



Food Education Standard 3: Food and the environment are interconnected.

Map Your Meal

Grade Levels & Subjects: Grades 9 - 12 English Language Arts

Learning + Food Objectives:

Students will learn how food and the environment are interconnected by tracing the origins of ingredients in a recipe and investigating how to eat seasonally.

Common Core Standards:

Common Core English Language Arts

Writing: Analyzing and Integrating Multiple Sources

CCSS.ELA-LITERACY.RI.9-12.7

Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

CCSS.ELA-LITERACY.WHST.9-12.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.



MATERIALS NEEDED

- Pilot Light Video: Colorful Quesadillas with Chef Beth Somers: <https://vimeo.com/420788928>
- Student Worksheet (Attached below)

CLASSROOM PROCEDURE

INTRODUCTION (5 - 10 minutes)

1. Ask students to think of a meal they have had in the last week. Ask them to record the meal as well as 3 - 4 ingredients from the meal.
2. Ask 2 - 3 students to share out their meal and ingredients.
3. After each student shares out a meal, ask other students if they can name the country or continent from which one of the ingredients is from and ask why they think it is grown there.
4. Explain that, today, students will be exploring where and when produce is grown.

5. Watch the "Colorful Quesadillas" video (<https://vimeo.com/420788928>).
6. Share the website, <https://blog.ciat.cgiar.org/origin-of-crops/>. Give students 3 - 5 minutes to explore the website. Ask students if they were surprised by anything they found.
7. Ask students to locate where sweet potatoes originate as well as one of the ingredients from the meal they shared.
8. Have 3 - 4 students share their findings.
9. Ask students why they think sweet potatoes often grow in warmer places. Introduce the idea that there are different growing zones in the world.

Students should see that sweet potatoes grow in Central America and Mexico. The ground never freezes in this location so root vegetables can grow year-round. Students may know that sweet potatoes can grow in other colder hardiness zones but seasonally rather than year-round.

INSTRUCTION (20 minutes)

1. Using the colorful quesadilla video, have students list the different types of produce (including herbs) that you would use in that recipe.
2. Share the resources below with students:
 - "Growing Guides" by The Old Farmer's Almanac
<https://www.almanac.com/gardening/growing-guides>
 - "What are Plant Hardiness Zones?" by The Old Farmer's Almanac
<https://www.almanac.com/content/plant-hardiness-zones>
 - USDA Plant Hardiness Zone Map by USDA
<https://planthardiness.ars.usda.gov/PHZMWeb/Default.aspx#>
3. Have students summarize their findings about what a plant hardiness zone is as well as identifying the hardiness zone they live in.
4. Thinking about hardiness zones, discuss: Can a food like strawberries be grown year-round in Illinois? Why is it more costly to the environment for people who live in Illinois to eat strawberries year-round? How can people adjust their eating habits to better support the environment? (To eat seasonally!)
5. Ask 3 - 4 students to share their definition of hardiness zone. Be sure all students have the correct hardiness zone.
6. Using the list of produce, ask students to identify the hardiness zone that each type of vegetable and herb grows best in. Then, ask students to circle or highlight the vegetable/herb in the recipe if it could be grown in the zone where you live.
7. Ask students to select two ingredients from the list that do not grow in your zone. Research how those ingredients get from their zone to you zone. Ask students to summarize their research.
8. Ask students to reflect on their findings. Are there zones that are better growing zones than others? Why? Were you surprised that two types of produce were able to grow in the same zone? Why? What does this tell you about the zone you live in? What does this tell you about the produce you would see during each season?
9. Make a public service announcement (radio ad, video, poster, etc.) to be shown in a local newspaper/school newspaper/community center to raise awareness in your community of how to support local farmers by buying seasonal produce (if students would prefer, they can pick anywhere in the US as their location). Pick a season, identify the produce grown during that time and explain why that produce

is in season. Use the information gathered about hardiness zones to guide your explanation.

Be sure to include the following in your public service announcement:

- **Introduction:** Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- **Facts and details that relate to the topic:** Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
- **Transition Words:** Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
- **Use specific vocabulary related to the topic:** Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.
- **Establish and maintain a formal style:** Attend to the norms and conventions of a formal letter
- **Conclusion:** Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

CLOSING (teacher discretion)

1. Students can share their work with their peers for feedback.
2. Optional discussion: Why is wasting food grown in a different hardiness zone that is transported to you more costly to the environment than if it was grown in your own hardiness zone?

