal grain that contains the germ, endosperm, and bran, in contrast to refined grains, which retain only the endosperm.”
 - **(B) Protein-rich foods**, such as meat, fish, beans, nuts, and dairy, help us **GROW**. They help our bodies build muscle.
 - **ASK:** What are you excited to do when you grow older?
 - **(C) Fruits & Vegetables** are full of vitamins and minerals that help us **GLOW** with health. They help us fight off illness and disease, and also help our skin and hair look healthy.
 - **ASK:** Share the things you do or places you go where you like to look and feel your best.
- **REVIEW:** (use Go, Grow, Glow Poster (Appendix 3-a))
 - Go Foods: Whole Grains (carbohydrates) – give you energy (“Help me run, jump, + play all day”)
 - Grow Foods: Healthy Proteins (beans, dairy, nuts, etc.) – build your body (“Help me grow bigger and stronger”)
 - Glow Foods: Fruits and Vegetables (vitamins and minerals) – make you healthy (“Make my hair shine and my eyes sparkle”)

Activity 1: Name that Go, Grow, Glow

- Pass each student a picture of a different food (Appendix 3-b). Give students time to think about whether their food is a GO, GROW, or GLOW food. Then go around the circle and have each student share what their food is, if it’s GO/GROW/GLOW, and why.
 - **Go Foods:** Whole wheat bread, Brown rice, Corn tortillas, Oatmeal, Whole grain pasta/crackers
 - **Grow Foods:** Chicken, Fish, Beans, Nuts, Dairy (milk, yogurt, cheese)
 - **Glow Foods:** Fruits & Vegetables

Activity 2: Act Out that Go, Grow, Glow

- Have students stand in a circle. Use posters from Appendix 3-b again. If you say (and hold up a picture of) a food that fits into the GO category, then they run in place (energy); if you say a food that fits into

the GROW category, then they jump as high as they can (strong muscles); if you say a food that fits into the GLOW category, then they strike their best model pose (healthy skin, eyes, hair).

- Say “statue” in between each round so that they get as still and quiet as they can before the next food

Activity 3: Create a Go, Grow, Glow Meal or Snack

- Have students think about and then share their own ideas for Go, Grow, Glow snacks using whole grains, protein-rich foods, and fruits and vegetables they like. Ideas might include: crackers with fruit and cheese; sandwiches with meat and vegetables in them; salad with beans, veggies, and croutons; cereal/oatmeal with milk and fruit; or corn tortillas with bean dip and fresh salsa.
- Project the Go, Grow, Glow Chart Poster (Appendix 3-c) at the front of the room. Give each student a turn to walk to the front of the room with a pointer stick, and pick one food from each category to create their Go, Grow, Glow meal/snack.

Go, Grow, Glow Sticks:

- Materials:
 - Toothpicks
 - 3 bowls
- Ingredients:
 - Whole grain bread, cut into cubes
 - Mozzarella, cut into cubes
 - Grape or cherry tomatoes
- Preparation:
 - Put each ingredient into a bowl.
 - Instruct the students to sit in a circle.
- Explain: Now we are going to make and enjoy “Go, Grow, Glow Sticks!” This is just one of many Go, Grow, Glow snack options.
 - (1) Hand a toothpick to each student in the circle
 - (2) Pass the bowl of bread cubes around the circle. Have students add a bread cube to their toothpicks. *What type of food is this? (a GO Food!) How did you know? What other GO Foods do you like?*
 - (3) Pass the bowl of mozzarella cubes around the circle. Have students add a mozzarella cube to their toothpicks. *What type of food is this? (a GROW Food!) How did you know? What other GROW Foods do you like?*
 - (4) Pass the bowl of tomatoes around the circle. Have students add a tomato to their toothpicks. *What type of food is this? (a GLOW Food!) How did you know? What other GLOW Foods do you like?*
- Eat & Enjoy!
 - (5) Gather in a circle with Go, Grow, Glow Sticks in hand, and enjoy your snacks together!
 - Let students know that you hope they’ll try everything, but there’s no need to finish it if they don’t like it. Review “Don’t yuk my yum.”

U.S. Food System Lesson:

Materials:

- Supply Chain Nametags (Appendix 4-a)
- Life of an Apple Script (Appendix 4-b)
- Apple Supply Chain Pictures (2 sets) (Appendix 4-c)
- Diagram 1: Farm → Farmers Market → Consumer (Appendix 4-d)
- Diagram 2: Farm → Factory → Delivery → Grocery Store → Consumer (Appendix 4-e)
- Red, Green, and Yellow Apple Posters (Appendix 4-f)

Warm-Up:

- **ASK:** Where does food come from?
- **DO:** Hold up an apple, and ask if anyone can guess how many pairs of hands that apple touched on its way from the farm to your classroom. “Apples don’t have legs – they can’t walk from the farm to the processing facility to the grocery store, etc.” What are the 5 main steps that an apple takes to get from the farm to your plate? (Use the diagram poster from Appendix 4-e)
 - (1) Farm
 - (2) Factory (Processing/Washing)
 - (3) Delivery
 - (4) Grocery Store
 - (5) Eater/Consumer (You!)

Activity 1: Supply Chain Theater

- Grades K-2
 - **SAY:** Today we are going to learn how an apple seed becomes the apple you eat! I’m going to tell you the story of an apple’s journey to your plate, and you are all going to act out the story with me! Ready?
 - **DO:** Tell and act out the journey of an apple with the students:
 - Everyone imagine that you are an apple seed buried in the soft dirt.
(*Sit down on the ground*)
 - As we start to grow above the ground, we realize that we are on a farm full of apple trees!
(*Slowly stand up to crouching and look around*)
 - Then we become big apple trees with long branches that reach high into the sky.
(*Stand completely upright and reach arms up high to the sky*)
 - As apple trees, we have a good life. We sunbathe in the warm sun, and the nice farmer takes good care of us, making sure that we always have water to drink.
(*Act like you’re sunbathing and drinking water*)

