

LESSON 20: SEED TO SPROUT

SUPPLIES

PENCIL BOX

- Markers

MAIN BIN

- Clear Cups (20)
- Paper Towel Roll (1)
- Spray Bottle (1)
- Lima Bean Seed Packet (1)


FOLDER

- Plant care instructions (5 pages divided into fourths)

OBJECTIVES


- Learn about the various parts of a seed
- Learn about the stages of germination

HOOK

 3-5 min

Have you ever wondered how a tiny seed turns into a large plant? Today, we're going to become plant scientists and explore that amazing journey – from seed to sprout

INTRODUCTION:

 5-10 mins

Plants start their lives as tiny, little seeds. Inside each seed is a tiny plant waiting for the right conditions to grow and flourish. With just the right amount of water, air, and warmth, seeds begin to sprout, or germinate. Instead of using soil, we'll be using a damp paper towel so we can watch the whole process up close! We'll be using lima bean seeds, which grow quickly and are large enough for us to see the changes easily. Over the next few days, you'll get to observe how roots and stems start to form – and even record what you see!




GERMINATION FOUNDATION

Plant germination is the exciting process when a seed begins to grow into a new plant. First, the seed absorbs water and swells, waking up from its resting state. Then, a tiny root breaks through the seed coat and grows downward to find water and nutrients in the soil. At the same time, a shoot starts growing upward toward the sunlight. With the right conditions of water, warmth, and air, the seed grows into a healthy plant, ready to make leaves, flowers, and fruits. Germination is the first step in a plant's life story!




DISCUSSION:

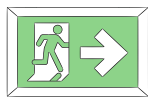
 5-10 mins

A seed is like a tiny package that holds everything a new plant needs to start growing. Inside the seed, there are three important parts. First, the **seed coat** is the outer layer that protects the seed from getting hurt or drying out. Next, inside the seed coat is the **embryo**. The embryo is the pre plant that will grow into a full plant someday. Finally, the seed has a food storage area called the **cotyledon**, which gives the seed embryo energy and nutrients while it starts to grow. When the seed has access to water and warmth, the seed embryo uses the food to grow **roots** that reach down and **shoots** that grow up toward the light. That's how a seed begins its exciting journey to becoming a plant!

ACTIVITY:

 25-30 mins

1. Fold a paper towel into a long strip (about the height of the cup) and roll it into a loose cylinder. The paper towel should fit snugly inside the cup, touching the sides.
2. Remove the paper towel, get it damp with water (not soaking!), then place it back in the cup along the inside wall.
3. Gently slide 2 lima bean seeds between the paper towel and the side of the cup so you can easily see them from the outside.
4. Use a permanent marker to write your name and the date on your cup.
5. Set the cup near a window or bright area. It should get plenty of light but not too much heat.
6. Over the next few days, watch what happens! You should start seeing the seed swell, split open, and send out tiny roots and shoots..



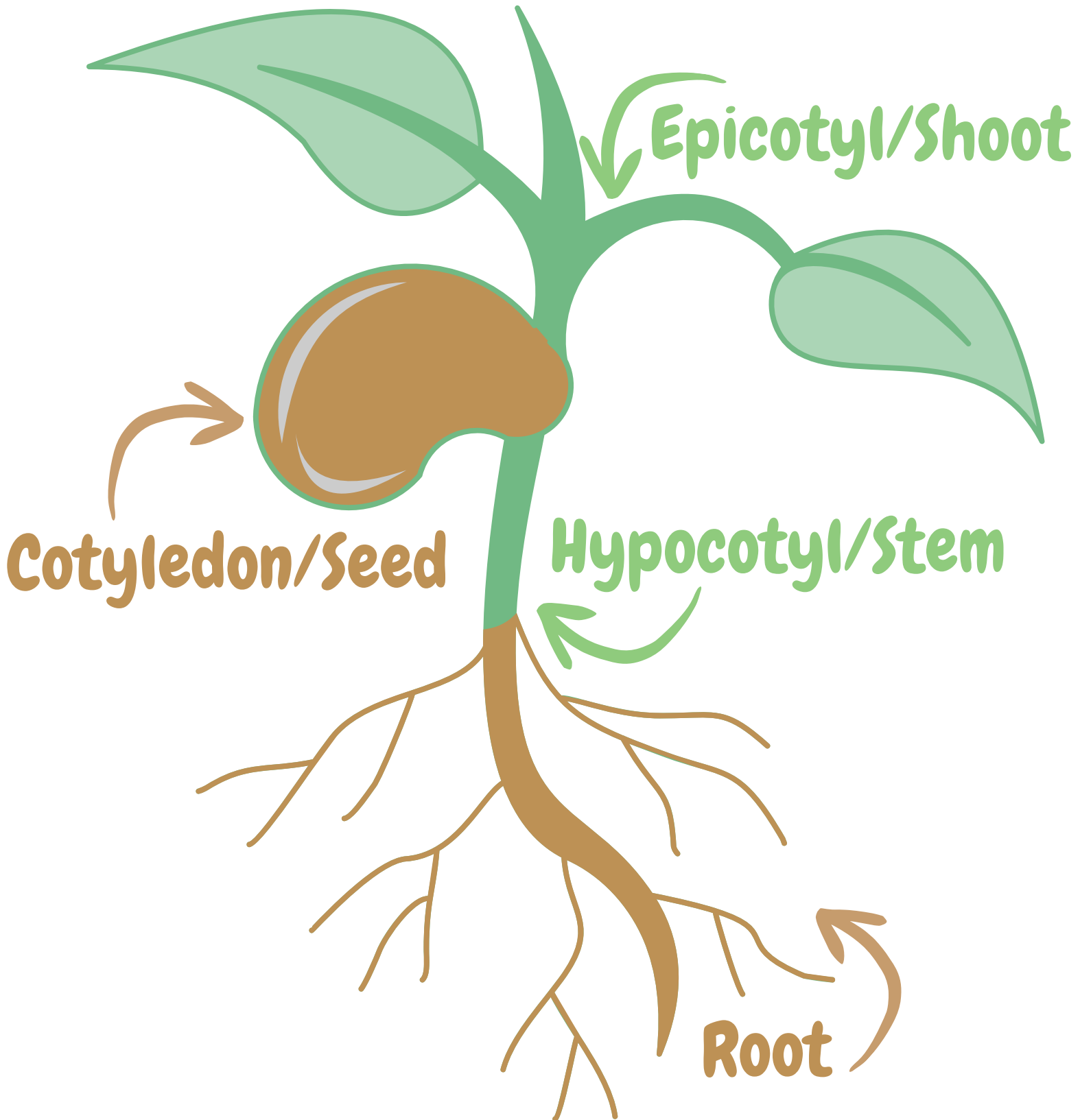
Exit Ticket



Ask students the following question as they walk out the door.

- Q: What part of the plant grows first?
 - A: The root
- Q: Why do you think the seed grows even without soil?
 - A: Water, air and warmth are needed for a seed to sprout!

SEED TO SPROUT



AT HOME PLANT CARE INSTRUCTIONS

- You've just planted a seed! Now it's time to help it grow! Here's how to care for your lima bean at home:
- Keep It Damp! Check the paper towel each day. If it's dry, add a little water—just enough to keep it moist, not soaked.
- Give It Light! Place your cup in a bright spot, like near a window. Avoid too much heat.
- Watch It Grow! In a few days, your seed will swell, crack, and grow roots and shoots!
- Be Gentle! Keep your cup still so your plant can grow safely.
- Ready for Soil? When your plant has roots and leaves, you can move it to a small pot with soil.

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