

# SELF - WATERING POTS AND PLANTS MOVING WATER

Residents will start seeds of herbs in self-watering pots and learn how water movements (capillary action) will keep their plants from getting thirsty.

Please amend this lesson to adapt to the abilities and interest of your residents. You know your residents best!

If you don't have a garden, you can still interact with nature by collecting flowers, leaves, & other bits of nature during a garden courtyard or walk. You can also safely enjoy nature from a window!

## Wellness Objectives:

- 1: Resident will engage cognitive stimulation (CS)
- 2: Resident will engage sensory stimulation (SS)
- 3: Resident will engage motor skills (MS)

Eldergrow offers a **therapeutic connection** to nature where residents engage in meaningful ways – cognitively, socially, spiritually, emotionally, & physically.

## MATERIALS :

Budget: \$4-8



## Create 4 Self-Watering Pots:

- (4) 16 fl. oz plastic cups (Dollar store) NOTE: cups need to be wide enough to hold 4" plant pots
- (4) 4" pots (Dollar store or [Link here](#))
- Moistened organic potting soil
- 4 seed packets ([Link here](#), or Dollar store) - choose from these types, proven safe and well performing: *Italian basil, thyme, sage, calendula, viola, zinnia*
- Talking Points: "**Self-Watering Pots & Plant Water Movement**"
- Print the Self-Watering Pot labels (last page)
- *Optional:* Seed transferring tools options- Paint brush or tweezers



Picture source: [Pallensmith.com](http://Pallensmith.com)

## PREPARATION:

- If you have a garden, have residents gather around it, or at table by a window with a view of nature. Have journal ready for garden/nature observations.
- **Watch our short video** on the Nature Connect portal for tips & tricks on this activity.
- Set out materials and **Talking Points**.

## ACTIVITY DIRECTIONS – CHOOSE 1 OR ALL 3 PARTS:

### 1. GARDEN OBSERVATIONS & CONVERSATIONS:

If you have a garden, gather around it so residents can make observations, or gather around a window. These are options to connect with nature. Skip to #2 for the Lesson Plan.

- Bring safe scissors for leggy plants & garden tools, journal with pen, and half full watering can (keep it light).
- Jot down 3 things in the journal (or ask for a volunteer resident to be today's garden/nature secretary)
- Bring a ruler & have residents measure plants. Mark their heights in the journal to observe and track their growth over time!
- Do you notice anything different or new about the garden? There are no wrong answers.
- How does the soil feel - Too wet? Too dry? If too dry, ask a volunteer to water.

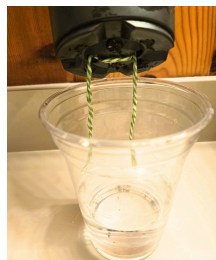
### 2. TALKING POINTS FOR PLANTS MOVING WATER:

- Take turns reading the "**Self-Watering**" Talking Points out loud. Encourage thinking about how similar plants moving water up their stems is similar to water moving up a straw, thanks to the property of water molecules being sticky.

### 3. SELF - WATERING POTS:

Watch our short video on the **Nature Connect** portal for tips & tricks on this activity.

- If desired- punch 1 hole in plastic 16 oz cup for the outer water reservoir about an inch from the top edge to hang in a window. Skip to next step if not hanging.
- Thread 6" of twine/string through two of holes in bottom of 4" pot, leaving both string ends long to hang down as water wicks into the 16oz reservoir cup.
- Pour pre-moistened soil into large bowl (moist so it doesn't make airborne dirt particles).
- Take turns stirring with hand trowel. Fill the 4" pots with strings 3/4 full with potting soil.
- Add seeds to top of soil in each pot. Sprinkle with very thin layer of soil & give a light spray with mister.
- Fill the 16oz reservoir cup with 1/4-1/2 cup of water. Insert 4" plant pot into cup reservoir so string ends dunk into water. Pot should not touch water in cup reservoir.
- **Note:** Seedlings' soil should be allowed to dry out **slightly** periodically, so you may not need to refill water often in pot's reservoir until plants grow big. Fill in and tape "Care Instructions" to side of each cup.