- We are now big beautiful trees with strong branches, and on our strong branches, little baby apples start to grow.
(Everyone make muscle arms and examine their arm branches)
- The baby apples grow into big, juicy, red apples. Now, everyone imagine that you are one of the apples on your apple tree.
(Everyone moves their arms from branches to a circle above their heads to represent an apple)
- Now the farmer comes along one day and picks us right off of the apple trees! He puts us all in one big barrel full of other apples just like us!
(Everyone hop from a standing position to a sitting position, as if sitting in a barrel)
- Once the barrel of apples is full, a truck driver comes along and loads all of us apples into his big truck.
(Act like you're climbing into a truck)
- The truck driver then drives us to a building and drops us off there so that we can all get washed and packaged.
(Everyone act like they're taking a shower, getting a sticker put onto them, and getting put into boxes)
- Now that we've all been processed, a new truck driver arrives & loads us into his truck.
(Wave to the new truck driver, and act like you're climbing into a truck)
- The truck driver then drives us all to the grocery store! At the grocery store, the workers take us out of the boxes and put us on display with all of the other fruits and vegetables.
(Everyone strike a model pose as if you're on display)
- Customers come into the store and put us in bags so that they can buy us to eat! We try to look our best so that the customers will choose us to take home.
(Everyone flash your biggest smile & do the royal wave so that the customers pick you)
- Now that the customer has bought a big bag of apples with all of us in it, he/she takes us home, washes us, and then takes a big crunchy bite!
(Everyone make your loudest crunching noise)

- Grades 3-4

- **SAY:** Today we are going to learn how an apple seed becomes the apple you eat! We are going to stage a production called "The Life of an Apple" in order to act out the apple's journey to your plate. First, I'm going to ask for 10 brave volunteers to be my actors (Hand each actor a name tag from Appendix 4-a). Everyone else is going to be a narrator – the actors are only allowed to do what you tell them to do. Ready? *(Display "Life of an Apple Script" from Appendix 4-b at the front of the room)*
- **DO:** Act out the journey of an apple with the students' help:
 - Ask for 10 volunteers, and give them nametags to show their roles: Apple Seed, Apple Tree, 2 Apples, Farmer, Truck Driver 1, Factory Worker, Truck Driver 2, Grocery Store Worker, Consumer

- Remind the actor volunteers that they must act out what their fellow students in the audience direct them to do
- You as the teacher start off the story, “Once upon a time, Farmer (student’s name) owned a beautiful apple farm in San Diego called (ask, “What should our farm be called?”) .”
- Prompt the student narrators to raise their hands to narrate each next step in the story.
 - “One day, Farmer plants an apple seed on the farm”
 - “Farmer waters the seedling often, and slowly the apple seed grows into an enormous, strong, leafy apple tree”
 - “Apple blossoms begin to bloom on the apple tree”
 - “The flowers turn into apples! Delicious apples hang from one of the tree’s many branches”
 - “Then one day, Farmer comes along and picks the apples from the tree, putting them in barrels”
 - “Truck Driver (1) loads the barrels of apples onto his/her huge truck”
 - “Truck Driver (1) drives the apples to a factory where they can get processed”
 - “At the factory, Factory Worker throws away the apples he/she doesn’t like, washes all of the dirt off of the apples, puts stickers on them, and packages them”
 - “Then Truck Driver (2) loads the apples onto his/her truck and drives them to the grocery store”
 - “Grocery Store Worker takes the boxes of apples and puts them on display inside the store”
 - “Now Consumer is at home and she starts feeling hungry. He/she suddenly craves an apple, and knows that he/she must have one immediately!”
 - “So Consumer gets in the car and drives to the grocery store”
 - “At the store, Consumer examines the apples on display, looking for the juiciest, crunchiest one”
 - “Consumer finally chooses an apple, and takes it to the cash register in order to buy it from Grocery Store Worker ”
 - “After waving goodbye to Grocery Store Worker , Consumer takes his/her prized apple home, slices it up, and eats it!”
 - “The End”
- Review (All Grades):
 - And that’s the story of how an apple gets from the farm to your plate! We went through 5 main stages. Can anyone tell me what they are?
 - **(1)** Farm
 - **(2)** Processing (Factory)
 - **(3)** Transportation/Delivery
 - **(4)** Grocery Store

- (5) Consumer

Activity 2: Back to the Source

- **Ask:** What foods do you like to eat that are made from apples?
 - Examples: Applesauce, apple juice, apple NutriGrain bars, apple pie, apple chips, dried apples
- **Challenge:** Do you think you can help me trace these apple foods all the way back to the apple seed that they came from?
 - (Grades K-2): Disperse one set of apple supply chain cards (Appendix 4-c) throughout the classroom to create 1 station per card.
 - First, ask students to stand by the card that they think comes first in the apple supply chain. Once every student has chosen a card, ask students to share with the other students at their station why they chose that card. Then ask one student from each station to explain to the whole class why they chose the card that they did. Last, explain who got it right and why.
 - Repeat 9 more times with each step of the apple supply chain.
 - (Grades 3-4): Split class into 2 teams. Give each team one set of apple supply chain cards (Appendix 4-c). Instruct students to put the cards in order as quickly as they can, and then raise their hands when they're finished. Once both teams have finished, ask one student from each team to explain to the class how and why they ordered their cards the way they did. Fix their supply chains as a class if out of order.

Activity 3: Supply Chain Comparison

- How would these steps change if the customer buys the apples from a farmers market instead of from a grocery store?
 - May need to ask/explain what a farmers market is
 - Use 2 diagrams to explain (Appendix 4-d and 4-e)
 - Topics to Cover:
 - Freshness of the produce
 - Amount of money that gets paid to the farmers
 - Fewer steps means fewer chances for food borne illness – fewer hands and machines touching the produce
 - Food is grown for transport vs. for taste
 - We need food every day. The food supply chain ensures that we have enough food even when the foods we enjoy are not in season (pineapple, oranges, tomatoes, etc.) – especially in densely populated cities where there is less farmland.

Apple Taste Test:

- Materials:
 - 3 bowls
 - Napkins

- Cutting board
- Knife
- Ingredients:
 - Apples – 3 kinds
 - Granny Smith (green)
 - Gala, Fuji, or Red Delicious (red)
 - Golden Delicious (yellow)
- Preparation:
 - Wash and slice the apples so that there is at least one taste of each apple for each student.
 - Place each kind of apple in a different bowl.
- Explain:
 - Now that you have learned all about the journey an apple takes from the farm to your plate, we are going to taste 3 different types of apples!
 - It can be fun to talk about where you bought these apples (a grocery store, a farmers' market, etc.)
 - Distribute a napkin and 1 taste of each apple to each student. Make sure they don't eat them.
 - Once every student has their apples, ask them to describe each type of apple before tasting one (e.g. start with Granny Smith apples, describe them, taste them; then repeat with Golden Delicious apples, etc.):
 - Colors – What color is it?
 - Textures – How does it feel?
 - Smells – How does it smell?
 - Tastes – How does it taste?
 - Ask students to vote for their favorite
- Extend: Blind Taste Test (*if you have extra apple slices*)
 - Call each student up one at a time
 - Have them close their eyes and hold out their hands. After showing the rest of the class which color you've selected, put a red, green, or yellow apple wedge in the hands of the student
 - Have the student touch, smell, and taste the apple (eyes closed) – & then guess which color it is

