

STEM in the lab

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EARTH DAY: Seed Balls



GRADE LEVELS

This activity is appropriate for grades K-6.



MISSION

Create an Earth Day seed ball.



VOCABULARY

SEEDS: the small parts produced by plants from which new plants grow.

GERMINATION: the phase of plant growth when the seed begins to sprout.

BIOMASS: the organic material that has stored sunlight in the form of chemical energy. It is a renewable energy source because the energy it contains comes from the sun.

BIOMASS FUELS: includes wood, wood waste, straw, manure, sugar cane, and many other byproducts from an assortment of agricultural processes.



MATERIALS

- » 3-4 flower packets
- » 3 pieces of construction paper (green, blue, and white) or recycled paper
- » Food processor or blender
- » Scissors
- » Water
- » 3 small containers or bowls
- » Baking sheet and parchment paper (for drying seed balls)



ABOUT THIS ACTIVITY

Have you ever planted a seed and watched it grow? Try creating a seed ball in celebration of Earth Day. Seed balls are beneficial to Earth's environment because they involve recycling paper and growing more flowers or vegetables for our planet. Plant your seed balls in a garden or a flower pot at home. Then collect data and observations on your seed ball's growth. You may share your findings with a family member. Enjoy this engaging and Earth-friendly science experiment!

INSTRUCTIONS

1. Cut construction paper into one-inch squares. Place each color separately in a container or bowl.
2. After you have cut your paper squares and each container or bowl is ready, add water. Cover the paper completely with water and allow to soak for 20 minutes.

? **Why does the paper need to soak in water?**

3. When the 20 minutes are finished, take one color or container of paper at a time and squeeze the excess water out of the paper.
4. Choose one color or bowl at a time to place the paper in a food processor or blender. Pulse the paper until it becomes pulp.
5. Place the pulp back into its individual container or bowl. Repeat with the next two colors until you have three containers of pulp.

? **How will the pulp consistency of the paper help with this experiment?**

6. Divide the packages of seeds between the three containers, gently mixing them into the pulp.
7. Take a little bit of each color from its container or bowl and form it into a ball. Green, blue, and white paper will make your seed ball resemble the Earth in honor of Earth Day. If you used other colors, that's great too! To create the Earth seed ball, try not to mix your colors up too much.
8. Using a baking sheet, place your seed balls onto parchment paper.

? **Why are you adding seeds to the paper?**

9. Press a few more seeds into your seed ball if you would like, and allow your seed balls to dry overnight.

? **Why do the seed balls need to dry overnight?**

10. Plant your seed balls in a garden or flowerpot at home.

? **How many seed balls will you plant in your garden or flower pot?**

11. Collect data and observations of your seed ball's growth in an observation journal. Share your findings with a family member.

? **What did you notice that happened to your seed ball over time? What natural resources from the Earth did your seed ball need to grow healthy and strong?**



EXTENSIONS

- » Try planting vegetables in your seed balls instead of flower seeds to create a garden. Record your findings and create different recipes using your homegrown veggies.
- » Make a seed ball to gift to a family member or friend.
- » Create seed paper. Seed paper is an example of how to recycle and reuse something in your home. Seed paper may be used to create greeting cards to send in the mail to family members or for other crafts at home. For a template with steps and directions, visit: <https://climatekids.nasa.gov/seed-paper/>
- » Check out the list of educational videos below on germinating seeds and creating more Earth-friendly projects using paper and seeds.

RESOURCES

- » **Seed germination for K-3rd grade:**
<https://youtu.be/TE6xptjgNR0>
- » **INL bioenergy overview for 6th grade:**
<https://youtu.be/Mm8vPYtcAs0>
- » **Seed paper for 4th-6th grade:**
<https://youtu.be/hwL9EDP8Mtc>
- » **DIY homemade paper seeded garden cards:**
<https://youtu.be/8zkTE3JCOuc>
- » **Planting beans in a jar for K-1st grade:**
<https://youtu.be/RTRW2Cf9U2U>
- » **3 quick sprout projects at home for K-1st Grade:**
https://youtu.be/_4eU0eOfvY
- » **Create different shapes for seed balls for K-3rd Grade:**
<https://youtu.be/5kS5e3hoVJ0>



DIY homemade paper seeded garden cards.

LEARN MORE

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