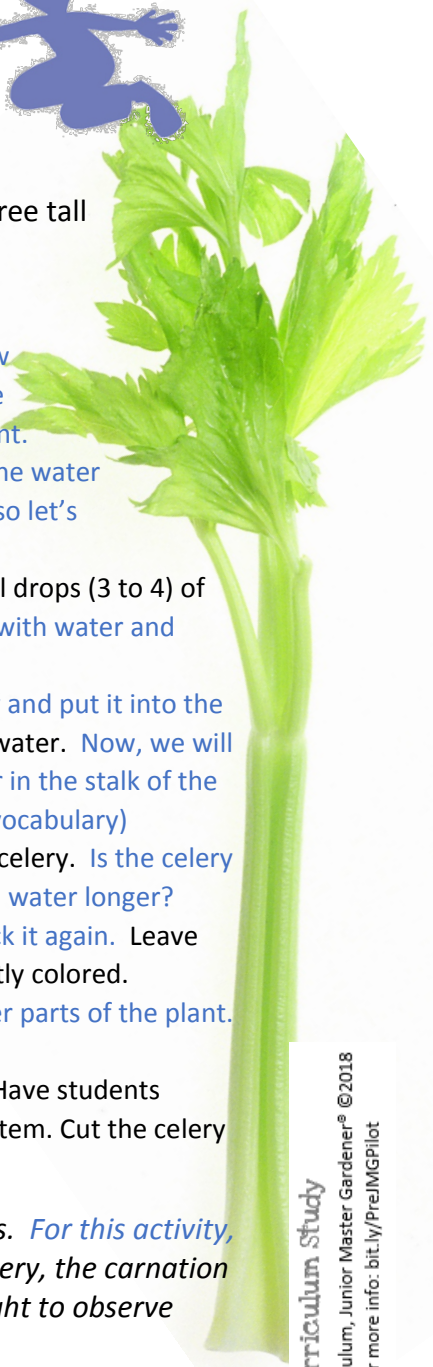
Stems & Leaves

day one

Learn, Grow, Eat & Go!
EARLY CHILDHOOD
week 3

Predict and observe the movement of different colors of water through stems.



LESSON A: Coloring Stems Science

Objectives: Students will explore and learn about the function of stems..
Time: 10 minutes

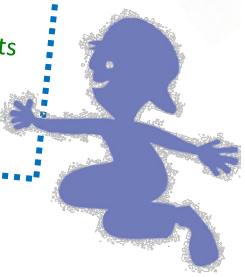
Materials/Prep: Celery stalks (use the center stalks with the leaves attached) ,three tall clear glass or jar partially filled with water, knife

Lesson Narrative:

1. Last week we talked about roots taking up water (Twisty Roots Activity). Now let's see how water is carried through stems to other parts of the plant. The stem of a plant's main purpose is to carry water to the other parts of the plant. When a plant absorbs water through the roots, it is called 'osmosis'. When the water goes up the stem, it is called "capillary action." Celery is a stem that we eat so let's use celery for this activity.
2. Pour water into the glass or jar (half-full) and place it by sunlight. Put several drops (3 to 4) of food coloring in the jars using one color per jar. Let's fill these jars half-way with water and color them with the food coloring – red, blue, and green.
3. For the stem to start drinking the water, we will cut the bottom of the celery and put it into the water. Cut an inch off from the bottom off the celery stalk and place in the water. Now, we will come back in a little while to see what happens to the celery. If we see color in the stalk of the celery, we know that the water is moving up through the stem (stalk = new vocabulary)
4. Wait a few hours. Have the children check to see what has happened to the celery. Is the celery changing colors? What do you think will happen if we leave the celery in the water longer?
5. We will leave the celery in the water overnight. In the morning, we can check it again. Leave the stalks in the water overnight. In the morning, the stems should be brightly colored.
6. This shows us how stems of plants move water through the stem to the other parts of the plant. It how the plant is fed. (watered and nourished)
7. Leave the stalks in the water for several days to see more color movement. Have students predict how the inside of the celery would look if you cut the middle of the stem. Cut the celery in the middle and show students the cross section.

Teacher's Note – This experiment may be performed with white carnations. For this activity, the stem will carry water to the flower. Using the same instructions as the celery, the carnation should start changing colors in a few hours. Leave the flower in water overnight to observe more color change.

Explore different roots with their senses and classify them.



LESSON B: Stem Investigation

Objectives: Students will use their sense of sight, hearing and touch to explore various parts of the plant.
Time: 10 minutes
Materials/Prep:
Gather various stems from the playground, including edible stems such as celery, rhubarb, and asparagus along with stems that are not edible such as weeds and flowers.

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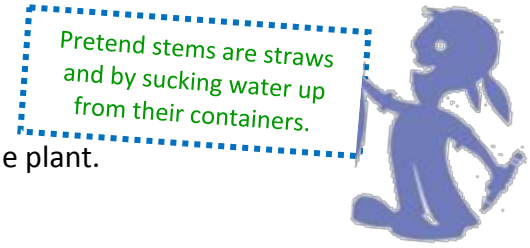
Lesson Narrative:

1. Give each student several pieces of various stems.
2. Break stems into pieces. What does the stem sound like when it breaks?
3. Do all of the stems sound the same when you break them?
4. Feel each stem and describe the texture.
5. Look at your stems. What colors do you see? Are they all the same shape and size?
6. What are some other stems? Is a tree trunk a stem? Why didn't I bring a tree trunk in the room for us to break and feel?
7. What do all stems have in common?

Note: Save the edible stems for the students to taste during the next lesson in the unit.

ACTIVITY: Sipping Stems

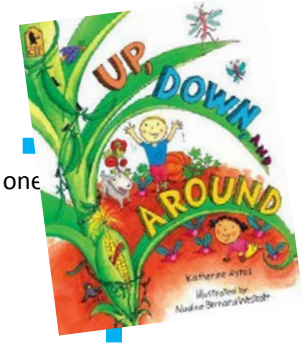


Objective: Students learn that stems transport water up to the plant.
Materials: A small water bottle/straw per student

Lesson Narrative:

1. Show students a straw. See this straw. It can be used like a stem on a plant. The stem carries water up from the roots to the plant so that it will grow.
2. Each of you will have your own container with a straw. We are going to pretend the straw is a stem this week. When you need a drink of water, you will drink from your stem. Point to the straw. Then, direct them to the containers with their names.
3. Find your container with a "stem". It will have your name and picture on it. Hold your container with your name and picture. Let's practice now. Take a sip. You are drinking water just like a stem drinks water. Any time you get thirsty this week, you will drink from your stem.
4. What is the straw going to be this week? (Allow students to answer. Guide them back to recall that the straws will be like stems and they will use the straws to move water up just like real stems.

literature connection:



Read the book, picture walk or discuss daily during the unit on stems. Choose one two questions each time you read aloud or discuss the book.

1. Point out rhyming words in book
2. Review seeds and roots while reading this book.
3. Describe the stem of a corn plant.
4. Do carrots have a stem?
5. What holds the peppers, corn, broccoli & okra up?
6. Describe the stem of a pumpkin.
7. How are cucumber, pumpkin, green bean and tomato stems similar?
8. What is the job of a stem?
9. What are some stems that were in the book? What are some stems that were not in the book?
10. Stems connect what 2 parts of a plant? (roots and leaves)

today's garden journal prompt:

Draw a picture of a plant with a stem.

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