Activity 4: Red Apple, Green Apple (*if time permits*)

- Take the red, green, and yellow apple posters (Appendix 4-f) and have the students move to an area where they can be active.
- Explain: "We are going to play a game called Red Apple, Green Apple! I am going to tell you to move in a certain way and I only want you to do it if I am holding up the green apple. This apples means go. If I hold up the red apple that means I want you to stop. And if I hold up the yellow apple I want you to move very, very slowly. Don't worry if you mess up, just try again!"
- Once all of the children understand the rules, play the game, picking a new movement for each round, such as: hop on one foot, jump up and down, spin in a circle, do the wave, march in place, do jumping jacks, dance in place, etc. Continue playing several times.

Seeds & Healthy Cooking Lesson:

Materials:

- 1 Seed Cycle Poster (Appendix 5-a)
- 4 Grains/Beans/Nuts/Seeds Posters (Appendix 5-b)
- 2 Plant/Seed/Food Chart Posters (Appendix 5-c)
- 1 Go/Grow/Glow Poster (Appendix 3-a)
- Honey Seed Snacks Recipe Cards (Appendix 5-d)
- Ashley the Apple (or other fruit/vegetable themed toy)

Warm-Up:

- **ASK:** What is a seed? (*Use Seed Cycle Poster from Appendix 5-a*)
 - It's fun to compare a seed to a human baby, talking about how each already contains all of the parts it will have when it is full grown.
 - The seed of a plant allows the plant to make MORE plants like itself. Seeds allow the plant to **reproduce**.

Activity 1: Edible Seeds

- Which seeds can we eat? (*Use Grains/Beans/Nuts/Seeds Posters from Appendix 5-b*)
 - Display the Seeds poster. "Edible seeds are the seeds of various plants: sesame seeds, poppy seeds, sunflower seeds, chia seeds, flax seeds, mustard seeds, cumin seeds, hemp seeds, etc." Ask if anyone has eaten any of the seeds on the poster.
 - Display the Grains poster. "Grains are the seeds of grasses: wheat, corn, oats, and rice." Ask if anyone has eaten any of the grains on the poster.
 - All grains are seeds, but not all seeds are grains
 - Display the Beans poster. "Beans are the seeds of legumes: peas, lentils, soybeans, and chickpeas." Ask if anyone has eaten any of the legumes on the poster.
 - All beans are seeds, but not all seeds are beans.
 - Display the Nuts poster. "Nuts are the seeds of trees: walnuts, hazelnuts, pecans, almonds, cashews, pistachios, etc." Ask if anyone has eaten any of the nuts on the poster.
 - All nuts are seeds, but not all seeds are nuts.

Activity 2: Name that Seed

- Name that Seed: (*Use Plant/Seed/Food Chart Posters from Appendix 5-c*)
 - Explain that each row shows a different type of seed, the plant that it grows from, and a food we eat that is made from the seed
 - Reveal one row at a time. Ask students if they can guess what the name of each seed is.
 - Answers (in order): sunflower seeds, pomegranate seeds, poppy seeds, pumpkin seeds, sesame seeds, mustard seeds, black beans, oats, wheat, almonds

Activity 3: Favorite Seeds

- What seeds do YOU eat? (*Use stuffed “Ashley the Apple” toy*)
 - Who eats seeds?
 - Instruct students to get in a standing circle. Explain that we will throw “Ashley the Apple” around the circle. When you receive the apple, name a seed that you eat, and then throw the apple to someone else and sit down. Continue the game until everyone has had a chance.
 - If kids catch the apple and then look at you blankly, say: Does anyone here like burritos? Did you know that beans are seeds? And tortillas are made from wheat or corn, which are also seeds! What other seeds do you eat? (Share again, and this time add in more common examples, like nuts, rice, pasta, and bread, if they don’t mention those.)

Activity 4: Healthy Seeds

- Why are seeds healthy? (*Use Go/Grow/Glow Poster from Appendix 3-a*)
 - Not all seeds are edible but some are. Edible seeds are especially healthy snacks because they are packed with nutrients for the baby plants they hold inside.
 - They have:
 - Carbohydrates (GO food – which give you energy to run, jump, and play)
 - Protein (GROW food – which helps you grow tall and strong)
 - Vitamins and minerals (GLOW food – which make your hair shine, your eyes sparkle, your skin glow, and your body fight off sickness)
 - Healthy fats (which reduce heart disease and lower bad LDL cholesterol levels)
 - Fiber (which keeps you regular, keeps you fuller longer, & is good for your heart).

Honey Seed Snacks:

- Materials:
 - Disposable gloves
 - Napkins or Paper plates (1 per student)
 - Mixing Spoon
 - 1 large bowl
 - 1 measuring cup with a mark at $\frac{1}{2}$ cup
 - Can also use a $\frac{1}{4}$ measuring cup in order to teach students about fractions (and it’s helpful to use the $\frac{1}{2}$ cup for wet ingredients and the $\frac{1}{4}$ cup for dry ingredients; by using the $\frac{1}{4}$ cup, more students get the opportunity to measure out ingredients)
 - Hand soap & Sink
- Ingredients:
 - $\frac{1}{2}$ cup of each of the following:
 - Carob powder
 - Honey
 - Sunflower Seeds

