

Plant Power Program

Pre- and Post-Activities for Grades K-8

ACTIVITIES

Growing Grass (K-2)

Curriculum Connections: Science, Mathematics

Materials: grass seed, clear cups, soil, water, colored permanent markers, teaspoons, rulers, paper, pencils

Description: Explain the needs of a seed: water, sunlight, air, nutrients. Have each student sprinkle grass seeds over a clear cup filled with wet soil. As the grass begins to grow over the next two weeks, students can measure their grass with a ruler and record its growth. Have students make and compare observations about their grass.

Growing the grass

- Lay out the materials on a table or counter. Give each student one clear cup.
- Have students fill the cup $\frac{3}{4}$ full of soil.
- Allow students to take one teaspoon of grass seed and sprinkle the seeds on top of the soil in the cup.
- Sprinkle a small amount of water over the seeds. The soil should be wet.
- Place the cups in a sunny spot.

Making and recording observations

- Give students paper to set up a simple graph. This graph will allow the students to record measurements over a period of 7-10 days.
- In a few days, the grass seed will begin to send out roots and the grass will begin to appear.
- Allow time each day for students to measure the length of the grass using a ruler.
- Compare student results. Which plant had the most growth? What differences are observed

Extension/Modification Activity: As an extension, allow students to use colored permanent markers to create faces on the cups. The growing grass will appear to be the hair. Students can then have fun giving the face a haircut using scissors.

A Seed is Sleepy (K-5)

Curriculum Connections: Language Arts, Science

Materials: *A Seed Is Sleepy* by Dianna Hutts Aston, a variety of seeds, paper, pencils

Description: Read *A Seed Is Sleepy* by Dianna Hutts Aston with the students and ask them to focus on the descriptive words used throughout the book. Distribute paper, pencils, and a few seeds to each student. On



paper, have students brainstorm a list of descriptive words for their seeds. The descriptive words should describe shape, color, size, and texture. Using the descriptive words listed, have students complete a paragraph beginning with the sentence “A seed is...”. Encourage students to share their paragraphs.

Extension/Modification Activity: Have students create a Venn diagram to help sort the seeds. Students can compare characteristics of various seeds provided.

Quick Growing Seeds (K-5)

Curriculum Connections: Science, Language Arts

Materials: four types of seeds from a natural foods store (mung beans, mustard seeds, alfalfa seeds, and aduki beans suggested), 4 large glass jars with lids, strainer, sink, paper towels, magnifying glasses

Description: Explain to students that seeds have everything they need to grow stored inside them. Have the students compare and contrast the shape, size, and color of four different seeds/beans. Rinse the seeds/beans and place them in separate jars on a windowsill. Have the students observe the beans and watch them sprout over the next few days.

Day One

- Give each student a sample of each seed/bean and a magnifying glass.
- Compare and contrast the seeds/beans describing size, shape, and color.
- While students are observing the seeds/beans, label one jar for each seed/bean.
- Have the students watch as you place the mung beans in the strainer, and rinse with water.
- Next, place the mung beans in the mung jar. Fill the jar half with warm water and screw the lid on loosely.
- Place the mung jar on a windowsill overnight.
- Complete the same process with the other three seeds/beans.
- Ask students what they think will happen overnight.

Day Two

- Have students compare the four jars.
- Use the strainer to drain the water from each jar of seeds/beans and rinse with cold water.
- Give each student one seed/bean that has sprouted. Using a magnifying glass, ask for observations. Did all the seeds/beans sprout?
- Place seeds/beans back into the jar and screw lid back on loosely.
- Complete the same process with the other seeds/beans.
- Watch them grow! Which ones will grow the fastest in the next few days?
- Continue rinsing the seeds/beans each day while conducting this experiment to avoid mold.
- Allow students to use the magnifying glasses to compare the sprouts each day. Compare and contrast growth.

Extension/Modification Activity: Students can use their fingers to dissect the tiny plants growing in the jars. Magnifying glasses can be used to get a closer. Older students could form a hypothesis and record findings on graph paper each day.



The Adventures of My Seed (3-8)

Curriculum Connections: Language Arts, Science

Materials: writing paper, pencils, crayons, or colored pencils, magnifying glasses, various flower seeds (marigold, zinnia, daisy), book *The Dandelion Seed's Big Dream* by Joseph Anthony

Description: Read *The Dandelion Seed's Big Dream* to the students. Discuss the adventures of the dandelion seed. Have students examine a seed with a magnifying glass and describe what they see. Then, have students write a story about their seed. Allow students time to share their stories.

Book discussion questions

- Where did it start? What places did it go? How did the seed feel during its travels?

Examining the seed

- Give each student a pencil, paper, one seed, and a magnifying glass.
- On paper, ask students to describe the seed using detailed language. Details must include size, shape, and color.

Creating the story

- Students will create a short story using the seed as the main character.
- Stories should include answers to the following questions: Where did the seed come from? Where will the seed go to start growing? What type of weather will it endure? How long before rain starts to fall? How long will it take to start growing? Who will take care of it? Will it grow a flower? What will it look like when it is fully grown? Will it have seeds? Then what?
- Students may draw pictures with crayons or colored pencils to go along with the storyline.

Extension/Modification Activity: Students can create a booklet by folding five pieces of paper in half. Students could be partnered up with a lower grade level to read the creative seed adventures to younger students.

Measuring Growth (3-8)

Curriculum Connections: Science, Mathematics

Materials: graph paper, rulers, paper, various seeds (marigold, zinnia, grass), soil, clear cups, large baggies, water, permanent marker

Description: Provide various seed choices for the students to pick from and have each student choose one type of seed to plant in a clear cup with soil. Have students measure plant growth over the next two weeks and record their measurements on graph paper. Other observations can be recorded on the back of their graphs. After two weeks, students should compare and contrast the growth of the different types of seeds they planted.

