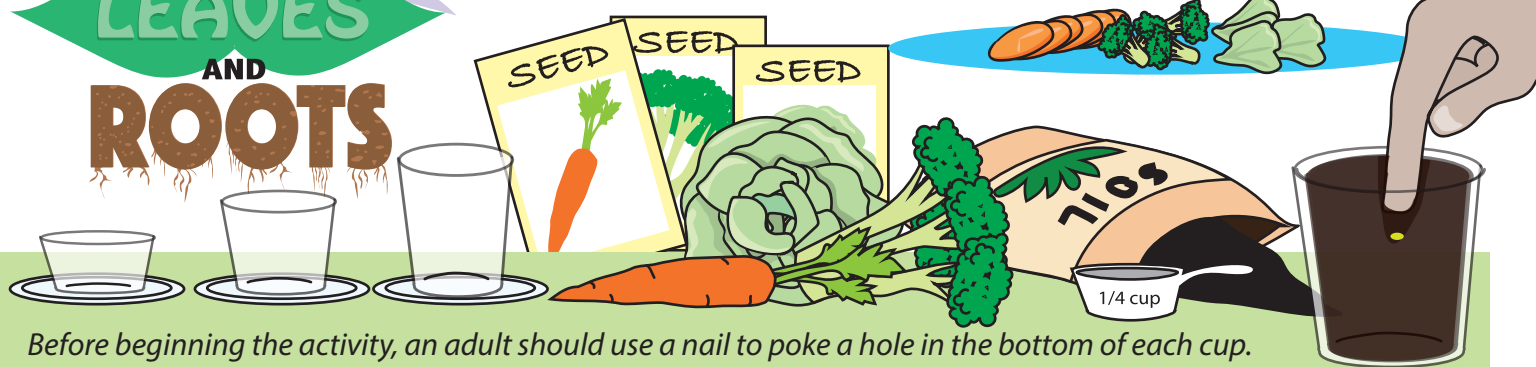


FLOWERS
LEAVES
AND
ROOTS

You will Need:

one shallow, medium and deep clear plastic cup for each child, soil, ¼ cup scoop, one carrot with stems and leaves on top, one stalk of broccoli, one head of lettuce, carrot seeds, broccoli seeds, lettuce seeds, water, small plate for each cup

Snacks for Tasting: chopped carrots, broccoli, lettuce



Before beginning the activity, an adult should use a nail to poke a hole in the bottom of each cup.

1. Give each child 3 cups, shallow, medium, and deep.
2. Have children fill their cups to the top with soil using the scoop. Measure and discuss how many scoops each cup holds.
3. Pass around the carrot, broccoli and lettuce. Compare them and discuss how they grow.
4. Ask the children for their hypotheses - What vegetable will grow best in which container?
5. Have each child make one seed hole in each cup with a pointer finger, sinking the finger into the soil to the first knuckle.
6. Have each child add 2 seeds per vegetable per cup and pinch and pat the soil.
7. Water the cups and put them on plates in a sunny window.

- What kinds of vegetables have you eaten today?
 - What do you need to grow up healthy? What does a seed need to grow into a healthy vegetable?
 - What sizes, colors and shapes are the carrot, lettuce, and broccoli?
 - How can you tell the difference between a flower, leaf and root?
 - What shape container do you think would work best for the carrot to grow? Why?
 - How can you tell that a carrot is a root?
- What part of the plant do you eat when you're eating broccoli or lettuce?



DISCOVER

Vegetables grow in all shapes and sizes. Carrots (roots) grow under the ground in a deep container. Lettuce (leaves) and broccoli (flowers and stems) grow on the top of the soil and need a shallow container. People feel better and are healthier when they eat a variety of colorful fruits and vegetables.



The Vegetable Song

(to the tune of Twinkle, Twinkle Little Star)

Carrots, Lettuce and Broccoli,
Vegetables are good for me.
In my snack and in my lunch,
Vegetables are great to munch.
Carrots, Lettuce and Broccoli,
Vegetables are good for me.

