



Week 5



Sprouting into Science

Challenge

What's growing in your yard? Take a picture, sketch, or paint the plants and flowers you observe sprouting at your house! Share your results with us on Instagram or Facebook by using the hashtag #SOLACEchallenge and tagging @swanerpreserve. You can also send a picture of your completed challenge to swanerecocenter@usu.edu!

Kahoot

This week's Kahoot quiz explores how plants grow! Our Kahoot quizzes require reading, and are targeted toward 3rd-5th graders, but younger youth should be able to complete them with the help of an adult or an older sibling. Kahoot quizzes are intended to test your child's knowledge, and to help them learn new information!

Kahoot is an online learning platform that allows educators to create quizzes, then engage with their students through their mobile device, tablet, or computer. Your child will need access to the internet for this activity. You can access the quiz [here](#) or download the [Kahoot app](#) then use the game pin 02092388.

Story Time

This week's story is Flip, Float, Fly: Seeds on the Move by JoAnn Early Macken. Check out our recorded reading of this story [here](#)! Each week the story will be uploaded to YouTube to view anytime, anywhere.

This week's activities include:

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|----------------------------------|---|
| Craft | Seed and Bean Mosaic |
| Design Challenge | Seed Dispersal Design |
| Outdoor Activity | Botany Scavenger Hunt |
| Observation Activity | Plant Dissection |
| Recipe from EATS | Roots & Shoots Spring Rolls |



Craft: Seed and Bean Mosaic

Mosaics are a special form of art that use small pieces to create larger pictures. Mosaics are often created using pieces of glass, tile, or marble, and they can be found covering walkways, walls, and more. In this activity you'll create your own mosaic using seeds, cardboard, and glue!

Time Frame

15 – 45 minutes

Materials

- Beans
- Many types of seeds
- Liquid glue
- Cardboard, or other stiff paper
- Pencil, markers, or crayons
- Paintbrush (optional)

Procedure

1. Collect seeds of all shapes, colors, and sizes—some different ideas include beans, rice, bird seed, corn kernels, sunflower seeds, pistachio shells, etc.
2. Think of and sketch a design for your mosaic. Make sure that your design includes large areas that can be filled with seeds, rather than lots of small details.
3. Work on one section of your mosaic at a time. Pick one shape or area to work on, and apply glue within the shape. Spread the glue with your finger or a paintbrush.
4. Fill the shape with seeds. You can use one type of seed per area, or create a mix for different shapes, depending on how many types you have available.
5. Continue to fill one section of the picture at a time, using different seeds for each area.
6. Remove the excess seeds once the picture is completely dry. Tip the cardboard to one side, so that the excess seeds slide off.
7. If any gaps or holes are left in your picture, fill them in with glue and more seeds.

Guiding Questions

1. Can you identify the different types of seeds we have? What kind of plants did they come from?
2. What kind of design or picture do you want to create for your mosaic?
3. Which seeds will you use for which areas of the mosaic? Why did you pick those?

Extended Learning

1. Try planting some of the leftover seeds to see if you can get them to sprout. What observations do you have once they begin to grow?
2. Now that you've created a mosaic, can you think of materials other than seeds you could use to create a different one? Create a new mosaic using creative materials!



Design Challenge: Seed Dispersal Design

While they can't walk, seeds use a variety of dispersal mechanisms to travel to new places, which allows plants to spread and grow in new areas. In this design challenge, your child will design and create their own seed that is specially adapted to travel to new places to put down roots.

Time Frame

30 minutes – 1 hour

Materials

- Velcro
- Strips of paper
- Plastic bags
- Paper clips
- Bubble wrap
- Tissue paper
- Coffee filters
- Aluminum foil
- String
- Pipe cleaners
- Twist ties
- Scissors
- Tape

Procedure

1. Ask
 - Discover the different types of seed dispersal! Watch this week's [storytime](#) or [read more](#) about the different types of dispersal.
 - What are some important features or characteristics of seeds that allow them to move?
2. Imagine
 - What type of dispersal mechanism do you want your seed to use?
 - Brainstorm a few ideas of how you want your seed to look.
 - Try sketching out your ideas on a piece of paper. Make sure to label the different structures and their function in your drawing.
 - What materials can you use to design your seed?
3. Create
 - Pick your favorite ideas and begin collecting the materials you need to make your seed.
 - Create your seed! Know that changing plans as you're creating is okay. Professional engineers often have to make changes to their plans, or even start over completely if their original design doesn't work.
4. Explain
 - Once you've completed your design, share with someone! Explain to them the type of dispersal mechanism your seed uses, how you designed it, etc.

