



SAVING BEAN SEEDS

Garden

EST. TIME 45 minutes SEASON fall

GRADE 5 | LESSON #3

? ESSENTIAL QUESTION(S)

- What are the benefits of seed saving?

MATERIALS

- Beans
- Gregor Mendel: The Friar Who Grew Peas* by Cheryl Bardoe
- Coin envelopes or paper to make origami seed envelopes (1 per student)
- Blank paper and clipboard (1 per student)
- Writing and coloring supplies (enough for each student)

Abc VOCABULARY

- Inherit
- Traits
- Seed saving

ASSESSMENT

- Observational checklist
- Create a Guide



Use the lesson template to create your own and share with us!

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and read *Gregor Mendel: The Friar Who Grew Peas* by Cheryl Bardoe to develop comprehension questions for read aloud. Also, ensure there are bean plants in the garden for harvesting.

TEACHER BACKGROUND

Seed saving is an ancient method for cultivating desired genetic traits and preserving biodiversity. This practice can save gardeners money from buying seeds each year, and the sharing of special seeds can build community with neighbors.

LESSON DESCRIPTION

In this lesson, students will read *Gregor Mendel: The Friar Who Grew Peas* by Cheryl Bardoe to explore in what way Mendel discovered how genetic traits are passed down. The students will use that knowledge to select and harvest the healthiest bean plants from the garden, and they will save those seeds for the Grade 4 students to plant in the spring. Students will also provide a growing guide to accompany the seeds.

LEARNING OBJECTIVES

Content Learning Objectives

P.5.1 Understand how to identify and cultivate genetic traits in plants.

Life Skills Learning Objectives

CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-LITERACY.W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Social Studies: Citizenship, Cultural Traditions.



See “Teaching Strategies” in Appendix section for information on how to lead Think-Pair-Share.

CULTIVATE CURIOSITY (10 MINUTES) *engage*

1. Read aloud selections from *Gregor Mendel: The Friar Who Grew Peas* aloud and discuss what Mendel learned through being curious and experimenting with pea plants—that plants **inherit** and pass down **traits**.
2. Ask students to think-pair-share and consider how that knowledge may affect the way they choose what to plant in the garden.

ROOT AROUND (10 MINUTES) *explore*

1. Position the class so they surround a garden bed full of dry beans. Have students look closely at the beans and share their ideas for how to identify the healthiest looking bean pods. Once consensus is reached, model how to harvest and have each student harvest four healthy looking beans.

GROW UNDERSTANDING (10 MINUTES) *explain*

1. Explain to students that we are going to save the beans (seeds) from the four healthy beans they chose in a process commonly called **seed saving** in an attempt to save the desirable traits for the garden the following year.
2. Model for students how to shell beans and place them in a coin envelope or an origami seed envelope. If students are making origami envelopes, demonstrate that process here.

OBSERVE THE FRUITS (10 MINUTES) *elaborate*

1. Explain to students that these seeds will be passed down to the Grade 4 class to plant in the spring, so we need to provide them with information about how, when, and where to plant the beans.
2. Provide students with store-bought seed packets for the same variety of bean or hand-held devices to conduct research. Have them combine their research with their knowledge of growing these beans to create a guide for the Grade 4 students on a separate sheet of paper. Encourage them to provide information on how, when, and where to plant and care for the beans (ensuring the plants’ needs of water, nutrients, sunlight, temperature, and space are met). Guides can be decorated with scientific drawings of the bean plants at maturity or describe the positive traits that the seeds are being saved for.
3. As students work on their guides, acknowledge observed behaviors that align with the life skills learning objectives, such as applying principles of fairness while sharing resources. Also, use the observational checklist to assess students’ current development of the life skills.



This activity can be used to assess student understanding of content learning objectives.

REFLECT (5 MINUTES) *evaluate*

1. Recognize individual student behaviors that aligned with being the best for themselves, their communities, and their environment. Ask students to reflect on how they were able to share the space and the materials with equity and fairness.
2. Review the value of seed saving with students by allowing volunteers to present their planting guides and rationale for saving their seeds to the Grade 4 students.

 ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity, Grow Understanding, and Observe the Fruits sections of this lesson can occur inside the classroom. The bean collection in the Root Around section should take place in the garden on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

Use the rest of the beans in **Kitchen Lesson #10: Cooking Beans** and **Kitchen Lesson #11: Beans Galore Salad**.

POSSIBLE EXTENSIONS

Classroom: Create a class card to give to Grade 4 students along with the beans telling them what they have to look forward to in garden class this year.

ADDITIONAL RESOURCES

- *Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners* by Suzanne Ashworth
- *Seed Saving: A Beginner's Guide to Heirloom Gardening* by Caleb Warnock
- *The Seed Garden: The Art and Practice of Seed Saving* by Lee Buttala
- Seed Savers Exchange
<http://www.seedsavers.org/>
- Farmers Almanac, Seed Saving Guide
<https://www.almanac.com/content/how-save-vegetable-seeds-seed-saving-guide>