ADDITIONAL RESOURCES

- Articles focused on growing/hardiness zones:
 - "Where our Food Crops Come From" - <https://blog.ciat.cgiar.org/origin-of-crops/>
 - "Growing Guides" by The Old Farmer's Almanac - <https://www.almanac.com/gardening/growing-guides>
 - "What are Plant Hardiness Zones?" by The Old Farmer's Almanac - <https://www.almanac.com/content/plant-hardiness-zones>
 - "USDA Plant Hardiness Zone Map" by USDA - <https://planthardiness.ars.usda.gov/PHZMWeb/Default.aspx#>
- Videos explaining hardiness zones with maps:
 - "What Plant Hardiness Zones DON'T Tell You..." - <https://www.youtube.com/watch?v=Bulb5g3wKTI>
 - "US Plant Zones: Explained // Garden Answer" - <https://www.youtube.com/watch?v=O6AM0pNiUOs&t=11s>

RECIPE FROM VIDEO

Video: "Colorful Quesadillas" - <https://vimeo.com/420788928>

Below is the recipe from the video in this lesson. Pilot Light Anywhere lessons are designed to be able to be delivered from a remote setting; however, this recipe can be demoed by the teacher virtually/in person, sent home to families, or used for reference.

Colorful Vegetable Quesadillas

Ingredients:

- 1 sweet potato, peeled and cut into 1/2 inch cubes
- 2 red or yellow Peppers, seeded and cut into 1/2 inch cubes
- 1 yellow onion, peeled and cut into 1/4 inch cubes
- 1 cup canned black beans
- 1/2 teaspoon cumin
- 1/4 teaspoon dried oregano
- pinch dried red chili pepper or a dash of hot sauce
- salt, as needed
- pepper, as needed
- 1-1/2 cups shredded cheddar
- 8 corn or flour tortillas

Preparation:

1. In a fry pan, heat 1 tablespoon of vegetable or canola oil over medium heat until the oil shimmers.
2. Add the diced sweet potato, peppers, onions, cumin, oregano, hot sauce, salt and pepper and stir everything well to combine.
3. Cook over medium heat, stirring occasionally, until the onions are translucent, and the sweet potatoes are easily pierced with a fork, about 10 minutes. If the onions start to burn or stick to the bottom of the pan, add a few tablespoons of water and reduce the heat to medium-low.
4. Stir in the black beans and cook to heat through, about 2-3 minutes.
5. Taste and add extra salt and pepper if needed.
6. Remove the filling from the fry pan, and clean the fry pan and return to the stove.
7. To build a quesadilla, top one tortilla evenly with 2 tablespoons of shredded cheese, then with 1/4 of the vegetable filling, and then another 2 tablespoons of cheese. Sandwich with a second tortilla. Repeat.
8. Heat a fry pan over medium heat. Carefully slide 1 quesadilla into the hot pan, and cook for 1-2 minutes or until the bottom is slightly crispy.
9. Using a pancake turner or other spatula, carefully flip the quesadilla and cook an additional 1-2 minutes or until the cheese is melty. Remove from the pan and slice into quarters. Repeat.
10. Serve alone or with toppings like chopped tomatoes, salsa, sour cream, or avocado

The student worksheet below can be printed or copied onto
any online learning platform.



Map Your Meal

We are going to explore how food and the environment are interconnected by tracing the origins of ingredients in our recipe and investigating how to eat seasonally.

1. What is a memorable meal you've had in the last week? Write down 3-4 ingredients from that meal. Using your background knowledge, where do you think those ingredients were originally grown?

Ingredients	Where were they grown?
1.	
2.	
3.	
4.	

2. Watch the "Colorful Quesadillas" video (<https://vimeo.com/420788928>).
3. Where do you think the sweet potatoes were first grown? Why do you think that?

4. Explore the following resources:
 - "Growing Guides" by The Old Farmer's Almanac
<https://www.almanac.com/gardening/growing-guides>
 - "What are Plant Hardiness Zones?" by The Old Farmer's Almanac
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Write a brief summary of what a hardiness zone is and be sure to identify hardiness zone do you live in.



5. Identify the other types of produce from the quesadilla recipe. In what hardiness zone are those ingredients grown?

Ingredient	Hardiness Zone

6. Circle or highlight the ingredients that can grow in your hardiness zone.
7. Select two ingredients from the list above that do not grow in your hardiness zone, how do they get to you? Research and summarize your findings.

8. Make a public service announcement (radio ad, video, poster, etc.) to be shown in a local newspaper/school newspaper/community center to raise awareness in your community of how to support local farmers by buying seasonal produce. (If you would prefer, you can pick anywhere in the US as their location.) Pick a season, identify the produce grown during that time and explain why that produce is in season. Use the information gathered about hardiness zones to guide your explanation.

Be sure to include the following in your public service announcement:

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9. Share your work with a peer. Below, have your peer to provide feedback on your work.