Growing the seeds

- Have student make a hole in the soil as deep as their fingernail. Place the seed in the hole and cover with soil. Moisten the soil.
- On the outside of the cup, record the date and the type of seed planted with a permanent marker.



- Place the cup into a baggie and seal. Place the cup in a sunny window.
- When the plant is big enough, remove the baggie. Plant should not touch the side of the baggie during this experiment.

Recording observations

- Give each student a piece of graph paper to record the growth of the seed over a two-week period.
- Along the bottom axis of the graph have students write one day increments (0-10 days).
- Along the left axis have students write one-inch increments (0-12 inches).
- Each day, students should use a ruler to measure plant growth and record results on the graph. Students may want to include other visible observations on the back of the graph for each day of the experiment.
- At the end of two weeks, compare and contrast the growth and observations of the various seeds planted. Which seeds grew the fastest? Which seeds grew leaves first?

Extension/Modification Activity: If students have access to an outdoor garden area, use these plants for a garden outdoors. Observations can continue until flowers are visible. Flowers can be dissected to identify the parts of the plant responsible for reproduction.

Hybrid Plant Research (6-8)

Curriculum Connections: Science, Technology

Materials: computer; optional: recycled materials, other model-making materials

Description: Discuss the topic of hybrid plants with students. Have students research a specific hybrid plant and learn about why and how those plants were created. The hybrids can be ones they learn about at Longwood or other hybrids. Have students create a power point presentation about the hybrid they researched and present to the class.

Extension/Modification Activity: Students can create a model of the hybrid they researched and show it to the class during their presentation.

Identifying Plants (3-8)

Curriculum Connections: Science, Technology

Materials: mobile device with camera, iNaturalist/Seek app, paper, pencil, outdoor area with a variety of plants; optional; plant stakes/popsicle sticks, markers

Description: Locate an area with a variety of plants that students can explore. Have students take pictures of plants and identify them using the iNaturalist app on a mobile device. Each student should record the names of the plants they have identified on a piece of paper. Once students are done exploring, have them share the names of the plants they identified. Create a list with the entire class of all the different plants.



Extension/Modification Activity: Students can carry plant stakes/popsicle sticks and markers around with them as they use the iNaturalist app and identify plants. Once they identify a plant, students can write the name on a stake/stick and place it in the ground by the plant.

Design a Garden (3-8)

Curriculum Connections: Science, Mathematics, Art

Materials: computer, paper, graph paper, colored pencils, crayons, or markers, ruler; optional: poster board, clay, popsicle sticks, other model-making materials

Description: Students will design their own garden based on research they have done. Using graph paper or rulers, have students design the garden to scale and draw it out on paper. Explain how they can use different symbols and colors to represent plants and garden features. Students should make a key showing what each symbol and color represents. Have the students share their garden designs with the class.

Garden Design Details

When students are researching and designing their gardens have them keep these questions in mind:

- What types of plants should you use? What colors? What sizes?
- What climate factors do you need to consider?
- What is the purpose of this garden? Are you trying to attract pollinators, birds, or other wildlife?
- Do you want anything other than plants in your garden? Bird feeders, bird baths, bird houses, benches?

Extension/Modification Activity: Students can make a 3-D model of their garden with poster board, construction paper, clay, recycled materials, or other model-making materials.

Air Plants (3-8)

Curriculum Connections: Science, Art

Materials: air plant, container (terrarium, globe, jar, shell, etc.); optional: natural materials such as moss, rocks, bark for additional plant styling, internet access

Description: Explain how air plants get all the needs of a plant even without soil. Distribute an air plant and container to each student along with optional natural materials if using them. Have each student set up their air plant in its new home.

Growing your air plant

- Air plants are epiphytes, meaning they do not need soil to grow because they can absorb nutrients from the air.
- Show students how to water their air plant. They can soak them in running water about once every two weeks or mist them with water every other day.
- Students can place their air plants in their container of choice. Get creative! It is also fun to add other natural materials to the container.
- Place the plants in a sunny place in the classroom or have the students keep them in a sunny place at home.



Extension/Modification Activity: Students can research air plants and present their findings to the class.

WEB RESOURCES FOR TEACHERS AND STUDENTS

The Children's Butterfly Website

<http://www.kidsbutterfly.org/life-cycle>

Butterflies and Moths of North America

<http://www.butterfliesandmoths.org/>

Pollinator Partnership

www.pollinator.org

Scholastic – Plants: A Collection of Teaching Resources

<https://www.scholastic.com/teachers/collections/teaching-content/plants-collection-teaching-resources/>

SUGGESTED PRINT RESOURCES FOR STUDENTS

Krauss, Ruth, and Crockett Johnson. *The Carrot Seed*. New York: Harper & Brothers, 1945. Print.

Anthony, Joseph, illustrated by Cris Arbo. *In a Nutshell*. Nevada City, CA: Dawn Publications, 1999. Print.

Anthony, Joseph, and Cris Arbo. *The Dandelion Seed's Big Dream*. Nevada City, CA: Dawn Publications, 2014. Print.

Richards, Jean, illustrated by Anca Hariton. *A Fruit is a Suitcase for Seeds*. Brookfield, CT: Millbrook Press, 2002. Print.

Jordan, Helene J., illustrated by Loretta Krupinski. *How a Seed Grows*. New York: Harper Collins Publishers, 1992. Print.

