

Lesson 2: How Grass Grows

Essential Question: How can you grow heartier, healthier turf and plants?

Materials: grass seeds (from a garden center), potting soil, two clear plastic cups, tray, marker, measuring cup, water, Student Worksheet B: "Grow, Grass, Grow," scissors, paper, finger paints, newspaper, painting smocks or old shirts

Time Recommended: 45 minutes, plus several days for the experiment

Engage: Get Creative With Grass

1. **Prepare** for the lesson by digging up some grass plants from around your school or yard. Make sure their roots remain intact. Gently rinse and dry off the plants.
2. **Create** stations for students with grass plants, finger paints, and paper. Have them coat a plant in paint, lay it on the paper, and then carefully lift it off. Once the paint dries, have students identify and label the location of the grass plant's stem, leaves, and roots on their prints.

Explore: Putting Down Roots

3. **Hold up** a grass seed. Ask: *What is this?* Explain that **turf** (layers of grass and dirt held together by the grass plants' roots) students would find on lawns is made up of millions of tiny grass plants that grew from seeds.
4. **Tell** students that all plants need water to grow. Plants' roots soak up water from the ground. They need a lot of roots to get enough water to survive. A single grass plant's roots combined can measure more than 300 feet long.
5. **Explain** that students will conduct an experiment to learn more about grass plants' roots. Place two cups in the tray. Label the first "More Water" and the second "Less Water." Have students:
 - ◆ **Fill** each cup with potting soil and leave a one-inch space at the top. Pat down the soil to make an even surface.
 - ◆ **Sprinkle** a layer of grass seeds evenly on top of the dirt. Cover them with a thin layer of dirt.
 - ◆ **Pour** just enough water over the seeds to wet them thoroughly.
6. **Set** the tray in a sunny spot. After three days, the seeds will have sprouted. Add $\frac{1}{8}$ cup of water to the first cup every day for six days. Add the same amount of water to the second cup every third day.
7. **Observe** with students the plants' roots through the side of the cups as the plants grow.

Explain: Right Plants for the Right Place

8. **Ask:** *Which plants had longer roots, the ones in the "More Water" cup or the "Less Water" cup? (Answer: the "Less Water" cup) Discuss* how grass that gets watered often grows shorter roots. But grass that gets watered less often grows longer roots to search out every last drop of moisture. Deeper roots make plants healthier. These plants will be more likely to survive tough conditions, such as droughts. Ask: *Why would this be helpful to people and the environment?*
9. **Note** that grass that's watered less sometimes also turns brown. Clarify that the grass is not dead. It's **dormant**, or alive but not actively growing. This is part of a grass plant's natural life cycle. Brown grass will spring back to life when more water becomes available.
10. **Share** Student Worksheet B: "Grow, Grass, Grow" with each student. Have them follow the descriptions to illustrate each card and cut them out. Then help students put the cards into the correct order to show the steps in a grass plant's **life cycle** (stages an organism goes through as it grows). (Answer: Cards should be ordered 3, 2, 4, 1.)
11. **Discuss** how various **native** plants can be found in different parts of the United States. These plants are naturally better at surviving in the local climate from where they originate.
12. **Research** which types of plants, trees, and grasses grow locally in your area. Create a scavenger-hunt style list with their images. For homework, have students search their neighborhood to see how many of these native plants they can find.

Name _____



GROW, GRASS, GROW

HELLO, I'M GREEN RANGER. Grass like me grows in cycles. With enough water, grass seeds sprout and grow into green grass plants. But when there's less water around, grass turns brown. But that's okay! The grass is just **dormant**, or resting. When it rains, the grass will spring back to life.

Directions: Draw each image described for each card. Then cut out the cards and arrange them to show the life cycle of grass.

Card 1: Draw a grass stalk with tiny pods that hold seeds covering its tip.

Card 3: Draw a tiny grass plant, sprouting from a seed.

Card 2: Draw a grown grass plant with roots.

Card 4: Draw a patch of brown grass.

1

3

2

4