- Sesame seeds, plus a little more to coat the Seed Snacks
 - Rolled oats
 - Sunflower butter (or any nut or seed butter)
- Preparation:
 - Place the hand soap near the sink
 - Place the bowl, measuring cup(s), and all ingredients on the table at the front of the classroom. Do not have the ingredients pre-measured.
- Explain:
 - You've worked so hard learning about seeds! Let's celebrate with a delicious snack. These Honey Seed Snacks are a healthier alternative to traditional desserts, and they're made entirely from seeds and honey!
- Cooking:
 - Wash your hands well with soap and water and have all students do the same.
 - Have each student or pair of students measure $\frac{1}{2}$ cup of one of the ingredients, and add it into the big bowl.
 - Call 2 student volunteers up at a time to measure each of the 6 ingredients into the bowl (12 volunteers total). Have one student hold the measuring cup and the second student pour the ingredient into the cup.
 - Have 2 students at a time mix the ingredients together with a mixing spoon (one holds the bowl while another mixes, then they switch). While they're mixing, have students share other healthy snacks they enjoy.
 - Call 2 student volunteers up at a time to mix the ingredients (this should be all of the students who didn't get to measure ingredients earlier).
 - Once everything is mixed together, give each student 1 pinch of batter and have them roll it to form a bite-sized ball, about 1 inch in diameter.
 - Students will do this at their desks/tables, on a napkin or paper plate. The ball that they make will be the one that they eat.
 - Continue until all batter is used up.
 - Have students wash hands again, and wash the mixing bowl/spoon.
- Eat & Enjoy:
 - Gather together with your Honey Seed Snacks. "It's time to enjoy your snacks, and these are eaten raw, so they're ready to go!" See if students can remember what we put into the snacks.
 - Let students know that you hope they'll try it, but there's no need to finish it if they don't like it. Brainstorm together some polite things to say in that case, such as "It turns out, I'm not too fond of honey seed snacks...yet."
 - Ask each student to pick up a Honey Seed Snack, and before they eat it, to make a toast to seeds, such as, "To seeds, which give us plants and trees!" or "To seeds, which give us a healthy source of protein!" or "To seeds, which help us go, grow, *and* glow!" or "To seeds, which taste delicious!"
- Close:
 - Distribute a Honey Seed Snack Recipe Card (Appendix 5-d) to each student.

Fruit, Sugar, & Healthy Cooking Lesson:

Materials:

- Sugar Jeopardy Board Poster (display using Promethean board) (Appendix 6-a)
- Sugar Jeopardy Question Visuals (display on Promethean board when asking each question)
 - Grades K-2 (Appendix 6-b)
 - Grades 3-4 (Appendix 6-c)
- Sugar Jeopardy Question Covers (laminated paper pieces to cover up each question on the jeopardy board after it's been chosen) (Appendix 6-d)
- Fruit Smoothie Recipe Cards (Appendix 6-e)
- Ashley the Apple (or other fruit/vegetable themed toy)

Warm-up: (Explain the below in VERY simple terms)

- **ASK:** What is sugar?
 - **What it is:** The food that we call sugar is a carbohydrate called sucrose, which is made up from 2 smaller carbohydrates – fructose and glucose. Glucose is used by our body for energy, and fructose is quickly changed into glucose in our body.
 - **2 Types:** Natural sugar (thumbs up) vs. Added sugar (thumbs down)
 - **What it comes from:** Sugar can come from sugar cane or from the root of the sugar beet plant. Maple syrup (from maple trees) and honey are also almost all made of sugar.
 - **Effects of Sugar:** Too much sugar from foods like candy, doughnuts, cake, soda, etc. will leave you feeling tired and sluggish soon after you eat. Healthy foods like fruit give you the energy you need to play, do well in school, and be active all day long.
 - **Effects of Added Sugar:** Sugar can raise blood pressure and cholesterol levels, and can contribute to diabetes, heart disease, obesity, and tooth decay.
 - **Sometimes Foods:** It's okay to eat sugary foods from time to time – they are “sometimes foods.” Think of them as a special treat instead of an everyday food.
 - **Nutrition Facts Label:** Have you ever seen the Nutrition Facts Label on a food package? That's where you can find out how much sugar is in your food or drink. Look for it on the side or back of the package.
 - Next time you go food shopping with an adult or on your own, look at how much sugar is in a food or drink you would normally buy. See if you can find a similar food with less sugar that you would be willing to try.
- **ASK:** What is fruit?
 - Fruit is *naturally* sweet (fructose) *and* it gives you the healthy stuff you need to grow and be strong. Have it on its own for a snack. Or use it to sweeten lower-sugar versions of your favorite foods, like cereal or yogurt.
 - Got a taste for something sweet? Have fun with fruit! Try a cool and tasty fruit smoothie in place of a sugary drink, snack, or dessert.

- Smoothies are a great way to drink fruit, vegetables, vitamins, and calcium all in one gulp! Smoothies are easy to make. Just use whatever fruit you have, add a little milk or juice, some yogurt, and some ice cubes.
- Smoothie vs. Milkshake – which is healthier?

Activity: Sugar Jeopardy!

- Use the Sugar Jeopardy Board (display on Promethean), the Questions Visuals, and the Question Covers (Appendices 6-a through 6-d)
- Explain the rules of Jeopardy:
 - I will divide the class into 2 teams. Each team will choose a team name (e.g. Team Strawberry!). Each student from each team will have a chance to select a question and try to answer.
 - When it's your turn, hold Ashley the Apple, come up to the front of the room, and select a category and a point amount. Example: "Rethink Your Drink for 200"
 - I will ask you the question and display it at the front of the room. After hearing the question, you can confer with your teammates to come up with an answer. Then "buzz in" to answer by tossing Ashley the Apple to me.

Fruit Smoothies:

- Materials:
 - Blender
 - (Extension Cord if needed)
 - Measuring Cup (½ cup)
 - Tasting Cups (1 for each student)
 - Containers/Bags for frozen fruit
 - Cooler; Ice Packs
 - Sink & Soap OR Hand Sanitizer
- Ingredients:
 - Frozen Strawberries (1 cup)
 - Frozen Blueberries (1 cup)
 - Banana (1 ripe)
 - Orange Juice – made with 100% fruit, no added sugar (1 cup)
- Preparation:
 - Place the blender, measuring cup(s), and all ingredients on the table at the front of the classroom. Do not have the ingredients pre-measured.
- Explain:
 - You've worked so hard learning about fruit and natural vs. added sugar! Let's celebrate with a delicious snack. These fruit smoothies are made entirely from fruit, making them a healthier alternative to milkshakes, sodas, and other sweet drinks. They are healthy, refreshing, creamy, and made sweet entirely from natural sugar!
- Cooking:

