



Wonder Wheel! Food for Healthy Kids and a Healthy World

4 or 5 class periods

In this three-part lesson, your students will explore what makes food healthy for them, their community, and the environment. To learn about these concepts, students will participate in activities that include making cottage cheese, performing skits about cooperatives, and participating in a food package redesign competition. At the end of the lesson, students will design and create their own “Wonder Wheels” depicting healthy food choices.

Objectives

- Students will demonstrate how to make healthy choices for themselves, their communities, and the environment by making a personal “Wonder Wheel” of foods.
- Students will evaluate personal food choices by using the information on nutrition labels to rank foods from the healthiest to the unhealthiest.
- Students will be able to explain the benefits of food cooperatives by creating and performing skits that demonstrate how cooperatives operate.
- Students will apply the three R’s (reduce, reuse, recycle) by creating a more sustainable food packaging design.

Materials Needed

- Wonder Wheel! Classroom Presentation
- Wonder Wheel! Student Handout (one copy per student)
- Sticky notes
- One gallon of 2% milk
- ½ cup vinegar
- Two-gallon pot
- Heat source
- Thermometer
- Colander
- Large mixing bowl and spoon
- Nutrition labels from foods typically eaten by students (about 8 labels of a variety of healthy and unhealthy foods; make enough copies so that every group of three can have a set)
- Egg carton, plastic or cardboard
- Cardstock or used manila folders (two pieces for every student)
- Paper fasteners (one for every student)



Advance Preparation

On the day before starting this lesson in class, give each student a copy of the Wonder Wheel! Student Handout to complete as homework. Students will “spy” in their kitchens to identify three foods – one that they think is healthy for them, one for their community, and one for the environment. Students can use the same food for more than one category as long as they can explain their choices.

Do Now

Give each student three sticky notes. On each note, have students quickly sketch and label each of the three food items they listed on their Wonder Wheel! Student Handout for homework.

Mini-Lesson

1. Explain to students that they are going to create a giant class “Wonder Wheel” of all of the healthy foods they spied in their kitchens.
2. Project Slide #1 of the Wonder Wheel! Classroom Presentation. Invite students to post their sticky notes on the appropriate “rings” of the Wonder Wheel. Alternatively, use the instructions in Slide #10 to create a class-sized cardboard version of the Wonder Wheel.
3. Once all students have posted their sticky notes, ask volunteers to read the food choices aloud. Begin with the outer ring of choices they think are healthy for them. It is likely that many students guessed for one or more of their answers, so be sure to emphasize that there are no wrong answers for this part of the lesson.
4. Tell students that they will have an opportunity to revisit this Wonder Wheel at the end of the lesson. Have them compile their sticky notes and store them in a safe place.
5. Ask students: What do you think makes a food healthy for you? Listen to their guesses. Project Slide #2 of the Wonder Wheel! Classroom Presentation and review with students some key ways they can identify what makes a food healthy for them.
6. Repeat Step 5 to review what makes a food healthy for their community (use Slide #3) and healthy for the environment (use Slide #4).

Activity One: Healthy Kids

1. Explain to students that they are going to explore more about choosing healthy foods by making their own healthy food – cottage cheese – and by learning how nutrition labels can help them determine which foods are healthy and unhealthy.
2. Either in small lab groups or as a class, make the cottage cheese:
 - In a pot, heat the gallon of milk to 190°F. Turn off the heat just before the milk boils.
 - Add the vinegar and allow the mixture to cool.



1. While the cottage cheese is cooling, project Slide #5 of the Wonder Wheel! Classroom Presentation and review with students how nutrition labels can help them make healthy food choices. For more information, visit the tutorial page at the U.S. Food and Drug Administration: www.fda.gov/Food/LabelingNutrition/ConsumerInformation.
2. Draw a spectrum on the board. Write “Healthiest” on one end of the spectrum, and write “Unhealthiest” on the other end.
3. Place students in groups of three and give each group a set of the nutrition labels you prepared ahead of time. Have groups use the information on the labels to order them on a spectrum from healthiest to unhealthiest.
4. Tell students that they are now going to create a human spectrum to share their ideas. Assign nutrition labels to volunteers and invite them to stand along the spectrum on the board in the place they think is most appropriate for their label.
5. Facilitate a class discussion. One at a time, reveal what food is shown by each nutrition label and discuss the students’ reactions.
6. Finish making the cottage cheese:
 - Once the milk-vinegar mixture is cooled, it will consist of curds and whey. Pour the mixture into a colander and drain off the whey.
 - Pour the curds into a bowl; add salt or pepper to taste and mix well.
(Note: Be sure to consult school guidelines regarding allergies and food safety if considering allowing tasting in the classroom. If you do allow tasting, emphasize to students that many store-bought cottage cheeses come with additives that may affect the taste when compared to their very simple version.)
7. Ask students to decide where on the spectrum they would place the cottage cheese. They should place it closer to the “Healthiest” end because their cottage cheese was made with simple ingredients, is high in calcium and protein, limits sugar and salt, and is low-fat to keep them lean.
8. Wrap up the activity by asking students to examine their sticky notes from the Do Now activity. Ask students to consider where on the spectrum they would place their sticky notes.

