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Shapes of the Root: Simple Nomenclature

Age

- 4 - 6 years

Language

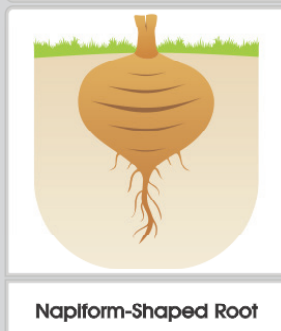
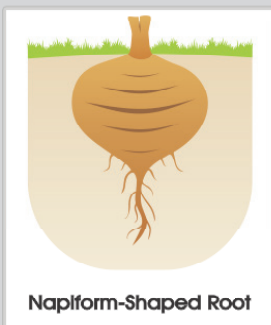
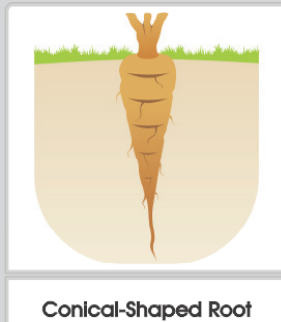
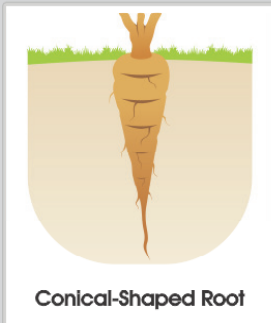
- conical root
- napiform root
- fusiform root
- tuberous root

Control of Error

- control card with both the picture and the label

Material

- root shape nomenclature cards (a picture with label, the picture, and the label)



Aim

Direct

- develop an appreciation for the shapes of roots of plants

Indirect

- learn the names of the shapes of the roots

Point of Interest

- notice the different shapes that roots have

Presentation

This is usually a small group presentation)

1. Say, "I would like to show you pictures of shapes of the roots today."
2. Place the picture with label cards in a column along the left edge of the rug. Name the root shape.
3. Distribute the root shape picture cards.
4. Ask, "Who has the picture of the root shape that looks like this?" Point to the appropriate picture with label.
5. Have the child place the picture to the right of the picture with the label.
6. Continue in this manner with the other root shape labels.
7. Distribute the label cards.
8. Ask, "Who has a label for 'conical root' that looks like this?"
9. Have the child place the label below the picture.
10. Continue in this manner with the remaining root shape labels.
11. Upon completion, allow the children to read the labels that identify root shapes.

Extensions

Practical Life

Snack

For a week, rotate the snack among different roots

- carrots
- turnips
- beets

Sensorial

Visual Sense

Color:

- Compare roots such as carrots, turnips, and radishes.
- Note the different colors these three roots have.

Gustatory Sense

Wash and cut pieces of different roots for the children to taste.

Tactile Sense

Feel several roots and notice the toughness or smoothness of the root.

Olfactory Sense

Cut several different roots and smell them.

Shape

Compare the shapes of different roots. Name the shapes in reference to the Geometric Solids.

Language Arts

Build sentences with the Moveable Alphabet about roots.

Write about roots on paper.

Mathematics

Count the number of root hairs growing out of a carrot and growing out of a turnip.

Compare the quantity. Which has more root hairs?

Art

Cut roots in half and use them for color stamping.

Mold clay to the different shapes of roots.

Science

Cut a root (carrot) in half, place it in water and watch the tops grow.

