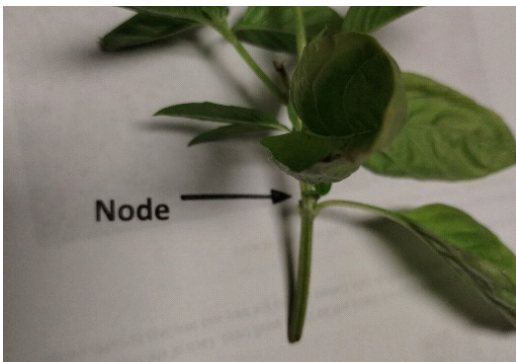


Asexual Propagation

Concept:

In nature, plants can reproduce sexually and asexually. Asexual propagation produces a plant genetically identical to the parent. Methods of asexual propagation include grafting, layering, division and cuttings. Herbaceous plants are vascular plants that do not produce woody stems. Herbaceous plants can be annual, perennial, and biennial. This activity will focus on the propagation of herbaceous plants via stem cutting. Propagation from cuttings takes advantage of a plant's regenerative process.



Rooting a stem cutting begins with removing a portion of the plant's stem between leaf joints or nodes. Nodes are points of attachment; these attachments can be leaves or other stems. An ideal stem cutting has nodes above the soil surface for future growth and at least one set of nodes below the soil surface as nodes contain hormones which encourage root formation.



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Supplies:

- A healthy and actively growing herbaceous plant
- Sharp scissors
- A container of soil that has been thoroughly watered
- Two pencils or dowels
- Clear plastic bag

Process:

When choosing to propagate, consider where you intend the plant to grow and the health of the plant itself.

- 1.** Fill the pot with soil and thoroughly water it.
- 2.** Use the pencil/dowel to make a hole in the center of the potting soil approximately one inch deep.
- 3.** Select a portion of the plant's stem that has three to four nodes.
- 4.** Using a clean pair of scissors, remove the selected portion of the plant just above the nodes that are to remain on the plant.
- 5.** Remove the leaves on the lowest set of nodes.
- 6.** Remove any floral parts.
- 7.** Place the cutting in the hole made earlier.
- 8.** Water the pot. This is to 'seal' the cutting in by moving soil to fill in the void between the stem of the cutting and the side of the hole.
- 9.** Insert the the pencils/dowel into the soil on opposite sides of the pot.
- 10.** Cover the cutting with the plastic bag using the pencils/dowels to prop the bag up.

What to Observe and Notice

While your plant is in its new container for the first week, keep the soil moist and leave the bag on to retain humidity. Keep the plant in bright but not direct light. You can remove the bag as soon as you see new growth. New growth will likely be in the form of a bud breaking (new plant leaf or stem developing). As the plant develops, reduce the frequency of waterings. At this time also introduce the plant to increasing strengths of light.

Take it Further

This is just one way to propagate one type of plant. There are other ways that you may use, including propagating stems in water and seeding. Most herbaceous plants can be reproduced via seeds. Seeding produces a genetically diverse plant.

Oklahoma Academic Standards

- 6.LS1.1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.
- B.LS1.3 Plan and conduct an investigation to provide evidence of the importance of maintaining homeostasis in living organisms.