Activity Two: Healthy Communities

1. Explain to students that they are going to learn more about choosing foods that are healthy for their community by creating skits about a business model known as a cooperative.
2. Place students in groups of four. Project Slide #6 of the Wonder Wheel! Classroom Presentation and review the information. Explain that students will use the information found online at the National Cooperative Business Association to represent one type of cooperative in their skit.
3. Allow groups adequate time to research, create, and practice their skit. Remind students to use the guidelines on the handout as a checklist of what to include in their skits.



4. Invite groups to perform their skits. Afterward, ask the audience to describe similarities and differences between each type of cooperative.
5. Ask the class: Based on what you learned in the skits, why might food from a cooperative be a healthier choice for your community?
6. Project Slide #7 of the Wonder Wheel! Classroom Presentation and share the story of Cabot Creamery as an example of a farm cooperative.
7. Have students summarize the benefits of eating food from a cooperative, and discuss ways that students might try to learn where their food comes from.
8. Wrap up the activity by asking student to examine their sticky notes from the Do Now activity. Ask students to identify any foods they think might have come from a cooperative.

Activity Three: Healthy Environment

1. Explain to students that they are going to learn more about choosing foods that are healthy for the environment by participating in a package redesign contest.
2. Ask students to list all the packaging they recalled seeing when spied on their kitchens. Then ask: Where does this packaging go once you have eaten the food? Listen to their guesses.
3. Project the top half of Slide #8 of the Wonder Wheel! Classroom Presentation and share the statistics about waste in the United States with the students. Then ask: Are there ways we can change these statistics? Listen to their guesses.
4. Reveal the bottom half of Slide #8 and introduce the three R's: reduce, reuse, and recycle. Show students the egg carton and ask the following questions:
 - How could we reduce (or even eliminate) the amount of this packaging?
 - How could we reuse this packaging?
 - Can we recycle this packaging?
 - Which of these three R's would have the greatest impact on the waste statistics we saw earlier?
5. Tell students that they are now going to apply the three R's to design more environmentally-responsible food packaging. Project Slide #9 of the Wonder Wheel! Classroom Presentation and review the directions with the class.
6. Place students in pairs and give each pair a piece of scrap paper for their redesign. Allow adequate time for students to discuss and sketch their redesigns.
7. Have pairs post their redesigns on the walls of the classroom. Conduct a gallery walk in which pairs quietly review the designs and identify ones that most creatively and effectively apply the three R's.
8. Facilitate a class discussion in which students share their top choices for designs. Hold a vote to determine the top three winners of the package redesign contest.
9. Wrap up the activity by asking students to examine their sticky notes from the Do Now activity. Ask students to identify foods with packaging that best illustrates the three R's concept.



Assessment

Project Slide #10 of the Wonder Wheel! Classroom Presentation and have students use the instructions to create their own personal Wonder Wheels. Have students share their work with each other, and then ask the following questions:

- Based on what you learned, what are at least two food-related changes you would make at home?
- What are some steps you would like to see taken at your school?
- How easy or difficult would it be to purchase food that is grown or produced by a local cooperative?
- How can you communicate what you learned with your friends, family, and school community?

Modifications

- Pre-teach unfamiliar vocabulary concepts to English Language Learners. Give them a list of important words from the lesson and have them work with a partner to create an illustrated glossary of terms. Each term should include a definition and a simple visual.
- Provide a copy of text-heavy slides from the Wonder Wheel! Classroom Presentation to Learners Reading Below Grade Level. Conduct a pre-reading activity in which you preview the reading and highlight the key sentences with these students. Then, read aloud as a class.
- Partner students for the Do Now and Assessment parts of the lesson to support Students with Special Needs. Partners can work together to sketch their sticky notes for the Do Now activity and create a Wonder Wheel in the Assessment.
- Introduce the concepts of “embodied energy” and “embodied water” to Advanced Learners during Activity Three. This is the “hidden” energy and water found in a product – the energy and water used in the extraction, production, distribution, and disposal of that product.

Extensions

- Extend Activity One by having students research more information about one or more of the nutrients listed on the nutrition label. After students present their findings, the class can create spectrums to assess how healthy foods are by nutrient.
- Extend Activity Two by having students follow the farm-to-fork life chain of a particular food product produced by a farm cooperative. Students can create poster-sized graphics to further discuss why food from cooperatives is healthy for the community.
- Extend Activity Three by having students calculate the “food miles” of the foods they spied in their refrigerators. Discuss with students the harmful effects of carbon emissions, and have them propose ways that they can reduce their food footprint by reducing the miles their food items travel from farm to fork.