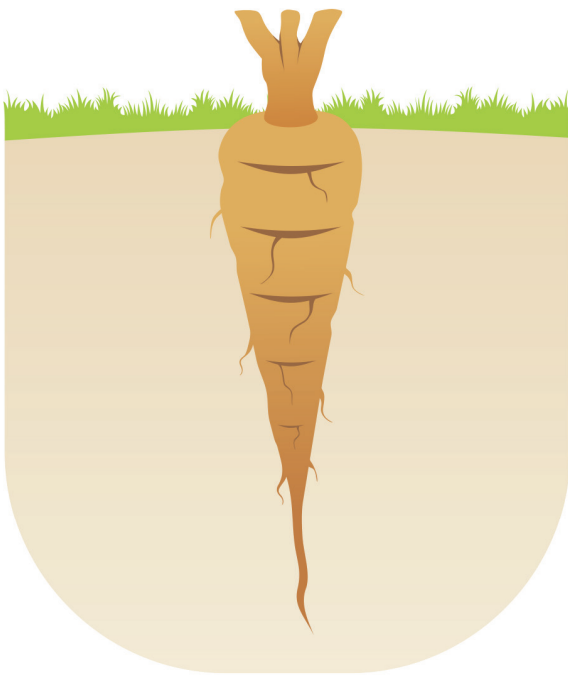
Place a potato in water and watch it root and grow long stems and leaves.

Ecology

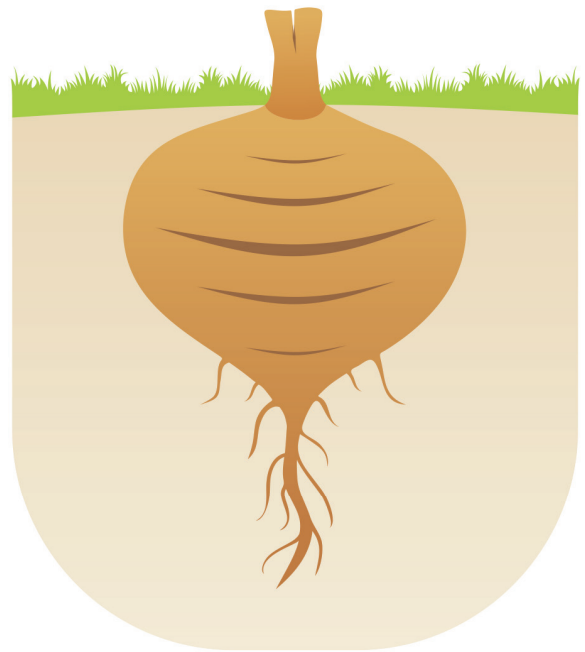
Any part of the plant that dies or is left over, should be placed in the compost pile.

See Compost.