Guiding Questions

- Have you noticed how seeds move in nature? Think about dandelions, burrs, apples, and more!



- Do you think any dispersal mechanism is more effective than others? Why or why not?
- Do you think different dispersal mechanisms work better in certain habitats? Why or why not?
- What type of dispersal might be most common in Utah? Why do you think that?
- What dispersal mechanism will you design your seed with? What kind of features will your seed have to represent that dispersal mechanism?

Extended Learning

- Write each of the 5 type of dispersal (wind, water, fire, animal, bursting) on slips of paper. Select one without looking, then challenge yourself to design a seed that uses that dispersal mechanism.
- Head outside for a seed scavenger hunt. How many different examples of seed dispersal can you find in nature?



Outdoor Activity: Botany Scavenger Hunt

From seeds to stems, this scavenger hunt will have your child outdoors searching for parts that make up a plant! They will use their sense of touch and sight to explore the amazing varieties of textures, colors, and shapes that make up the plant world in your community. There is an option to collect samples of plants to be used later on in the observation activity.

Time Frame

30 minutes – 1 hour

Materials

- [Botany Scavenger Hunt](#)
- Clipboard
- Pen or pencil
- Scissors
- Bag to collect plant samples

Procedure

1. Print out the botany scavenger hunt, or pull it up on a mobile device. Grab a pen or pencil and clipboard if using a paper copy.
2. If collecting plant samples for the observation activity, grab a bag and a pair of scissors. Make sure to ask for adult permission beforehand!
3. Head outside! You can complete the scavenger hunt in your yard, go for a walk around your neighborhood, or take it on a local hike.
4. As you find the different items on the scavenger hunt, mark them off!
5. If collecting plant samples for dissection, please observe the following guidelines:
 - Do not pick flowers or plants out of garden beds, unless given permission
 - Avoid picking plants that are low in numbers
 - If possible, look for parts of plants that have fallen off naturally to collect
 - When cutting off a plant part, be gentle. If it can be done easily with just your fingers, use this method. For woodier, thicker parts, use a pair of scissors.
 - Only take a small amount of the plant to observe.
6. Place plant samples in a bag (ziplock works great!) to protect them from damage
7. When you've completed the scavenger hunt, share your findings! If completing as a group, talk about which items you found to fit the various descriptions. Compare the similarities and differences!

Guiding Questions

- Were you able to find everything on your scavenger hunt?
- What was the easiest to find? Most difficult?
- Did you ever notice the variety of stems before? What about leaves?
- What did you find to be the most interesting?
- Can you think of why a plant would have a seed case that can float? What about a seed case that has hooks?



- How do the different parts of a plant help it to grow, reproduce, and live?

Extended Learning

- Bring along a nature journal or extra piece of paper on your scavenger hunt. Draw and write descriptions of the plants you discover. Write down any questions or curiosities you have (“Why are some leaves fuzzy?”). When you get back home, do some research!
- Create your own botany scavenger hunt! Plant anatomy varies greatly – look up other types of leaves, stems, flowers, and seeds. Pick your favorites and see if you can find plants that match them!



Observation Activity: Plant Dissection

Plants portray beauty from the outside, but have you ever looked on the inside? Time to dig in and reveal the mystery of the innerworkings of a plant!

Time Frame

30 – 45 minutes

Materials

- Variety of plant samples
- Butter knife, scissors (ask for adult permission to use beforehand)
- Placemat
- Paper
- Pen or pencil
- Magnifying glass (optional)
- Microscope (optional)

Procedure

1. Set up an area where you will be dissecting your plants. It can get messy! We recommend setting a placemat or a few old magazines on a clean, hard surface to use as your workspace.
2. Gather your supplies. Find something that will help you cut into plants, such as a butter knife or pair of scissors. It doesn't need to be very sharp! Make sure to ask an adult for permission to use these items.
3. If you collected plant parts from the botany scavenger hunt, take those out of the bag. Another idea is to dissect fruits or vegetables you have around the house.
4. Pick a plant part you want to dissect! Carefully cut into it to expose what's inside.
5. What do you notice? Record your observations on a piece of paper. Some ideas of what to write down include what it looks like, how it smells, what the texture reminds you of, and what you wonder.
6. If you have a microscope or magnifying glass, use it to look closely at what's inside. To make your own magnifying glass, check out this [video](#) from [The Glacier Institute](#).
7. Discuss your findings with someone else. Talk through what you noticed and how specific characteristics may help the plant to survive (e.g. "I noticed the inside of the stem was wet. I think this helps the plant survive because...")
8. Clean up by adding the plant parts to your nature journal, throwing them in the compost bin, or by engaging in the extending learning activities!

