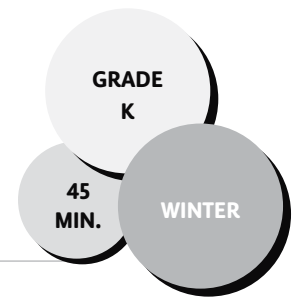


Bean Buddies

THEME: GROWING AND ACCESSING NOURISHING FOOD



ESSENTIAL QUESTION

How do we help a seed sprout?

LEARNING OBJECTIVES

- ✓ Students will be able to identify what a plant needs to grow and thrive.
- ✓ Students will be able to prepare a seedling and make predictions about its growth.

CONCEPTS

observation prediction sprout

ENGAGING THE CLASSROOM TEACHER

- Prior to the lesson, check in with the teacher to see whether they'd prefer the version where students track the Bean Buddies growth in class (on the window) or on their own (as a necklace).
- If making Bean Buddy necklaces, make one for the teacher, so they can wear it the day of (under their shirt) and be a part of the big reveal to students.
- During Action Step 3, suggest that the teacher support students struggling to make their Bean Buddies.

LESSON DESCRIPTION

In this lesson, students listen to a story to learn about the optimal conditions for a bean seed to

germinate, and then they make Bean Buddies in zip lock bags. Students draw pictures and make predictions about their seed's growth.

MATERIALS

For each student:

- Bean seeds
- Zip lock bags (or little jewelry bags for necklaces)
- Paper towels (or 1 cotton ball for each student)
- Observation Log (p. 88)
- Permanent marker
- 2 or more spray bottles
- Crayons
- Paper and pencils
- *One Bean* by Anne Rockwell

PREPARATION

- › Soak beans overnight for better germination.
- › Photocopy the Observation Log for each student.
- › Make your own Bean Buddy beforehand to troubleshoot any issues and have a model to show students.
- › Make a sample Observation Log as a model for students.

ACTION STEPS

1. Engage: Gather students in a circle, and explain that today they'll be learning more about what plants need to grow by sprouting their very own seed. Ask, *How many people have planted a seed before?* Discuss students'

prior experiences growing plants. Then explain that you have a special buddy who you've brought with you today, and that by the end of class, everyone will have a new buddy! If you're wearing a Bean Buddy necklace, dramatically reveal it to students. **(5 min.)**

2. Reading: Read *One Bean*, which tells the story of a young boy soaking and sprouting a bean as the students will do. To check for understanding, ask questions about the story such as, *How did the boy know it was time to plant his bean?* Alternatively, for a more whimsical approach, tell students the story of "Jack and the Beanstalk." Explain that you'll be giving them magical bean seeds today as well. Have them close their eyes and imagine climbing the beanstalk that'll grow from their seeds. Ask, *What place will your beanstalk take you to?* **(5 min.)**

3. Making Bean Buddies: Say, *Now we're going to make friends with a bean!* Show students your model Bean Buddy. Encourage students to help each other while making their Bean Buddies. Pass out paper towels to each student and a couple spray bottles to share. You may want to predetermine the number of spritzes that will adequately dampen the towel, and tell students to only use that many. Then pass out one seed to each student, and have students fold their paper towel behind the bean. Finally, pass out zip lock bags, and have students place their bean inside. **(10 min.)**

4. Discussing Plant Life Cycle: Have students recall a plant's life cycle. Ask, *Which part of the plant is the bean? Which part of the plant do you expect to grow out of the seed first? What do you think will grow next?* **(5 min.)**

5. Drawing: Pass out crayons, paper, and pencils for students to draw pictures of their seeds and how they think their seeds will look in one week. This is a good time to have students use a permanent marker to write their name on the zip lock bag and their drawing. Have students clean up and collect their Bean Buddies, explaining that you'll tape them to the window to help them sprout, and that's where they'll check on them every day. **(10 min.)**

6. Sharing: Return to the circle, and have students share their drawings with a partner. **(5 min.)**

REFLECTION

Have students discuss the following questions in small groups, then share with the class: **(5 min.)**

Social and emotional learning

- *What was your favorite part of the activity?*
- *What was hard? How did you solve the problem?*

Check for understanding

- *What do seeds need to grow into plants?*
- *How long do you think it will take until we see the bean sprout? How big do you think its leaves will get?*
- *Why doesn't the bean seed need soil to sprout? Do you think it'll need to be in soil soon?*

ADAPTATIONS

Observation Extension: Have each student set up a log where they will record observations with pictures of the progress of the plants' growth.

Necklace Variation: A fun alternative is to have students keep the Bean Buddies in their pockets or on a string as a necklace, explaining that the warmth from their bodies will help them germinate. Have them care for their Bean Buddy independently at home, and make it a challenge to see whose Bean Buddy is alive and thriving day after day.

ACADEMIC CONNECTIONS

Next Generation Science Standards Disciplinary Core Ideas

NGSS K.LS1.C

Organization for Matter and Energy Flow in Organisms – All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

NGSS 1.LS1.A

Structure and Function – All organisms have external parts... Plants also have different parts (roots, stems, leaves, flowers, fruits, and seeds) that help them survive and grow.

Observation Log

Name: _____

Project: _____

Today

My Prediction

