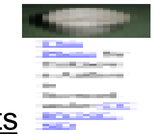
STEM in the Garden Activities



Recycled Newspaper Starting Pots

Materials: a soup can, strips of newspaper, seed-starting soil, seeds, spray bottle filled with water, tray or plastic baggie

1. Cut strips of newspaper long enough to wrap completely around the length of a soup can with about 2-3 inches hanging beyond the bottom, depending on the size of the can.
2. When ready, begin wrapping the newspaper strip around the top of the soup can leaving 2 inches of the newspaper longer than the bottom of the can.
3. Fold the newspaper beyond the bottom of the soup can in towards the center of the can bottom. It's okay to overlap the folds. Try not to leave any of the bottom can showing. Press the can down onto a hard surface to compress the folds. This makes the bottom of the paper pot.
4. Remove the soup can and you should have a can-shaped starting pot. Repeat steps 1 – 4 until you have the number of starting pots you want.
5. Fill the newspaper starting pot ¾ of the way with soil. Place a seed or two on the soil and fill the pot the rest of the way with soil.
6. Place the starting pot on a tray or inside a plastic baggie. Spray with soil with water until wet but not soaked.
7. Place the tray or baggie in a warm and sunny area. Spray with water every couple of days to keep moist.
8. Seedlings in newspaper starting pots can be transplanted directly into the ground or large pot. No need to remove the newspaper – it decomposes!

Cell Phone Microscopes

Add a portable microscope to your cell phone camera and enjoy exploring the garden close up. View leaves, soil, bird feathers, parts of dead insects, roots, stems, objects, etc. Have youth take photos or draw what they see. Discuss the similarities and differences of things seen. Note: Microscopes vary in magnification strength which impacts how many details the youth will be able to view.

Resource for microscopes:

1. Jiusion 30X Zoom Bright LED Stereo Microscope Magnifier (Amazon)
2. 100x-250x Pocket Microscope by Tennco (Amazon)
3. Carson MicroMini 20x LED Lighted Pocket Microscope (Amazon)

Soil Health Test Assessments

Worm Count: 

Items: Shovel, magnifying glass, earthworm identification book, tap water, mustard powder.
Prep time: 10 minutes Test time: 10 minutes

Method: Dig a one square foot hole 12 inches down. Collect the soil from the hole on a tarp. Mix 2 tablespoons of mustard powder into one half gallon of tap water. Pour water and mustard into the bottom of the hole. Count and identify the worms from the removed soil as well as any that came into the hole after mustard application.

Insect Observation: 

Items: Shovel, magnifying glass. Prep time: Less than one minute to collect a shovel of soil. Test time: 5 minutes

Method: Directly observe the soil surface looking under leaves and residue. Dig up the top few inches of soil and gently break it apart looking for invertebrates. Notable animals may be collected for further identification.

Water Infiltration Test: 

Tools: plastic ring (PVC) 6 inches in diameter, mallet/hammer, plastic wrap, container of distilled water, timer

Method: Place the ring on the area you want to test. Clear away any rocks/plant materials from inside the ring until you have bare soil. Use the mallet/hammer to tap the plastic ring down about 1-2 inches into the soil. Line the ring loosely with the plastic wrap so that it covers the inside of the ring and drapes over the side – don't make it tight. Pour 1 cup of water into the plastic-lined ring (the cup of water represents rainfall in 60 seconds). Gently pull the plastic wrap away and have someone time how long it takes for the water to infiltrate the soil. Stop the timer when the water is absorbed into the soil. Test several areas to compare.

<u>Other Activity Ideas To Try</u>

- Play “I Spy” (younger children) or “20 Questions” (older children) for youth to guess an item in the garden.
- Act out (pretend) being one of the features of a garden plant.
- Make rubbings of plants (leaves, flowers, stems) or take photos and create a collage of what was observed in the garden.
- Provide youth with a paper bag and a Scavenger Hunt list of items from the garden to collect (or just the list to cross off when found).
- Take youth on a sensory walk through the garden. Encourage them to use their senses (sight, sound, touch, smell, and taste) as they explore the garden.
- Have youth grow microgreens or sprouts using a plastic take-out tray or a glass jar.
- Identify invasive organisms or plants in the garden. Research how to remove them and then do so.
- Make videos of favorite plants in the garden and share them with others.
- Create a crop rotation chart for the garden.
- Test the soil in the garden for deficiencies. Use kitchen scraps to improve the soil.