- Keep it Clean:
 - Wash your hands well with soap and water and have all students do the same.
- Introduce the Ingredients:
 - Ask students if they can name the ingredients as you pull them out and show them to the class.
 - Point out that some of the ingredients are fresh and some are frozen. How are frozen and fresh ingredients [different](#)? How do the students think the frozen ingredients will affect the smoothies?
 - Frozen fruit = thicker smoothie consistency
 - Explain the best order of adding ingredients to the blender in order to ensure the smoothest blend
 - (1) Liquids – e.g. water, juice, yogurt
 - (2) Soft fruits & vegetables – e.g. ripe bananas
 - (3) Frozen Ingredients – e.g. frozen strawberries and blueberries
- Introduce the Equipment:
 - Ask students if they can name the kitchen tools as you pull them out and show them to the class (blender, measuring cups)
 - Demonstrate the proper way to use a blender and emphasize that an adult must always help them.
 - Lock the **lid** firmly in place before starting the machine.
 - Pour in liquids first and ice/frozen fruit last.
 - Start with the lowest **blender speed** and work up to higher speeds once the mixture smooths out.
 - Freeze fruit for a thicker consistency. Chop first for easier blending.
- Measuring the Ingredients:
 - While preparing the smoothies, discuss how much healthier and tastier it is to enjoy a fresh fruit smoothie than a commercially bought frozen dairy drink
 - Call 7 students up one at a time (using the class name cards or popsicle sticks) to measure the ingredients, and add them into the blender.
 - 1st student = measures ½ cup frozen blueberries
 - 2nd student = measures ½ cup frozen blueberries
 - 3rd student = measures ½ cup frozen strawberries
 - 4th student = measures ½ cup frozen strawberries
 - 5th student = washes their hands well, unpeels the banana, and adds the banana to the blender in chunks
 - 6th student = measures ½ cup orange juice
 - 7th student = measures ½ cup orange juice
 - You can make multiple rounds of smoothies using this recipe if desired (depending on how many students you have and how much smoothie you want each student to get)
- Blending the Ingredients:

- Blend the ingredients in a place where all students can see. Show students the different settings on the blender, and how to hold the blender and lid with both hands while blending.
 - Continue until the smoothie is blended, smooth, and creamy.
- Serving the Smoothie:
 - Pour the finished smoothie into the tasting cups, and distribute one cup to each student.
- Drink & Enjoy:
 - Gather together with your Fruit Smoothies.
 - Let students know that you hope they'll try it, but there's no need to finish it if they don't like it. Brainstorm together some polite things to say in that case, such as "It turns out, I'm not too fond of smoothies...yet." Review "Don't yuk my yum."
 - Ask each student to raise their smoothie cup and make a toast to fruit, such as, "To fruit, which is naturally sweet!" or "To fruit, which keeps us healthy!"
- Close:
 - Discuss why fruit is healthy for us, compare natural vs. added sugars, and recount the ingredients in our fruit smoothie.
 - Distribute Fruit Smoothie Recipe Cards (Appendix 6-e) to students who want to take it home.

Vegetables & Healthy Cooking Lesson:

Materials:

- Vegetable Question Posters (Appendix 7-a)
- Deck of Vegetable Playing Cards (Appendix 7-b)
- KEY Poster for Vegetable Cards (Appendix 7-c)
- “I am...” Prompt Cards (Appendix 7-d)
- Vegetable Song Lyrics Poster (Appendix 7-e)
- Kale Salad Recipe Cards (Appendix 7-f)

Warm-Up: (Use Vegetable Question Posters from Appendix 7-a)

- **ASK:** What are vegetables?
 - Vegetables are foods like broccoli, carrots, green beans, sweet potatoes, spinach, corn, etc.
 - Vegetables are the roots, stems, leaves, flowers, and sometimes seeds of plants. The fruits of plants develop from a flower and contain seeds (e.g. tomato, bell pepper, cucumber, zucchini, squash, eggplant, etc.)
- **ASK:** Why are vegetables healthy?
 - Vegetables give us **fiber** which fills our stomachs (making us feel full) and helps our hearts.
 - Vegetables give us vitamins. Vegetables like carrots, broccoli, and spinach give us Vitamin A which is good for healthy skin and eyes.
 - Vegetables are low in calorie and fats but contain good amounts of **vitamins** and **minerals**. All the Green-Yellow-Orange vegetables are rich sources of calcium, magnesium, potassium, iron, beta-carotene, vitamin B-complex, vitamin-C, vitamin-A, and vitamin K.
 - Vegetables contain many **antioxidants** – these help protect the human body from diseases and cancers, and help the body develop the capacity to fight against these by boosting immunity.
 - Eating a variety of vegetables is important because different vegetables have different nutrients (“Eat a Rainbow”).
- **ASK:** How many vegetables should you eat in a day?
 - You need to eat at least 2½ cups of vegetables every day (5 servings – each serving is ½ cup).
 - Think about the size of a baseball. Or the size of your 2 palms held together like a bowl. Or make a fist with your hand. That is the size of about 1 cup of vegetables.
 - You should try to eat at least 1 dark green vegetable or one orange vegetable each day. Broccoli, spinach, and kale are dark green veggies. Carrot and sweet potatoes are orange veggies.
- **ASK:** What are some different ways to prepare vegetables?
 - Steam them, microwave them, roast them, stir fry them, sauté them, grill them, etc.
- **ASK:** What are some different ways to eat vegetables?
 - Breakfast
 - Leafy greens in your smoothie
 - Spinach in your scrambled eggs or omelet

- Toast topped with veggies
- Lunch
 - Salad
 - Sandwich/Wrap/Burrito/Taco with veggies
 - Pizza with vegetable toppings
- Snacks
 - Veggies with Dip (Hummus, Ranch, etc.)
- Dinner
 - Pasta with veggies (or spiralized veggie noodles!)
 - Vegetable lasagna
 - Stir fry with vegetables (& rice)
 - Grilled vegetable kabobs
 - Soup with vegetables

Activity 1: Vegetable Card Game

- Give each student a Vegetable playing card (Appendix 7-b)
 - Each card will have pictures to indicate the vegetable's: color, health benefits, ways to eat, and part of the plant. Use the KEY Poster (Appendix 7-c) to describe to the class what each picture on the cards means.
 - For each round, call out a different trait of vegetables using the prompt cards (Appendix 7-d). Instruct the students to stand up, spin around, and sit back down (or do a jumping jack, run in place, jump as high as they can, etc.) if their vegetable matches that trait. Then have the students who stood up tell the class what their vegetable is. For example, if you say, "I am...healthy for your heart," then all of the students with a vegetable card that has a heart on it would stand up. The students who stood up will then go around and reveal what their vegetables are (e.g. Tommy Tomato, red Peter Pepper, Benny Beet, etc.)
 - I am... (red, orange, yellow, green, purple, white)
 - I am healthy for your... (heart, eyes, fighting off diseases, bones and teeth, memory)
 - I am yummy in a... (salad, sandwich, stir fry, soup, lasagna, pizza, with a dip)
 - After each "I am yummy in..." round, ask anyone to stand up who thinks their vegetable would also be yummy eaten that way, even though it didn't say it on their veggie playing card (e.g. Carrie Carrot may think she's also good in a salad or in a stir fry, even though her card says that she's yummy with a dip).
 - I am the... (root, stem, leaves, flower, fruit, seed)... of a plant
- Collect the Vegetable playing cards

Activity 2: Vegetable Song-&-Dance *(if time permits)*

- Get in a circle and Explain the game:
 - A call-and-response song in which I will call out to each of you by your vegetable name (based on the card you are holding), and you will respond with some original dance moves!
 - Display the lyrics poster (Appendix 7-e) at the front of the room).

