



Food Education Standard 2: Foods have sources and origins.

Growing Food in Soil

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

Learning + Food Objectives:

Students will learn about food sources and origins by writing an informational writing piece comparing and contrasting two different types of fruits or vegetables (or other food that grows on land).

Common Core Standards:

Common Core English Language Arts

Comparing and contrasting informational text and scientific ideas.

[CCSS.ELA-LITERACY.W.9-12.2](#)

Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

[CCSS.ELA-LITERACY.W.9-12.2.A](#)

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.



MATERIALS NEEDED

- Video "Pilot Light Family Meals: Polenta with Mushrooms and Greens" - <https://vimeo.com/434060742>
- Student Worksheet

CLASSROOM PROCEDURE

INTRODUCTION (10 minutes)

1. Tell students that today they will be learning about where our food comes from - particularly on land. Let them know that in other lessons, you will discuss other places that food grows, like water, but today, we will focus on food growing in soil and on land.
2. Have students complete the "brainstorm" section of their student worksheet.
3. Ask students to share what they know about what vegetables need to grow.
4. Ask students to share what they know about what mushrooms need to grow. (OPTIONAL: use informational article about mushrooms in text resources <https://kids.britannica.com/students/article/mushroom/275993#205020-toc>)
5. Explain that today they will be comparing how a specific vegetable, swiss chard, and fungi, mushrooms, grow.
6. Watch the video, <https://vimeo.com/434060742> asking students to draw a picture and list what swiss chard looks like when it is growing. (It is shown in the first minute of the video. You may need to re-watch that section of the video again.) Have students record their picture and notes on their student worksheet.

INSTRUCTION (45 minutes - 1 hour)

1. After watching the video, present students with a compare and contrast chart - one side with mushrooms and one side with Swiss Chard. Tell students that today they will be comparing and contrasting using a compare and contrast chart as a tool.
2. (Depending on background knowledge, have students watch a video such as, "How do mushrooms grow?" <https://www.youtube.com/watch?v=RIDixWCfiYU&t=66s>, explaining in more depth about how mushrooms grow)
3. Teacher will show a compare and contrast chart and label swiss chard and mushrooms on each side. Teacher can begin by modeling gathering information about each food (including research if needed), and how to compare and contrast.
4. Give students about 10 minutes to research and record information on their student worksheet.
5. Have students share out 3 details for each section (swiss chard, similarities between the two, and mushrooms).
6. Instruct students that they will be writing an informational article explaining how swiss chard and mushrooms are similar and different. Remind students that the article should be written in a way that someone who had no background in biology would be able to understand their article. They should define vocabulary that is specific to the topic.
7. Ask students to plan how they will organize their information including the title, headings and subheadings as well as highlighting key vocabulary they will be including.

Common Core writing asks students to meet the following criteria in explanatory/informative pieces:

- a. Introduce a topic
- b. Organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole

- c. Include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- d. 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
- e. 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 writing with their classmates. Ask peers to provide written feedback to the student.
2. Students should then use that feedback to strengthen their piece. Ask students to highlight changes they made to their piece after their peer's feedback.

(OPTIONAL EXTENSION)

Have students engage in research about why soil is an important part of our ecosystem. Understanding the importance of soil will help strengthen students' connection between land and food sources.

- Informational article about soil:
 - "It's alive!" - <http://www.fao.org/fao-stories/article/en/c/1263004/>
- Informational article about soil:
 - "Soil" - <https://kids.britannica.com/kids/article/soil/390622>

ADDITIONAL RESOURCES

- Informational article about how mushrooms grow:
 - "Mushrooms" - <https://kids.britannica.com/students/article/mushroom/275993#205020-toc>
- Video explaining how mushrooms grow:
 - "How do mushrooms grow?" - <https://www.youtube.com/watch?v=RIDixWCflYU&t=66s>
- Informational article about how swiss chard grows
- "Swiss Chard: Planting, Growing, Harvesting" - <https://www.almanac.com/plant/swiss-chard>

RECIPE FROM VIDEO

Video: "Polenta with Mushrooms and Greens" - <https://vimeo.com/434060742>

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.

Polenta with Mushrooms and Greens

Serves 4

Ingredients:

Polenta

- 3 cups water, chicken stock, or other broth
- 1 tsp. salt
- 1 cup coarse corn grits/polenta
- 3 TB butter or extra virgin olive oil (or combination)
- Optional:
 - 2 Tbsp cream
 - 1 bay leaf
 - 3 sprigs thyme leaves, picked (other soft herbs such as basil or parsley would also work well)

Mushrooms

- 1.5 lbs mushrooms, cut or broken into bite-sized pieces
- Chef's choice combination of alliums
 - 1 Tbsp minced garlic, shallot or onion **OR**
 - 1/4 cup diced spring alliums (scallions, spring onions, ramps, green garlic, scapes)
- 2-3 TB extra virgin olive oil (or other neutral oil)
- Salt (to taste)

Greens

- 1 large bunch swiss chard, spinach, lacinato kale, or other tender green, stems removed and chopped into 1 inch pieces, leaves torn into large pieces
- 1 TB extra virgin olive oil
- Salt (to taste)

Preparation:

1. Bring water and salt to boil. Add bay leaf, butter or olive oil and cream, if desired, then grits/polenta, stirring to incorporate. Lower heat to medium low and cook 30-45 minutes, stirring occasionally, until soft and creamy, adding more water or stock if needed. Add thyme and adjust salt to taste.
2. While polenta is cooking, heat a heavy sauté pan over high heat. Add oil, then mushrooms. Season well with salt. Once water from mushrooms has mostly evaporated and mushrooms begin to brown, lower heat to medium and toss to encourage even browning, letting them continue to cook and get color on all sides until they are crispy and cooked through. Add in your allium, stirring until cooked and fragrant.
3. Don't forget to stir your polenta every 5 minutes or so while you're cooking your mushrooms and chard!
4. In a medium pot or deep pan, heat oil over medium. Add stems and cook until just tender. Add a splash of water, then greens, and cover. Reduce heat to low and cook 3-5 minutes or until leaves and stems are tender. Adjust salt to taste and add butter if desired.
5. Spoon polenta into a bowl or serving dish and spoon vegetables on top.

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



Growing Food and Knowledge

Brainstorm:

1. What do plants need to grow?
2. What do mushrooms need to grow?

Video:

Draw a picture of what swiss chard looks like as it grows:

List the components needs for swiss chard to grow:

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-
-
-
-
-



Draw a picture of what mushrooms looks like as they grow:

List the components needs for mushrooms to grow:

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-
-
-
-
-

Compare/Contrast

Now, using the information you have gathered, compare and contrast these two foods in your **Compare and Contrast Chart**

SWISS CHARD	SIMILARITIES	MUSHROOMS
<ul style="list-style-type: none">••••••	<ul style="list-style-type: none">••••••	<ul style="list-style-type: none">••••••

Draft of Article

Headings:
Subheadings:
Key vocabulary:

