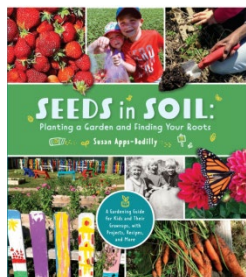


Susan Apps-Bodilly – WSRA Conference 2024

Seeds in Soil: Planting a Garden and Finding Your Roots

Wisconsin Historical Society Press, 2022



This lesson is intended for use with *Seeds in Soil, Planting a Garden, and Finding Your Roots* by Susan Apps-Bodilly. It contains a lesson example and guiding inquiry questions. The lesson supports teachers and those working with grade K-5 learners. The lesson supports English Language Arts, Social Studies, and Next Generation Science Standards. Please modify the lesson to meet the needs of your students.

Lesson Title: *Thinking About the Past – Starting Seeds in the Classroom*

Book: *Seeds in Soil, Planting a Garden and Finding Your Roots* by Susan Apps-Bodilly

Primary Source Photograph from Wisconsin Historical Society Images – page 37

Text for reading or read aloud– “Starting Seeds Indoors” page 41-43

Lesson Overview:

Using primary source documents from the past helps young learners construct meaningful questions and think like a historian. This lesson enables students to compare the past to the present.

Enduring Understanding:

The writer of *Seeds in Soil* created a nonfiction book using words, historical primary source documents, factual scientific information, and text features to communicate ideas about the past that help us understand the present.

Learning how to plant seeds in soil connects us to nature and our past.

Essential Questions:

How does a primary source document help you study and investigate the past?

What is an indoor garden? How can I use a model to learn about how seeds grow?

What do living things need to survive stay healthy and grow?

What evidence will show us if our plants are growing?

Materials:

- Newspaper
- Potting soil and/or seed starting mix, spoons for moving soil into pots
- Seed starter trays, natural fiber pots, or paper egg cartons
- Large plastic bin or plastic lid, to put the seeds trays in
- Seed Packets - Ask your class what they like to eat! Basil, Lettuce (loose leaf) Sugar Snap Pea, Lima Bean, Tomato and Marigold (NOT to eat, but these seeds come up quickly)
- Watering bottle with long nozzle or watering can
 - Plastic wrap – some people like to create a little “greenhouse” by covering the pots with plastic wrap until the seeds sprout
- Grow lights (if natural light is unavailable)

Vocabulary from *Seeds in Soil* text:

Last frost date: The date you can plant seeds into an outside garden after starting them inside.

<https://www.almanac.com/gardening/frostdates/WI>

Frost: Ice on the ground that forms when the temperature is below freezing.

Hardening off: The process of letting plants sit outside for a while so they can be used to outside temperatures after beginning to grow inside.

Transplant: Move or transfer to another place

Prior to this lesson or at the beginning if this is new learning:**Other Vocabulary:**

History: History is the study of the past.

Historians: People who study the events that took place in the past and the people who lived in the past. They tell or write about the past.

Investigate: To find out about something.

Primary Source: Things that were written or made at the time in the past that you are studying.

Secondary Source: Tell stories about the past, but were made by someone who was not here at the time.

Before the Lesson:

Evaluate and observe student knowledge about using primary source documents as a way of asking questions about the past. Remind and/or reteach as necessary.

Use a paper or digital anchor chart:

Primary Sources	Secondary Sources
Newspapers from the past	Textbooks
Diary, letters, drawings	History books
Autobiography	Biography
Photographs	
Clothes, furniture from the past	

Learning Targets:

I use primary source documents to study the past and compare it to today.

I observe, think, and wonder to ask and answer questions about the past.

I can explain, draw a diagram of a model, or write a prediction for what seeds need to grow.

The Lesson – from Chapter 4 – Planting Seeds

BEFORE READING

1. Introduce the lesson by reading the learning targets aloud with students.

Show photograph from book – page 37. (for the teacher to know: The photo is an historical image of a man preparing his garden using a hoe. He is making rows using twine to mark the rows.)

2. Use the inquiry technique – *Observe, Think, Wonder* – Students comment on questions in large group or in pairs.

(Adapted from: See, Think, Wonder strategy: <https://www.inquired.org/post/see-think-wonder>)

- *Observe:* What action is happening in this image? What object or tool is shown?
- *Think:* Do you recognize the garden tool the man is using? What can you learn from this image? If someone started a garden today, would the scene look like this? What might be different? What might be the same?
- *Wonder:* Do you wonder about the twine (strong string) and posts he is using? How do you start planting seeds in a garden? What would seeds need if we started some inside in our classroom?

DURING READING

Read aloud the text on pages 41-43. Tell students to listen for what they will need to do in order to start seeds indoors.

Remind them of the learning target: I can explain, draw a diagram of a model, or write a prediction for what seeds need to grow before they can be transplanted outdoors.

While reading, stop to reflect with learners about interesting vocabulary and/or concepts that are unfamiliar.

AFTER READING REFLECTION

Possible discussion questions – adapt and modify as necessary depending on the age and experience of the learners:

1. Ask students - what is a garden? Refer back to the primary source photograph. What types of gardens do you know about, or have you seen? How are gardens used? Invite students to share their answers. Explain to students that gardens can be small or large, indoors or outdoors, in the ground or in a container.

2. Why would someone start seeds indoors?

Explain that there are traditional outdoor gardens and that indoor gardens are a good option for areas where winters are long and the growing season is short. Explain that you will be planting an indoor garden and transplanting the seedlings outdoors (if possible).

3. What happens when seeds grow?

What do you predict that they will need? The text said that seeds need soil, sunlight, water.

What happens when seeds are planted indoors too early and not transplanted to larger container? (They may become “leggy”.) Explain that as seedlings grow, transplanting into larger containers may be necessary. When seedlings have three to four true leaves, they can be moved into larger containers.

4. What is frost? Why is it important to know about the weather before planting seeds outside? Depending on the time of year and the weather/frost date plants can be moved outside. Explain that seedlings need to be strong and healthy for them to survive and moving plants from an indoor environment to the harsher conditions outdoors can be traumatic. Therefore, when transplanting, seedlings will need transitional time called “hardening off”. This means you will gradually expose the seedlings to the weather outside day by day.

Activity:

Follow the directions on page 42-43 to plants seeds!

Suggestions:

Set up a planting station at a table space. Have students plant in groups of two or three with adult supervision while other students do an alternate activity. Some students worry about dirt on their hands and clothes. Allow the use of garden-size gloves, aprons, or science safety goggles. Lay out newspaper and all planting materials. Put soil in a large container that will not tip over. Place the pots into a larger container to keep the soil from spilling.

Before any students plant seeds in the small group, **model** how to do the activity and discuss expectations. Show the seed packets and read the information on them.

1. Take time to observe the differences between the shapes and sizes of seeds before planting.
2. Encourage conversation about the smell of soil and how it feels. What do you think of? Have you smelled this before?
3. Gently press some soil into the container. Most students like to pack it in – this is actually not helpful to the seeds. Seeds need some air.
4. Encourage students to use their finger or the end of the spoon to make three holes for their seeds. Drop the seeds into the holes, without pressing them down further. Gently cover with a “blanket of soil”.
5. Model how to use a spray bottle for first watering. Do not allow students to flood the plants with water.
6. While students are at the table, discuss and encourage thoughts about the follow up diagram project they will do to describe their learning.

7. Place the trays in a location that receives 6 to 8 hours of direct sunlight or under grow lights for 12 to 14 hours daily. Rotate flats often so seedlings do not bend toward the light. OR, use this as a lesson when they do.

8. Have students monitor and care for their plants.

Assessment: Can also be done at a later time.

Have students draw or explain a model of the activity. Assess their understanding of how to plant seeds in the soil and what they predict seeds will need to grow.

Share their work and understanding with a partner.

These can be collected and saved. A fun activity is to keep a class plant journal with drawings and observations as the seeds grow.

Follow Up Discussion to Observe, Think, Wonder Activity:

You noticed the person in the photograph using twine and a garden hoe to prepare his garden for planting. People have been doing this for a long time. When you plant seeds, you are doing the same thing that people have done for many years. Some things have changed, but planting seeds in soil to grow our own food and plants has not changed.

Ask someone older than you if they have planted a garden. What do they know? Is there anyone in their past that also had a garden? What kinds of plants did they like to eat and grow?

Resources:

Reading Like a Historian, Stanford - <https://inquirygroup.org/>

Notable Social Studies Tradebooks - <https://www.socialstudies.org/notable-trade-books/2023>