- Demonstrate an example:
 - ALL: Veg-ta-ble, Veg-veg-ta-ble, Vegetable!
ALL: Veg-ta-ble, Veg-veg-ta-ble, Vegetable!
ME: Hey Carrie Carrot,
YOU: Hey What
ME: Show Me How
YOU: How to What
ME: How to Eat
YOU: Eat a What
ME: Eat a Carrot!
YOU: Right on – my hands are high, my hands are low, and this is how I eat a carrot.
(make up a dance move)
ALL: His/her hands are high, his/her hands are low, and this is how he/she eats a carrot!
(imitate dance move)
- Repeat for each vegetable in the deck of veggie cards, so that each student gets a turn

Kale Salad:

- Materials:
 - Measuring Spoons
 - Measuring Cup (1/4 cup)
 - Plastic Forks & Tasting Cups (1 per student)
 - Disposable gloves (to use when portioning out the salad into cups)
 - 1 large Mixing Bowl
 - 1 Colander (to wash kale) + Paper Towels (to dry)
 - Sink/Soap for handwashing
- Ingredients:
 - 1 bunch Lacinato kale
 - 2 tablespoons olive oil
 - 1 tablespoon apple cider vinegar
 - ¼ teaspoon salt (optional)
 - ¼ cup Dried Cranberries
 - ¼ cup Pumpkin seeds OR Sunflower seeds
- Explain:
 - Now we are going to make a delicious kale salad, which is a great way to eat some veggies with your meal! Kale is a leafy green that is healthy for you because it is packed with vitamins (very high in Vitamin C and K), minerals (calcium, potassium, magnesium), and antioxidants (like beta-carotene). There are many different types of kale – the kale leaves can be green or purple in color, and have either a smooth or curly shape. The most common type of kale is called curly kale, which has green and curly leaves and a hard stem.
 - How to make a rockin' kale salad:
 - Start with KALE

- Add a FAT (olive oil, avocado, vegetable oil, peanut/almond/sunflower butter, tahini)
 - Add an ACID (apple cider vinegar, balsamic vinegar, red wine vinegar, lemon/lime juice)
 - Add SALT (miso and soy sauce are also great salt substitutes)
 - RATIO: 3 cups Kale : 2-3 tablespoons fat : 2-3 tablespoons acid : salt to taste
- Cooking:
 - (1) Wash and dry kale (you can do this before the lesson if you have time). Instruct all students to wash their hands well with soap and water (after they've washed their hands, tell the students to clasp their hands together into a two-handed fist so that they keep their hands clean while they wait for their turn to help).
 - (2) Tear kale off ribs/stems and add to large mixing bowl (putting ribs/stems aside). Then rip the kale into bite-sized pieces.
 - Demonstrate how and then call up students to help.
 - Discuss ways to use the stalks/ribs/stems instead of throwing them away (e.g. stir fry)
 - (3) Add olive oil, apple cider vinegar, and salt to the mixing bowl.
 - Have 1 student help for each ingredient – student holds the measuring spoon; you pour
 - Explain that vinaigrette is made by mixing oil with something acidic such as vinegar or lemon juice. You can enhance the flavor with salt, herbs, &/or spices. Most vinaigrette recipes call for a 3:1 ratio – 3 parts oil to 1 part vinegar. However, in kale salads – due to the toughness of the leaves – it is best to up the amount of vinegar (2 parts oil to 1 part vinegar), and to add more dressing to kale salads than you would to other salads.
 - (4) Massage kale in bowl until it is tender
 - Demonstrate first: scrunch, release, scrunch, release.
 - Have students massage the kale for 10 seconds each. The rest of the class can count out loud together. Continue until the kale is fragrant, soft, and dark green.
 - Explain that kale is full of Vitamin K which is very important in blood clotting – this comes in handy when you scrape your knee.
 - Explain that massaging the kale breaks down the plant cell walls, turning the leaves a darker green and making the kale more tender and sweet, reducing bitterness.
 - As students are massaging, talk about where you bought the ingredients, where the produce was grown, and recipe variations (e.g. other dressing combos, toppings (nuts, seeds, dried fruit, veggies, cheese), etc.).
 - (5) Add toppings: Dried Cranberries, Pumpkins Seeds
 - Have remaining students add the toppings (2 students)
 - Have 1 student mix everything together in the bowl one last time
 - (6) Portion salad into tasting cups. Distribute 1 tasting cup and 1 fork to each student
- Eat & Enjoy!
 - Go over “Don’t Yuck my Yum”. Let students know that you hope they’ll try it, but that it’s okay if they don’t like it.
 - Have students lift their tasting cups in the air, say “To vegetables!” and then taste their salads!
- Close:
 - Distribute a Kale Salad Recipe Card to each student (Appendix 7-f)

Building Healthy Meals Lesson (fruits/veggies/proteins/whole grains/fats):

Materials:

- Kid's Healthy Eating Plate Poster (Appendix 8-a)
- 5 Healthy Eating Posters (Appendix 8-b)
- Healthy Eating Plate Component Cutouts (Appendix 8-c)
- The Healthy Eating Board Game (Appendix 8-d)
- 1 Dice
- Board Game Player Pieces (Appendix 8-e)
- Kid's Healthy Eating Plate Cards (Appendix 8-f)
- Pinwheel Sandwich Recipe Cards (Appendix 8-g)

Warm-up:

- Display the **Kid's Healthy Eating Plate** Poster at the front of the room (*Appendix 8-a*)
(Copyright © 2015 Harvard T.H. Chan School of Public Health. For more information about The Kid's Healthy Eating Plate, please see *The Nutrition Source*, Department of Nutrition, Harvard T.H. Chan School of Public Health, hsph.harvard.edu/nutritionsource/kids-healthy-eating-plate.)
 - **ASK:** Prompt students to describe what they're seeing. Explain that eating healthy is as simple as using this plate as a model for each meal.
 - Make half your plate full of colorful fruits and vegetables.
 - And split the other half of your plate evenly between whole grains and healthy protein.
 - For your drink, choose water and/or milk.
 - And top off your meal with some healthy fats.
 - In addition to eating healthy, it is important to stay active and get some exercise each day!
 - "Eating a variety of foods keeps our meals interesting and flavorful. It's also the key to a healthy and balanced diet because each food has a unique mix of nutrients – both macronutrients (carbohydrate, protein, and fat) and micronutrients (vitamins and minerals)."
- **Fruits & Vegetables** (*use poster from Appendix 8-b*)
 - Make at least half your plate fruits and vegetables
 - Eat A LOT of veggies! The more the better. Make sure to eat a wide variety of veggies so that your body gets the unique nutrients that each has to offer.
 - Potatoes and French fries do not count as vegetables because they are highly starchy and therefore cause blood sugar to rise rapidly.
 - Eat fruits of all colors of the rainbow. Whole fruits and sliced fruits are the best. Limit fruit juice to no more than 1 small glass each day.
- What are **Whole Grains**? (*use poster from Appendix 8-b*)

- Whole grains vs. refined grains (choose whole grains and minimally processed grains over processed/refined grains).
- **Activity:** *Have students imagine they are whole grains. Have them make a circle with their arms above their heads to represent the outer layer, the bran. Have them rub their stomachs in circles to represent the middle layer, the endosperm. Have them make a fist at their belly button to represent the inner layer, the germ. Explain that all 3 of these healthy parts make up a really healthy whole grain. Now have students drop their arms to their sides as if the bran is being stripped away, and have them rip their fists away from their stomachs as if the germ is being stripped away. Explain that this is what happens when whole grains are turned into refined grains. Refined grains are less healthy because they are missing 2 of their healthy parts – the bran and the germ.*
 - Whole grains = whole wheat (bread, pasta, etc.), brown rice, quinoa, barley, oats (steel-cut or old-fashioned, NOT instant), etc.
 - Contain bran and fiber, which slow the breakdown of starch into glucose – thus maintaining a steady blood sugar rather than causing sharp spikes
 - Contain all 3 parts of the grain: bran (outer layer rich in fiber and B vitamins); endosperm (middle layer that has carbohydrates and proteins); germ (inner layer rich in antioxidants, vitamin E, B vitamins, and healthy fats)
 - Eating whole instead of refined grains significantly lowers total cholesterol, which lowers risk of heart disease
 - Whole grains are good for your digestive health – keeps the stool soft and bulky, helps prevent constipation
 - Refined grains = white bread, white rice, pasta, pastries, pizza crust, etc.
 - When refined grains are processed, they are stripped of valuable nutrients (e.g. vitamins, fiber, etc.)
 - Contain only the endosperm; bran and germ are removed
 - Cause negative spikes in blood sugar
- Carbohydrates
 - Carbohydrates (made up of fiber, starch, and sugar) provide the body with glucose, which is converted to energy used to support bodily functions and physical activity. Some types of carbohydrate-rich foods are better than others:
 - The healthiest sources of carbohydrates – unprocessed whole grains, vegetables, fruits, and beans – promote good health by delivering vitamins, minerals, fiber, and phytonutrients. They take longer to digest – which means they have less of an immediate impact on blood sugar, causing it to rise more slowly.
 - Unhealthier sources of carbohydrates include white bread, pastries, sodas, and other highly processed or refined foods. These items contain easily digested carbohydrates that cause faster rises in blood sugar, and may contribute to weight gain/diabetes/heart disease.

- Glycemic Index: ranks carbohydrates on a scale from 0 to 100 based on how quickly and how much they raise blood sugar levels after eating. Foods with a high glycemic index, like white bread, are rapidly digested and cause substantial fluctuations in blood sugar. Foods with a low glycemic index, like whole oats, are digested more slowly, prompting a more gradual rise in blood sugar.
- What are **Healthy Proteins?** (*use poster from Appendix 8-b*)
 - Protein is found throughout the body – in muscle, bone, skin, hair, and virtually every other body part or tissue. Your body uses protein to build and repair tissues, and to make enzymes, hormones, and other body chemicals. Protein (made up of amino acids) is an important building block of bones, muscles, cartilage, skin, and blood. Eating foods with protein is important for optimum muscle growth.
 - Plant-based proteins; lean animal proteins
 - Plant-based proteins = beans, lentils, peas, nuts, seeds
 - Healthy animal proteins = fish, eggs, poultry
 - Limit red meat (beef, pork, lamb); Avoid processed meats (bacon, deli meats, hot dogs, sausages)
 - Eating even small amounts of red meat on a regular basis is linked to an increased risk of heart disease and stroke. Tell students that red meat and processed meats are “*sometimes meats*,” meaning we should only eat them sometimes.
 - Eating healthy protein sources like fish, chicken, beans, or nuts in place of red meat (including processed red meat) can lower the risk of several diseases and premature death
- What are **Healthy Fats?** (*use poster from Appendix 8-b*)
 - We need to eat fat, as fat is a vital macronutrient. However, it is important to eat the right type of fat.
 - Choose foods with healthy unsaturated fats (e.g. fish, nuts, seeds, avocado, healthy plant-based oils)
 - Extra virgin olive oil, canola oil, corn oil, sunflower oil, peanut oil – use in cooking, on salads and vegetables, and at the table
 - Monounsaturated and polyunsaturated fats lower disease risk
 - Limit foods high in saturated fat (e.g. red meat, butter)
 - Not as harmful as trans fats; but by comparison with unsaturated fats, saturated fats negatively impact health and are best consumed in moderation. Foods containing large amounts of saturated fat include red meat, butter, cheese, and ice cream.
 - Avoid unhealthy trans fats (from partially hydrogenated oils) (e.g. in junk food)
 - Increase disease risk, even when eaten in small quantities. Foods containing trans fats are primarily in processed foods made with trans fat from partially hydrogenated oil. Fortunately, trans fats have been eliminated from many of these foods.
 - Beware of “reduced-fat” and “low-fat” foods. When food manufacturers reduce fat, they often replace it with carbohydrates from sugar, refined grains, or other starches. Our bodies digest

these refined carbohydrates and starches very quickly, affecting blood sugar and insulin levels and possibly resulting in weight gain and disease.

