Cooperative Extension’s Ability Garden presents

Grow Bags and Plant Cuttings

This project is a great introduction to plant propagation and can be used to extend learning opportunities to the home environment. Cuttings are taken from easy-to-grow houseplants and planted into growing media layered in ziplock bags. The transparent sides make it easy to see when roots have formed and condensation on the sides of the bag can be used as a visual cue for watering. The bags need to be inflated using a straw, providing an opportunity to connect the human need for oxygen with plants needs for carbon dioxide.

Precautions: Many common houseplants contain substances which can cause allergic reactions in some people. If ingested, some plants are extremely toxic while others can create very uncomfortable sensations such as burning and numbness of the tongue. Know your plant material and make informed decisions when it comes to your target population.

Target population: 4 years to adulthood

Activity Treatment Goals: Goals and outcomes can be tailored to different populations and individual participants, and can include:

- Promotes use of fine motor skills
- Promotes increased cognitive awareness
- Promotes sensory awareness of colors and textures
- Provides an opportunity for positive social interaction.

Completion Time: 45 - 60 minutes
Materials Needed to Complete this Project:

- Large size ziplock bags
- Sand, perlite and potting mix (multiple layers creates interest and allows you to explore textures, sizes, colors and plant growing needs; but plain potting soil should still be successful)
- Small basins, with low sides to hold growing media
- Dibbles (plastic chop sticks or dowel)
- Small shovels (large spoons can also be used)
- Plant material
- Straws
- Spray bottles
- Permanent markers
- Materials to clean up work spaces at end of program
- Wet wipes or hand wash station.

Pre-session Preparation:
In some situations it may be appropriate for participants to select and cut plant material, following visual and verbal cues. The process can take more time than you would think and requires good focus and concentration, fine motor skills and the ability to follow multi-step instructions. It is more likely that cuttings will need to be prepared in advance. Most houseplants can be grown from stem or leaf cuttings; see the attached list of 'Top Ten Easy Houseplants'. You will want to do the following before the activity begins:

1. Select vigorous, disease and pest-free mother plants to make cuttings from. Prepare enough of each type of cutting for every participant with extras in case stems are broken during planting.
2. Wet down perlite and potting mix to minimize dust particles
3. Fill spray bottles with water
4. Fill basins with growing media

Step-by-Step Instructions:
1. Discuss plants, their shapes, colors, textures and scents, if applicable.
2. Show how a small piece of a plant can be removed, planted and grown into a separate healthy specimen. These plants will be genetically identical (clones) compared to those grown by seed.
3. Shovel sand into the bottom of the grow bag, approximately 3/4inch. This helps provide good drainage in case of overwatering. It also weights the bottom of the bag.
4. Add potting soil on top of the sand layer and follow with perlite. The bag should be slightly less than half full at this stage. The perlite helps stop plant rot.
5. Firm down soil with back of shovel and then push the stem of each cutting into the mix. For softer stems, first make a hole with your dibble.
6. Too much water will rot plants and too little will inhibit root growth. Demonstrate
spraying water into the bag, watching the color of the soil change as it absorbs the water.

7. Close bag; leave the straw sticking out of an unsealed corner. Inflate with air and quickly remove straw, sealing grow bag closed. Add enough air so that the sides are firm and the final product can be easily carried.

8. If excessive moisture collects on the sides of the bag, open it up for a few hours to allow it to dry out, then reseal as before. You are aiming to create a moist, humid environment but there should be no free water sloshing about. Bags should not be put in direct sunlight.

9. In a few weeks roots will develop and the bag can be unsealed. Harden off by leaving the bag open for 2 - 3 days and then transplant struck cuttings into pots.

Enrichment Opportunities:
- Discuss basic plant parts: leaf, stem, roots, petiole, auxiliary buds, etc
- This activity provides the opportunity to introduce plant families, genus and species.
- What factors are needed to best support root initiation?
- How long will it take?
- How does taking cuttings differ from other propagation techniques?

Performance Areas:
- Education: The activity presents the opportunity to survey a group of plants (common houseplants work well but you need not restrict yourself to them). Discussion possibilities are endless, e.g. leaf shapes, textures and colors, or plant parts, or propagation requirements.
- Vocation: This activity promotes: learning new skills, speech and vocabulary, and following directions.
- Rehabilitation: The activity presents opportunities to practice fine motor skills, sensory awareness and discrimination, and promote creativity.
- Leisure/Recreation: This activity encourages personal choice, sharing, partnering with others, and can extend the growing experience into the home (taking care of cuttings/ potting up).

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