Placing the self-watering pots:

- If you have an indoor lighted garden- place the self-watering pots on the garden shelf at the side or in a cleared space in the garden so that they get as much light as possible (see the "**Capillary Action**" Talking Points for more optional educational info).
- If you don't have a garden, place or hang (from hole punched in plastic cup) self-watering pots in a very bright window. They need maximum light to grow lush and healthy. Consider keeping on tray or saucer for spills.

## CLOSING & AMENDMENTS FOR DIFFERENT LEVELS

Have your **garden / nature journal ready** to write down resident **comments, garden, or activity highlights**.

- **For those with low vision:** Draw dark seed-placement circles onto small paper towel discs for better visibility. Many residents have difficulty handling the smallest of seeds, so you can use this "**seed disc/ paper towel transfer**" method by placing seeds (perhaps with a paint brush or with tweezers) within cut-out circles of a paper towel & top with another circle to make a group of seeds to easily place on the soil.
- **Make some predictions with the group on when the seedlings will emerge** from the soil and how well the self-watering pots will do. Note these in the journal. Mist the top of the soil every few days to keep moist when seedlings are the most delicate right before sprouting. Come back daily after a week to see if they have sprouted and then to measure how much they grow over time!



- **For folks wanting more visual interest:**

### Try the Walking Rainbow Experiment

- Fold 3-7 (depending on how big the experiment is/how many colors you want) paper towels in half width wise, fold it again three more times for a thick "wick".
  - Trim off some of the length so that there isn't too much paper towel that will be in the air between cups.
  - Color the bottom third of each paper towel with one bright color each, using water based markers.
  - While residents are coloring the paper towels, place the cups on a tray in a row or circle.
  - Now put one end of the paper towel into one cup and the other side of the paper towel in the next glass, as a  $\Lambda$ . Repeat with the remaining cups.
  - You will see the initial capillary action of this immediately, but the full blown effect will take several hours. Consider labeling the cups starting out empty to appreciate the end result.
- Using various herbs, do a "**Scratch & Sniff**" **sensory demo**. (See portal video library for a demo.) This sensory stimulation is also good cognitive stimulation, encouraging engagement, and can use a garden as a redirect tool for unwanted behavior. Pick off a leaf from one of the herbs and ask questions such as:
    - **Touch:** Feel the leaf. Is it smooth or bumpy? Thick or thin?
    - **Smell:** Smell the leaf after rubbing it. Do you know what that scent is? What does it remind you of?
    - **Sight:** Do you know what herb this is? Notice the leaf shape. Is it a wide or narrow leaf? Does it have a smooth or jagged edge?
    - **Taste:** Have you tasted this herb before? Do you have any favorite dishes that use this herb? (If you would like to taste the leaf, please wash first.)
    - **Sound:** This conversation activates the auditory cortex (hearing) part of the brain.
  - **For something a little more challenging for IL participants-** Come up with new versions of the Rainbow Capillary Action experiment, maybe with cups at different height levels, or an edible version using food coloring and celery stalks stuck in different colored water and make a rainbow celery snack later.

Picture source: [Sciencebuddies.org](https://www.sciencebuddies.org)

# SELF WATERING POTS: CARE INSTRUCTIONS

Start Date: \_\_\_\_\_ Plant: \_\_\_\_\_

Gardener: \_\_\_\_\_

- Write down daily observations in your Eldergrow Journal.
- Mist soil lightly daily until seedlings emerge. (If your pots have a plastic bag "humidity dome" on top, daily misting is not necessary.)
- Things to observe:
  - How many seedlings do you see? How many leaves on each?
  - What is the height of the seedlings? What colors are the leaves?

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If you do the Walking Rainbow Experiment from the Lesson Amendments:

## THE "WALKING RAINBOW" SCIENCE EXPERIMENT

Start Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Experiment Description:** The colored water travels up the paper towel by a process called capillary action. Capillary action is the ability of a liquid to flow upward, against gravity, in narrow spaces. This is the same thing that helps water climb from a plant's roots to the leaves in the tree tops. By the end of this experiment, you should see equal amounts of water in each cup. (Every other cup was empty to begin with!)