



Lesson: Garlic!

Duration: *Two (2) 40-minute sessions*

Note: *This lesson involves activity segments that are intended to be implemented in an outdoor setting. Where applicable, the title of the activity will be followed by “(outdoors)”.*

Section 1: Framework

Essential Questions

- What is garlic?
- How does garlic contribute to human and plant health?
- How does garlic grow?

Lesson Objectives

- Students will be able to name some of the key characteristics of garlic, including that it is a root vegetable.
- Students will know that garlic can be used to promote health and healing and will understand that garlic has long been recognized for its health-promoting properties.
- Students will be able to identify the key structural features of a garlic clove and a garlic plant.
- Students will know the steps to plant garlic correctly and will be able to follow these steps to plant garlic in an accessible garden space.

Context

Garlic is commonly used in cooking as a spice; in fact, it is regularly used on every continent except Antarctica! But did you know that garlic also has health-promoting properties, well-documented throughout history and by modern scientists? This lesson provides students with a basic overview of garlic’s key characteristics, uses, development, and care; and it includes step-by-step instructions that can be used to plant and harvest garlic.

Standards

PRIMARY

Massachusetts Health Standard 13.1: Through the study of Interdependence students will describe types of natural resources and their connection with health.

RELATED

Massachusetts Health Standard 8.1: Through the study of Prevention students will describe how the body fights germs and disease naturally and with medicines and immunization.

Massachusetts Science Standard 3.LS.4.4: Analyze and interpret given data about changes in a habitat and describe how the changes affect the ability of organisms that live in that habitat to survive and reproduce.



Massachusetts Reading Standard RI.3.2: Determine the main idea of a text; recount the key details and explain how they support the main idea.

Massachusetts Reading Standard RI.3.10: Independently and proficiently read and comprehend informational texts, including history/social studies, science, mathematical, and technical texts, exhibiting complexity appropriate for at least grade 3.

Section 2: Activities

PART A

Materials

 Article: Garlic!
 Writing utensil

 Lined paper

1. Lesson Preview (5 minutes)

Provide a preview for students. Let them know that today the class will be reading an article all about garlic, its characteristics, uses, development, and care. This is a good time to check for prior knowledge and to ask questions that stimulate connection-making.

2. Article: Garlic! (15 minutes)

Review key terms. Begin by reviewing key terms and answering questions that relate to these. Ensure students are able to pronounce these terms and have a functional understanding of their meaning.

Read. Next, read through the text. Encourage students to utilize close reading strategies to make meaning of the text. These may include, but are not limited to: circling and defining new terms, underlining key ideas, and making notes in the margins. Check for understanding at the close of each paragraph to ensure

students understand this text, as it references concepts that may be unfamiliar to students.

3. Reflect and Discuss (10 minutes)

Reflect. At the close of the article, review the discussion questions with the group. Invite students to reflect and respond individually to these questions in anticipation of sharing out to a small group or to the whole group.

Discuss. Review students' responses to the discussion questions aloud (in small groups or as a whole group). Check that students understand the key ideas touched upon by these questions, namely the key characteristics and health benefits of garlic.

4. Activity: Creative Writing (10 minutes)

Songs, rhymes, and poems are not only fun, they are also a great way to remember something, like the steps in the garlic-planting process! Task students with producing a simple song, rhyme, or poem that can help recall the steps needed to plant garlic. The following steps are recommended:

1. **Step 1: Review.** Review the steps required to plant garlic
2. **Step 2: Brainstorm.** Which details are most important?
3. **Step 3: Create!** How can you say, sing, or perform these steps so that you remember them?

PART B

During this segment of the lesson, students will plant garlic cloves. This lesson has been designed for classrooms that have access to gardening space, such as a raised bed. For an alternative method of growing garlic on the ground, see the Ruth Stout method referenced in Lesson Extensions, which requires open space, loose soil, and hay.

This lesson also assumes that beds have been prepared for planting. This process will vary based on the condition of beds and personal preferences. Typical steps in the preparation process include clearing the beds (removing debris and growth that will restrict or limit the garlic's growth), adding soil amendments, and creating rows. It is recommended that you feed the soil with root-promoting organic amendments like calcium, phosphorus, and potassium. Reference any packaging instructions for the best way to add these. It may also be helpful to dig trenches to expedite the planting process, versus digging individual holes. Alternatively, you might involve students in any or all of these processes; groups are encouraged to do what works best for them.

Materials

📎 Article: Garlic!

📎 Handout: Garlic Plant Diagram

📎 Writing utensil

📎 Seed Garlic (cloves)

1. Provide context (5 minutes)

Provide students with an overview of the day. Take a moment to ground them in the previous session's conversation about garlic, and have them locate their Garlic! Article for reference.

2. Garlic Plant Diagram (5 minutes)

A successful planting requires each participant to understand a few basic facts about garlic, including important plant parts and their names. Provide each student with a Garlic Plant Diagram Handout. Ask students to complete the handout by identifying key parts of the plant: the garlic bulb, a clove of garlic, and the basal plate (label twice: on the bulb and on the clove). Identifying the base plate will help participants correctly orient the seed garlic in the soil. Take a moment to check and see that all participants have correctly identified these plant parts.

3. Revisit the Process (5 minutes)

Before planting, revisit the songs, rhymes, and poems that students developed to aid them in the planting process. If there are one or two that are especially effective, consider using these throughout the process to guide the group's efforts.

4. Plant! (25 minutes) (outdoors)

With students' minds now fertile for the planting process, get to it! There is no 'right way' to go about orchestrating a mass planting, so utilize a process that works well for your group. Key factors to consider:

- Will students dig individual holes or will they place their seed garlic into a pre-dug trench?
- Will students back-fill soil individually or once all garlic has been planted?
- If planting into the ground, are there certain places students should or shouldn't walk to protect growing plants?

Most importantly, enjoy the planting process!

Section 3: Lesson Extensions

- Learn how to grow garlic in the space you have available utilizing just soil and hay - a method of planting made famous by a woman named Ruth Stout. Watch this [video](#) to learn more!