

GRADES K-2

TIME

One class period, 40-50 minutes

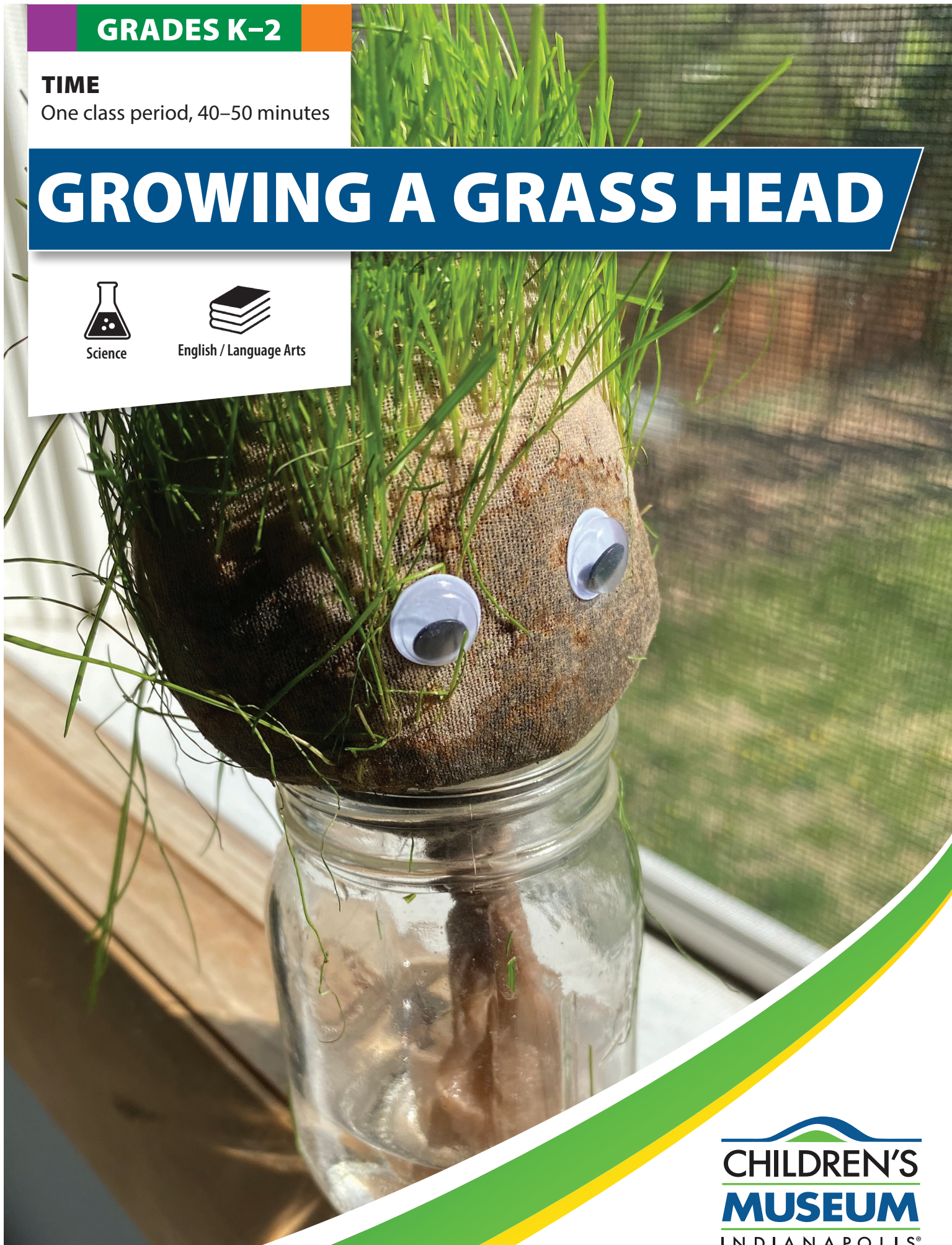
GROWING A GRASS HEAD



Science



English / Language Arts



GROWING A GRASS HEAD

The Children's Museum's lessons are designed to weave classroom experiences and museum education together. All lessons are interdisciplinary and can be used as individual classroom experiences or in combination to create a cohesive unit. Lessons are optimized when used in connection with museum field trips.

In this lesson, students will be introduced to **germination**, or the process by which an organism grows from a seed. In order to germinate, a seed needs water, oxygen, and proper temperature. Seeds start to germinate by developing root systems to seek water out from the soil. Then, shoots develop and grow in the direction of the sun above ground. After shoots reach the ground, a stem and leaves form which enables the plant to collect sunlight. Plants use sunlight, along with water and carbon dioxide to make food through a process called **photosynthesis**.

FOCUS QUESTIONS

- What do seeds need to grow?
- What is germination and why is it important when growing a plant?
- What do plants require in order to grow?