Guiding Questions

- Have you ever cut open a flower? A stem? What do you expect to see inside?
- What part of a plant are you most excited to dissect? Why?
- How does looking at the inside of a plant's structure help us understand its function?
- What surprised you the most when dissecting?



- Was there a plant part you didn't have that you'd like to dissect? What would a plant's root system look like?

Extended Learning

- Sort your plant parts into categories of your choice. Some ideas are to sort them by color, size, shape, texture, etc.
- Create artwork with your dissected plants! You can make nature art with flower petals and stems, or try pressing the chlorophyll out of leaves to paint!
- What parts of a plant are edible? Research fruits and vegetables to figure out what part of the plant you are eating. For example, broccoli is a flower and carrots are roots!



Recipe from [EATS](#): Roots and Shoots Spring Rolls

Serves 8

Time Frame

20 minutes prep time

Ingredients

Dipping Sauce

- ¼ cup unsweetened sunflower seed butter
- 2 cloves garlic, grated
- 1 2-inch piece ginger, grated
- 2 tablespoons tamari
- 2 tablespoons rice wine vinegar
- ½ teaspoon sesame oil
- 1 teaspoon water

Spring Rolls

- 8 rice paper wrappers
- 2 scallions
- 4 medium-sized carrots, grated
- 2 medium-sized sweet potatoes, diced
- 2 cucumbers, julienned
- 1 avocado, sliced
- 1 large handful pea shoots
- 1 large handful bean sprouts
- Herbs – mint and/or basil

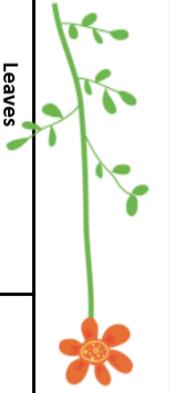
Directions

1. Preheat oven to 400° Fahrenheit. Dice sweet potatoes, toss with olive oil and salt. Spread the sweet potatoes into a single layer on a baking sheet. Roast for 25-35 minutes, until tender when poked with a fork.
2. While sweet potatoes are roasting, prepare vegetables. Chop scallions, grate carrots, julienne cucumbers.
3. In a separate bowl, prepare the sauce. Grate ginger and garlic. Whisk together all the ingredients of dipping sauce.
4. Remove sweet potatoes from oven and allow them to cool.
5. Fill a wide, shallow bowl with warm water. Soak rice wrapper in bowl for 20 seconds, or until pliable. Move rice wrapper to a plate to fill.
6. Place a layer of fillings on bottom third of wrapper, leaving a ½ inch border. Fold bottom of wrapper tightly over fillings, tuck in sides, and continue to roll.
7. Eat immediately with dipping sauce, or cover with damp paper towel and refrigerate up to 2 hours.



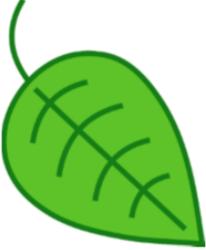
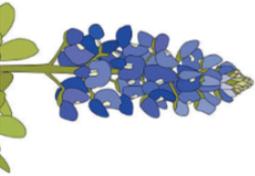
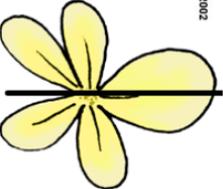
Guiding Questions

1. What part of the plant is a carrot? What about mint or basil? Can you identify what part of the plant each of the ingredients is?
2. Which season do each of these ingredients best grow in?
3. How do vegetables play a role in eating healthy?
4. What are some ideas of what to do with the vegetable scraps that will minimize food waste?



Botany Scavenger Hunt



Leaves		Stems		Flowers		Seeds	
Leaf with smooth edges		Tendrill		Radial symmetry		Cone	
Furry or fuzzy leaf		Hollow stem		Flower spire		Seed case with hooks or barbs	
Opposite leaves		Fuzzy or hairy stem		Umbrella-shaped flower		Seed case that can float/fly	
Conifer needles		Lateral bud		Bilateral symmetry	 2002	Seeds encased in a pod	