Act out the different vegetable shapes as you sing.

READ

Tops and Bottoms by Janet Stevens.
Harcourt Brace, 1995.

The Carrot Seed by Ruth Krauss.
Harper & Row, 1945.

Teaching Tips

GrowingGreat activities encourage children and adults to learn and play together. We suggest you alternate between quiet, focused time and moving and playing together. For this activity, we start with the story, then get up and do the song and hand motions, and finish with the hands-on science activity and snack.

1. Do you encourage children to play with science?

We focus on process rather than content. We allow children to practice STEM (science, technology, engineering, and math) skills such as testing hypotheses and problem solving. In this activity, we address the engineering question: Does the size and shape of its container affect the size and shape of a root, leaf or flower? We discuss the parts of a plant that we eat and how they grow. We introduce early geometry concepts regarding shape and volume.

2. Are there opportunities for language development?

We read stories, ask questions and sing songs to connect with students and teach vocabulary. We stop throughout the story time to allow children to talk about what we're reading. This activity introduces the words "deep" and "shallow," as well as roots, stems, flowers and leaves.

3. Are the experiences open-ended?

We offer more than one way to engage with materials in a setting where there can be more than one right answer. In this activity, the children can plant seeds in whichever container they choose and then compare and contrast the container choices as the seeds grow. We ask open-ended question and listen to children's answers.

4. Do your environment and materials include a mixture of familiar and new things?

We provide authentic, real-life experiences that encourage children to ask "why," using edible materials from the garden and grocery store. Children can plant or transplant seeds or seedlings in their garden, and then tend, maintain, harvest and create a salad from what they grow.

5. Are you a co-explorer with the children, not an expert?

We allow children time for self-directed experimentation. We can play and be messy too. We suggest an art project to accompany this activity as another way for children to explore and express themselves. Ask them to create an advertisement for their favorite edible flower, leaf or root, using whatever medium you and they choose.

GrowingGreat's mission is to empower every child to grow up healthy through science-based garden and nutrition education. Does your school have a garden or nutrition education program? Email info@growinggreat.org for more information.

Written by Jill Coons and Stephanie Hartney

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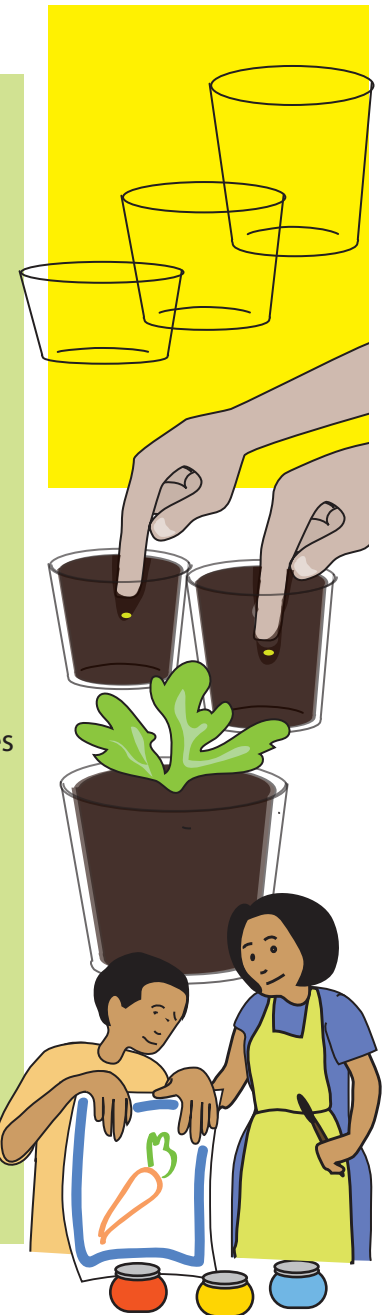
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* adapted from the Science Centers Early Learners Collaborative

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