



Tops and Bottoms

PRE-VISIT

LISTEN TO THE STORY

Listen to the story *Tops and Bottoms* by Janet Stevens (link below). The story is about Mr. Hare and his family, and Hare's friend, Bear. As Hare and his family plant and harvest in Bear's yard, they "trick" lazy ole Bear into learning about the tops, bottoms (and middles) of the different vegetables they grow.

<https://www.youtube.com/watch?v=QOapMIP1odA&list=PLi3C30j3Op822MpggQexlkB8DQ3IntTnQ&index=9>

TALK ABOUT IT

Discuss with students the parts of a plant and the function of each.

seed
root
stem
leaf
flower
fruit

ACT IT OUT

Let your students know that you are planting a pretend garden in the classroom and that they are the seeds! You can use the following scenario or a version of your own!

- Turn off half of the overhead lights in your classroom and explain to students that they are the seeds being covered by soil (the partial darkness in the room).
- Ask students to sit down on the floor "criss cross, applesauce" and begin a conversation with them by asking:
 - What is a seed?
 - What do seeds need to grow?
 - How are seeds planted?
- Continue the garden planting story by asking the "seeds" to make sure they are nestled nice and comfortably inside the soil by covering their heads with their hands.
- Ask students to imagine that a gentle spring rain has begun to fall and that as the seed begins to germinate, they can remove their hands from their heads, rising into a squatting position with their arms tucked to their sides.
- Have them pretend that their feet are the roots holding the plant in place and absorbing water and nutrients (food). Explain that roots are the first to emerge from the seeds.
- Next, have the students to fully stand, clenching their fists and straightening their arms showing that their bodies are the plant stems and their arms are the branches. While students are standing, talk with them about stems:
 - Stems hold the leaves, flowers and fruits up off the ground.
 - Stems have tubes inside that carry water, nutrients and sugar (plant food) to different parts of the plant.

continued...

- Guide the conversation to discuss how the small plant starts to need sunlight in order to continue to grow.
- Turn on the remaining overhead lights to simulate the sunlight that is needed to keep the plant growing and to produce leaves and flowers.
 - Ask students to spread their fingers to represent the leaves and flowers of the plant and talk about the role that both play:
 - Leaves grow from the stem and are where the plant makes its food using sunlight
 - Leaves are where plants breathe in carbon dioxide and release their oxygen.
 - Flowers attract pollinators to the plant.
 - Flowers help pollinate and create new seeds
- Ask students to cup their hands to represent the fruit of the plant
 - A fruit is any seed package, whether tasty or not,
 - For instance, peanut shells and coconut husks are both fruit.
 - Fruits are there to protect the seeds and help them travel. Some fruits even burst open to spread the seeds.
- Students can then pretend to hold invisible seeds and help move them away from the plant by "tossing" them
 - Once the seeds leave their parent plant, the process will repeat itself.



MISSOURI BOTANICAL GARDEN

Tops and Bottoms

POST-VISIT

POT -A- PLANT



Explain to students that they will be planting basil/radish seeds that will grow inside their own indoor "greenhouse"! This greenhouse will allow the plant to grow regardless of the weather conditions happening outside. When outdoors, seeds tend to germinate during the spring, but if the students keep their seeds inside the bag (greenhouse), they will bloom sooner. The warmth inside schools/homes helps to provide the conditions that allow plants to survive year-round. Materials each class will receive: pots, twist ties, soil, basil/radish seeds and biodegradable bags for every student. Follow the directions on the label of the biodegradable bag for planting and care of seedlings.

Re-Grow Garden



In addition to seeds from fruit, several stem scraps from grocery produce can be replanted as cuttings that will take root and regrow into a full plant. Examples include: green onions/scallions, celery, lettuce, pineapple and potatoes. To regrow any of these vegetables (fruit in the case of pineapple) place discarded parts in either a shallow dish of water or in moist soil to encourage root regrowth. Check out our School Programs YouTube video: "Re-Grow Garden" with MOBOT Early Childhood Instructor, Carmen Buchanan and have fun growing your own little garden in a sunny spot in the classroom or in your kitchen window at home!

[https://www.youtube.com/watch?](https://www.youtube.com/watch?v=ON7nqoW9OLE&list=PLTCW1CGxapBeFHRs2p0sq48uJcPZI1FGa&index=7&t=1s)

[v=ON7nqoW9OLE&list=PLTCW1CGxapBeFHRs2p0sq48uJcPZI1FGa&index=7&t=1s](https://www.youtube.com/watch?v=ON7nqoW9OLE&list=PLTCW1CGxapBeFHRs2p0sq48uJcPZI1FGa&index=7&t=1s)



Plant Party

If available, gather plastic fruits and vegetables from the dramatic play center or print and cut out the attached pages of edible plants for the activity.

Engage students in a discussion about the various foods:

- Provide students with time to explore the different fruits and vegetables
- Discuss which ones they have eaten before and/or which ones they would like to try
- Have students sort the foods according to the part of the plant they eat.

Examples of foods we eat raw or cooked that come from different parts of the plant:

Seeds: Beans, Rice, popcorn, pine nuts

Roots: Carrot, turnip, radish, parsnip

Stems: Asparagus, kohlrabi, cinnamon, maple syrup (sap)

Leaves: Lettuce, spinach, mint, celery, rhubarb

Flowers: Broccoli, cauliflower, artichoke

Fruits: Apples, pears, peppers, tomatoes



MISSOURI BOTANICAL GARDEN





turnips

ROOT

asparagus

STEM

kohlrabi

STEM

cinnamon

STEM

**maple syrup
(sap)**

STEM

lettuce

LEAF

spinach

LEAF

mint

LEAF

celery

LEAF

rhubarb

LEAF

broccoli

FLOWER

cauliflower

FLOWER

artichoke

FLOWER

apples

FRUIT

pear

FRUIT

peppers

FRUIT