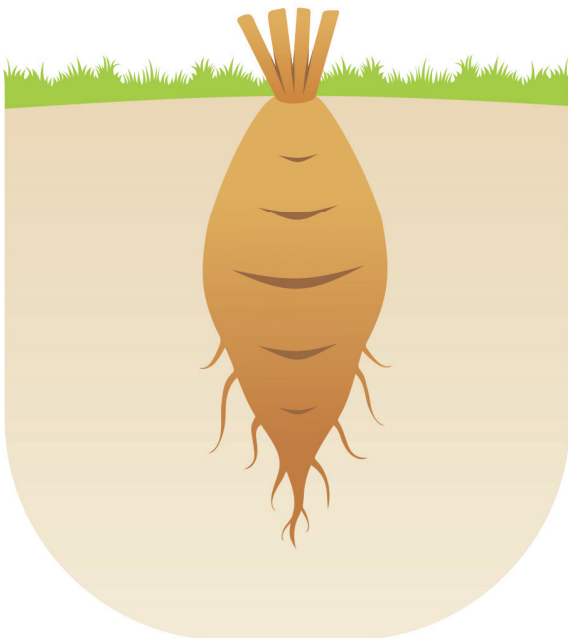
Shapes of the Root: Wall Chart



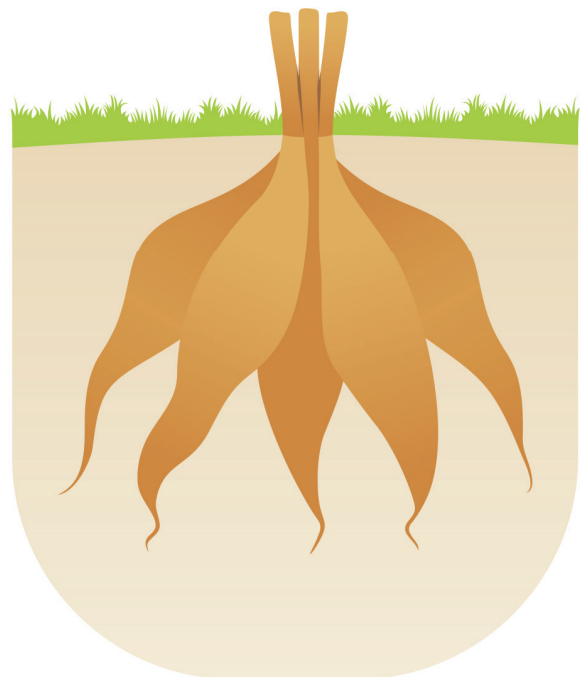
Conical-Shaped Root



Napiform-Shaped Root

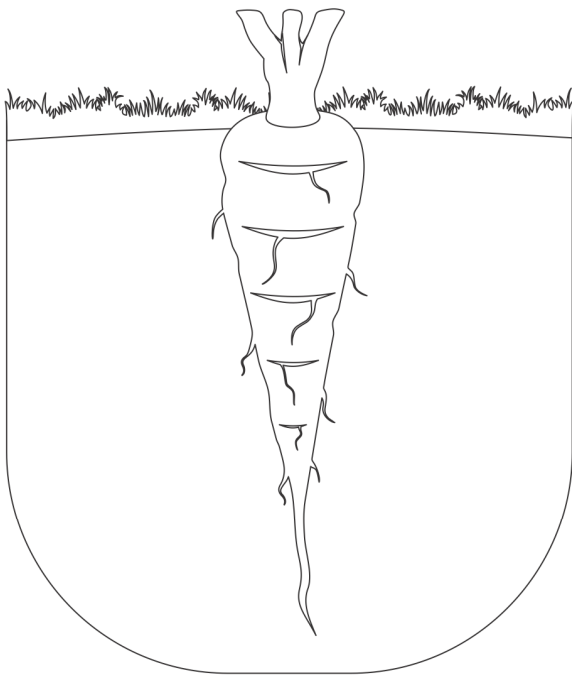


Fusiform-Shaped Root

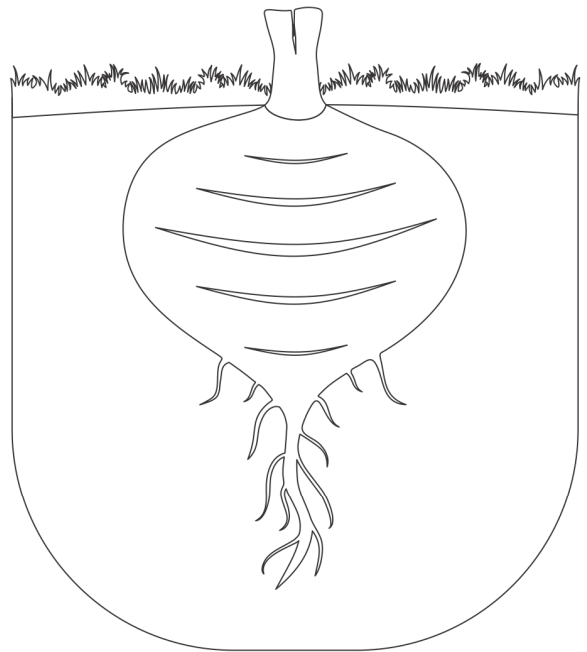


Tuberous-Shaped Root

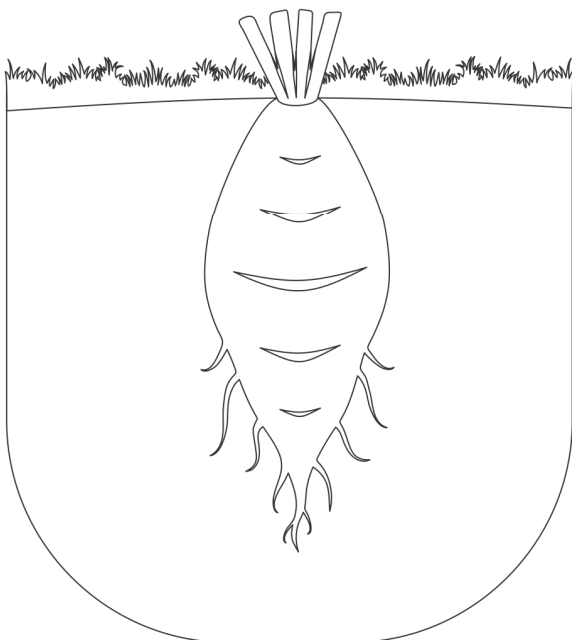
Shapes of the Root: Black Line Master



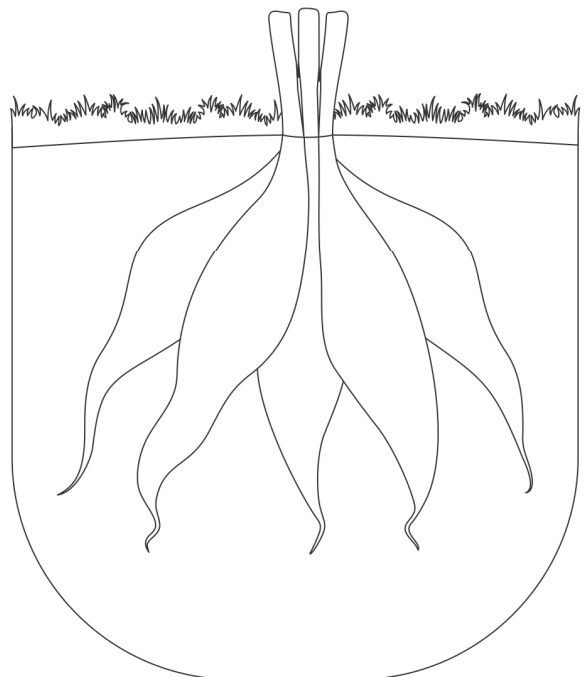
Conical-Shaped Root



Napiform-Shaped Root



Fusiform-Shaped Root



Tuberous-Shaped Root

Function

Age

- 3 - 6 years

Language

- nutrients

Control of Error

- child's own observations

Material

- a small potted plant with white flowers
- a cut flower
- a clear glass container the size of the one holding the potted plant
- small pitcher of water
- paper towel
- blue dye

Aim

Direct

- develop an appreciation for plants

Indirect

- learn the function of the roots

Point of Interest

- the roots have two basic functions: structural and nutritional

Presentation

(This is usually a group presentation)

1. Say, "I would like to talk about the function of the root today."
2. Place the plant in front of the children.
3. Ask, "Do you remember the part of the plant that is in the soil? And what is that part of the plant called? Why does a plant have roots? "
4. After the discussion, hold the cut flower upright by the stem with the end of the stem perpendicular to the presentation surface.
5. Ask, "Does this plant have its roots?"
6. Release the hold on the stem of the flower.
7. Again ask, "Now why do you think a plant has roots?" The roots hold the plant upright.
8. Ask, "Is a plant living?"
9. Say, "If a plant is living, then it needs food."
10. Ask, "If it needs food, where is its mouth? How can it take in food?"
11. Allow the children full discussion.
12. Say, "Plants have roots to absorb water and nutrition in the soil to feed the plant."
13. Remove the plant from the pot and place it on the towel. Shake loose the soil.
14. Pour water into the glass container.
15. Put blue dye in the water.
16. Say, "I am putting blue dye into the water."
17. Place the plant in the water.
18. Say, "Let's observe this over the next several days and see what happens. I'll set the plant with blue water on the observation table."
19. Each day, note the change in the color of the white flower and discuss with the children the role of the roots in absorbing the liquid in the jar into the plant.