THAD Therapeutic Horticulture Activity Database

Activity: Propagation Goal: Cognitive/Intellectual Populations: All

TH Activity Plan – Science Experiment: Avocado 3 Ways

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Photos by Instructables.com, Scottgrowsanavocadotree & HGTV

ACTIVITY DESCRIPTION: Participants will propagate avocado seeds three different ways, experimenting with these techniques. This activity requires follow-up after the initial session.

THERAPEUTIC GOALS:

Cognitive/Intellectual: Hypothesize most effective method of propagating avocado using 3 techniques; practice scientific method

Physical: Use fine motor skills handling plant materials

Psychological/Emotional: Practice friendly competition; manage competitiveness & potential defeat

Sensory: Manage distress or discomfort touching dry & wet materials

Social: Compete in science experiment demonstrating good attitude & sportsmanship; work cooperatively with group members

Materials

Seeds from green skinned avocado- 1 per pair

See material lists for each method below

Labels, markers

Gloves, wipes

STEP-BY-STEP PROCESS:

1. **Pre-Session Preparation:** Gather materials for the 3 different propagation methods using avocado seeds.
2. Facilitator begins session by dividing group/class into pairs.
3. Review of scientific method, hypothesis & goals for propagating avocado seeds using 3 methods is covered. Hypotheses are formulated re germination rate.
4. Facilitator assigns a propagation method to each pair. Materials are distributed based on method.
5. See below for specifics for each propagation method as well as materials list. Each propagated seed should be labeled with participants' names, date & propagation method.
6. Once propagation has been completed, group discusses where seeds will be stored until germination. Further discussion of competition, sportsmanship, managing emotions of defeat or disappointment & benefits of intellectual inquiry may be relevant to the group.
7. Observations for the point of germination, moisture control or other factors should be done weekly by the same group. Results of germination rates, dates & other are presented in the group after the initial session.

APPLICATIONS FOR POPULATIONS: Experimenting with horticultural techniques can be both educational and therapeutic, with health goals integrated into the session. Reprising school days for adult participants or introducing science projects, scientific methods and hypotheses for school-aged participants, this therapeutic horticulture activity can provide a range of health outcomes in each of the health domains. A variety of therapeutic goals are listed above.

SAFETY CONSIDERATIONS: Some populations should not use knives to extract avocado seed based on facilitator's assessment of risk (children, incarcerated, at-risk youth). Facilitator can do this step prior to session.

NOTES OR OTHER CONSIDERATIONS: Avocado seeds can be germinated 3 different ways.

Germination in soil-less mixture: This method would be considered germination in soil however, soil-less mixture tends to work better. Method: Wash seed to remove loose skin. Fill a 4" pot with soil mix to the rim. Gently tap to settle soil. Place the fat side of the seed into the soil, leaving about 1/4 "of seed above the soil. Water the entire pot until water comes out of bottom. Place clear plastic bag/bottle bottom over the pot. Place in warm spot with indirect sun. Monitor weekly for moisture and germination point when roots appear. If it gets dried out, water the entire pot until water comes out of bottom. Do not overwater; root rot may occur. Once germination occurs remove the bag/bottle & place the plant in bright indirect sunlight, required for continue growth. Add data to group results re germination rates. Materials: 4" pot per team, 2 parts soil-less potting mix + 1 part sand, small dish trays, scoops, knives, water and clear plastic bags. Photo below far left.

Germination in water: Method: Wash seed to remove loose skin. Use toothpicks to suspend the bottom half of seed (not the pointy end) perpetually in the water so it stays moist. Add water as needed. Place in a *warm* bright indirect lit space. Keep roots submerged; shoots will appear later. Add data to group results re germination rates. Materials: glass container, water and toothpicks. Middle photo below.

Germination in damp environment: Method*:* Wash avocado seed, wrapping in a damp paper towel, placing in a plastic food bag, then storing in a dark cupboard for 6-8 weeks. The greenhouse effect should keep the seed warm to hasten germination. Check weekly for the seed to crack and root(s) to emerge. This method is not as interactive as other therapeutic horticulture activities. It may be appropriate for a virtual session. Add data to group results re germination rates Materials: paper towels, plastic food bag and water. Photo below far right.

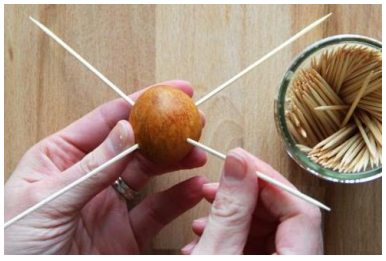
This activity requires regular monitoring of propagated seeds and observations noting when germination occurs. Ideally the group would compile the germination data and discuss methods and outcomes, this occurring after a minimum of 4 weeks, some seeds germinating much later. Further care needs to be given once seed has germinated, based on the medium the seed has been germinated in. This horticulture activity can be extended by repotting the seed, observing stages of growth (setting of leaves etc.), planting in the ground, and tasting different varieties of avocados.

REFERENCES/ RESOURCES:

California Avocado Commission. (2024). Avocado types and varieties. https://californiaavocado.com/avocado101/avocado-varieties/

National Institute of Environmental Health Sciences. (2019). Scientific method. https://kids.niehs.nih.gov/topics/how-science-works/scientific-method

Martens Forney, J. (n.d.). How to plant an avocado seed and grow a tree from a pit. HGTV. https://www.hgtv.com/outdoors/flowers-and-plants/vegetables/how-to-grow-an-avocado-tree-guac-n-roll



Edits were made for THAD purposes in 2023.

TH Activity Plan form developed by Lesley Fleming, Susan Morgan and Kathy Brechner (2012), revised in 2018.