INDIANA ACADEMIC STANDARDS

Science: K.LS.1, K.LS.3, 2.LS.2

Language Arts: K.SL.1, K.SL.2.2, K.SL.2.4, K.W.1, 1.W.1, 1.SL.1, 1.SL.2.1, 1.SL.2.4, 2.W.1, 2.SL.1, 2.SL.2.1, 2.SL.2.4

OBJECTIVES

Students will:

- Understand how plants start from seeds
- Identify the needs plants have in order to grow and survive
- Observe plant growth over time



MATERIALS (for each grass head)

- A pair of nylon tights
- Large cup or mug
- ½–1 cup potting soil
- 2–3 teaspoons of grass seed
- 1/2 cup water
- Small jar
- Googly eyes, markers, or foam stickers (optional)



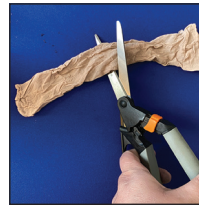
Photo Credits: Grass head (Cover), The Children's Museum of Indianapolis; Materials (above), The Children's Museum of Indianapolis; Grass sprouts (above), domnitsky / Adobe Stock; Procedure Steps, The Children's Museum of Indianapolis; Light bulb (page 3), mochipet / Adobe Stock; Zinnia (page 4), ksenia32 / Adobe Stock;

Growing a Grass Head

PROCEDURES

- Explain to students that all plants start from a seed, in a process called germination. Once a seed has germinated, it can grow into a plant.
- Ask students what they think a seed needs to germinate and grow into a plant. Write their responses on a board.
- Share with students that all plants require sun, air, and water to grow. Explain that plants use these elements to create food in a process called photosynthesis. Plants use energy from the sun to break down water and carbon dioxide and turn these into glucose, more simply known as sugar. The green pigment in plants, called chlorophyll, helps plants with this process.

1 Cut the foot off of an old pair of tights. Keep six to eight inches of the tights.



2 Stretch the foot over a cup with the closed-toe portion tucked down into the cup.



3 Add two teaspoons of grass seeds into the bottom of the toe and then add one-half cup of soil into the tights. Remember, the more soil you add, the bigger the head will be. Make sure to press the soil down to pack it into the toe. NOTE: The head should be large than the circumference of the cup so that it can sit atop without falling into the water.



4 Tie off the foot full of soil and seed into a knot and dip the bottom of the grass head into water to wet the soil and seeds.



5 Place the grass head over the jar of water, with the leg section dipping into the water. This will allow the tights to soak up water. Place the jar holding the grass head on a sunny ledge or window.



6 Students can also decorate their grass head with fun decorations such as foam stickers, googly eyes, or markers.



7 Over several days, students can watch the grass seeds germinate and grow shoots of grass.

TEACHER TIPS



How Does Your Garden Grow?

Explain to students that scientists observe plants over time, and take careful notes. Have the students make daily observations in an observation journals starting the day they created their grass head. Prompt them to make daily observations and predictions about what they might see tomorrow or in a week.

Ask students to think about what is happening inside the head of their grass head? Which is growing faster, the grass or the roots? Why is it important the plants have water and sunlight?

Encourage students to include data about their plant, including the height of the grass, and the amount of water in the jar.

The Fastest Growing Seed in Town!

A wide variety of plants are easy and quick for growing in the classroom.

Short-Term growth options:

All of these seeds sprout within a 5-7 day period when provided adequate water and sunlight:

- Lima beans, radish, green bean, and pea seeds

Flowers:

- Marigolds, zinnias, sweet alyssum, celosia, cornflowers or bachelor buttons, marigold and cosmos sprouts

Long-term growth options:

- After the plants have grown to a size suitable for transplanting outdoors, students can start a native plant garden outside the school and add new species of plants every year. Native plants require less water to get established and need only occasional maintenance after the first year.
- Look up verified National Wildlife Federation local plants in your area at <https://www.nwf.org/NativePlantFinder>



VOCABULARY

- germination
- photosynthesis

DON'T SCRAP THE SCRAPS

Students may be surprised to know that there are many different ways to grow a plant. Through the procedure, they learned how to start a plant from a seed. Students may also be interested to learn that the vegetative parts of a plant can be used to grow a whole new plant. Luckily, the vegetative parts and seeds of many plants can be found in their own kitchen! Here are a few ways students can start their own plants from the discarded parts of the fruits and vegetables that are used in their favorite meals.

Tomatoes

Start with a thick horizontal section of a tomato slice. The slice should include seeds from the tomato. Place the tomato slice in the middle of a medium-sized pot of soil that is two-thirds of the way full. Cover the slice with two inches of soil and keep soil moist. Place in a warm spot.

Romaine Lettuce

Cut a lettuce leaf two inches above the bottom. Place the bottom of the lettuce in one-half to one inch of water in a cup. Transfer to soil after five to seven days and continue to keep moist.

Bell Peppers

Large bell peppers have seeds still inside them once they are fully grown. When the pepper is hollowed-out, take the seeds and place them on a paper towel. Fill a pot two-thirds full with potting soil. Sprinkle the seeds atop the soil and cover with another two to three inches of soil. Place in a warm spot and keep the soil moist.

EXTENDING EXPERIENCE

- Have students make two grass heads and put one in a sunny window and the other in a dark area that does not receive much light. Have them make observations each day and compare and contrast growth.
- Place two grass heads side by side and ask them to lightly trim the grass on one once the grass is fully grow. They should make observations based on the effect of the trimming vs. not trimming.
- Encourage the class create an indoor greenhouse using recyclables such as empty soda bottles , plastic cups, and used egg cartons just to name a few.