- Rather than eating a low-fat diet, it's more important to focus on eating beneficial "good" fats and avoiding harmful "bad" fats. Choose foods with "good" unsaturated fats, limit foods high in saturated fat, and avoid "bad" trans fat.
- **Healthy Drinks & Dairy** (*use poster from Appendix 8-b*)
 - Choose water often
 - Water is the best choice with your meals, with your snacks, and when you are thirsty from exercising. It's free of sugar, and almost always available.
 - Limit fruit juice to 1 small glass per day
 - Fruit juice can have a lot of added sugar (and even fruit juice without added sugar has a lot of natural sugar)
 - Rarely drink soda, sports drinks, energy drinks, and other sugary drinks
 - These have a lot of calories but virtually no nutrients
 - Drinking a lot of sugary drinks can cause weight gain, and increase the risk of type 2 diabetes, heart disease, etc.
 - Eat small amounts of dairy (unsweetened milk, plain yogurt, cheese)
 - You need less dairy than you do fruits/veggies, whole grains, and healthy proteins. Milk, yogurt, etc. provide calcium (which helps build bones up) and vitamin D (boosts bone health), but research around the intake of dairy products is still developing.
 - While calcium and dairy can lower the risk of osteoporosis and colon cancer, high intake can increase the risk of prostate cancer and possibly ovarian cancer. Plus, dairy products can be high in saturated fat.
 - Good non-dairy sources of calcium include leafy green vegetables and broccoli
 - Limit milk and dairy foods to no more than 1-2 servings per day.
 - Choose unsweetened milk, plain yogurt, and small amounts of cheese
- **Stay Active**
 - A healthy diet is just one part of the equation. Make sure to stay active and integrate physical activity into your daily routine.
- **Summary**
 - Focus on *diet quality* (rather than counting calories). The type of carbohydrate is more important than the quantity (e.g. carbohydrates from vegetables, fruits, whole grains, and beans are much better than carbohydrates from sugar, potatoes, and foods made with white flour). Eat healthy proteins and healthy fats. Limit/exclude sugary drinks, sweets, and other junk foods.

Activity 1: Build a Healthy Plate

- Display Kid's Healthy Eating Plate Poster (Appendix 8-a) at front of room.
- Call groups of 6 students up to the front of the room at a time. Each group of students gets to try to build a healthy plate together – the plate should include all of the components (in the correct

proportions) of the Kid's Healthy Eating Plate: fruits and vegetables ($\frac{1}{2}$ plate), whole grains ($\frac{1}{4}$ plate), healthy protein ($\frac{1}{4}$ plate), healthy fat, healthy drink.

- Assign one component to each student by giving them 1 of the 6 component cutouts (Appendix 8-c), and then they have to come up with a specific food to fit that component for their healthy meal. Tell each group of students whether they are creating a breakfast, lunch, or dinner meal. If they need help coming up with something, you can hold up the poster for their component (Appendix 8-b) to help them pick out a food that fits the category.
 - Example: (dinner)
 - Fruit student chooses apples
 - Vegetable student chooses broccoli
 - Whole Grains student chooses brown rice
 - Healthy Protein student chooses chicken
 - Healthy Fat student chooses Olive oil
 - Healthy Drink student chooses water

Activity 2: The Healthy Eating Board Game (*if time permits*)

- Display the game board (Appendix 8-d) at the front of the room.
- Explain the rules of the game:
 - Split the class into 2-4 teams. Assign each team a Player Piece (Appendix 8-e), and place it on "Start" on the game board.
 - Each student on each team will have a turn to roll the dice, and move ahead that many spaces. Based on the color of the space you land in, you'll name a food that fits into that category. For example, if you land on a green space, name a vegetable (like broccoli). If you land on a red space, name a fruit (like an apple). If you land on a brown space, name a whole grain (like whole grain pasta). If you land on a purple space, name a healthy protein (like salmon). If you land on a yellow space, name a healthy fat (like avocado). If you land on a blue space, name a healthy drink (like water). If you do it correctly, then you stay on the space. If not, then you go back to where you started at the beginning of your turn. To move ahead 1 bonus space on each turn, ask the student to build a complete meal around the food they named. For example, if they said broccoli, they could add brown rice, black beans, olive oil, water, and an apple. The first team to the finish line wins!

Veggie Hummus Pinwheel Sandwiches: This snack has 4 components of the healthy eating plate – vegetables (carrots, cucumbers, and lettuce), whole grain (tortilla), healthy protein and healthy fat (hummus-chickpeas, tahini, olive oil). We are missing fruit and a healthy drink, but these would be easy to add on to your snack to make it a complete meal!

- Ingredients:
 - 4 Large Whole Wheat Tortillas
 - Hummus
 - Shredded Lettuce

- Shredded Carrots
- 1 Cucumber
- Materials:
 - 4 Cutting Boards
 - Serrated Knife
 - Plastic knives
 - Toothpicks & Napkins
 - Cooler/ice (for hummus)
 - Vegetable peeler
- Steps:
 - Preparation
 - Lay one whole wheat tortilla flat on each cutting board
 - Students 1-4: spread 3 tablespoons hummus onto each tortilla in even layer
 - Students 5-8: arrange lettuce on top of the hummus, leaving $\frac{1}{2}$ the tortilla bare (so it can stick to itself when rolling)
 - Students 9-12: arrange shredded carrots on top of lettuce
 - Students 13-14: help peel the cucumber with the vegetable peeler, and help slice the cucumber into matchsticks with plastic knives
 - Discuss knife safety:
 - 2 ways to hold a knife: “the grip” or “the pointer”
 - Rock that knife: starting with the point of the blade on the cutting board, “rock” the blade from point to end, pushing the blade away from you
 - Watch your fingers: hold the food you’re cutting with one hand, and shape your hand into a claw, with the fingers tucked under in a “C” shape; hold the knife with the other hand
 - Flat surface, flat food: work on a flat cutting board; if you are working with round or wobbly objects, slice them in half so that you can put the object on their flattened side (e.g. cucumbers)
 - Students 15-18: arrange sliced cucumbers on top of shredded carrots
 - Students 19-22: help tightly roll each tortilla, and place seam side down
 - Teacher: use serrated knife to cut each rolled tortilla into about 6-8 pinwheels
 - Students 23-26: help put 1 toothpick into each pinwheel sandwich
 - Eat & Enjoy!
 - Once all pinwheels have been made, call each student up to get one pinwheel sandwich and one napkin.
 - Let students know that you hope they’ll try the pinwheel, but that it’s okay if they don’t like it. Remind students about “Don’t yuk my yum” and the “2-bite test”
 - Have everyone raise their pinwheel in the air & say, “To healthy snacks!” Then enjoy!
 - Close
 - Distribute Pinwheel Sandwich Recipe Cards (Appendix 8-g) and Kid’s Healthy Eating Plate cards (Appendix 8-f) to students to take home