



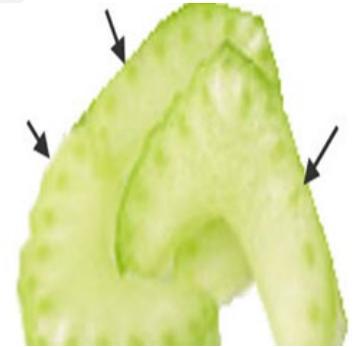
# Why Do Plants Need Water? TK-1 lesson

*Vetted by Riverside County Office of Education-Stem*

# For Teachers: Why Is This Important?

**Most plants are composed of about 90% water.**

- Water and nutrients in the soil enter plants through the roots traveling through **xylem** which are in the plant's vascular system.
- **Xylem** can be thought of as “tubes” that deliver water to all parts of the plant.
- **Xylem's** tubes are highly effective at stacking up water molecules into long chains and pulling them upward and outward to the leaves of the plant.





# Learning Goals

## Students will learn:

- Plants need water in order to survive.
- The structure and function of plants.

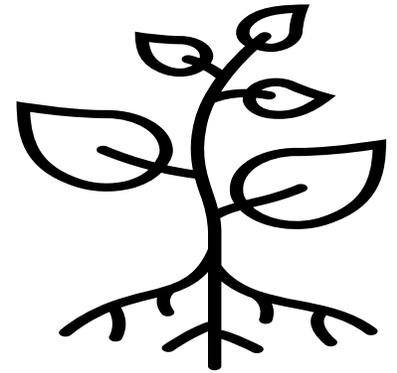
# Anchor Phenomena: [Wilting Plant](#)



Studio Time Lapse Test - Plant coming back to life

# Why Do Plants Need Water?

Draw a picture showing why a plant needs water.



# Why do plants need water?



# All living things need water



# Even your best friend!



# Plants are alive and need water



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# Does this plant need water?



*How do you know?*

# Does this plant need water?



*How do you know?*

# Do plants *drink* water?



Plants absorb water through their roots

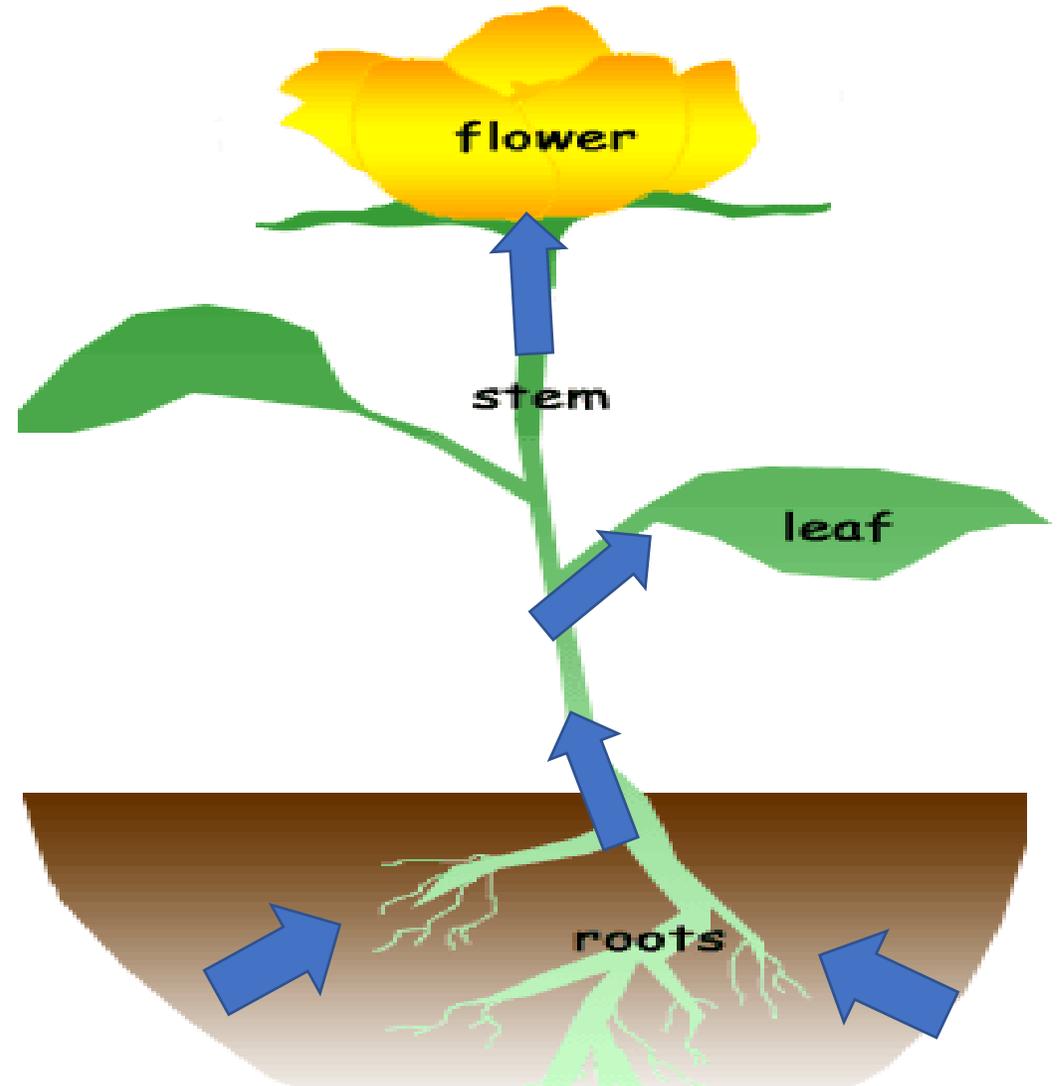


# All parts of the plant need water!

The roots absorb water that is in the soil.

The stem moves water to the leaves and flowers.

Without water, the stem, flowers and leaves wilt and the plant could die!



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Even without roots the stem can move water to the leaves and flowers of *cut* plants!



***No roots!***

## Video: The Parts of a Plant

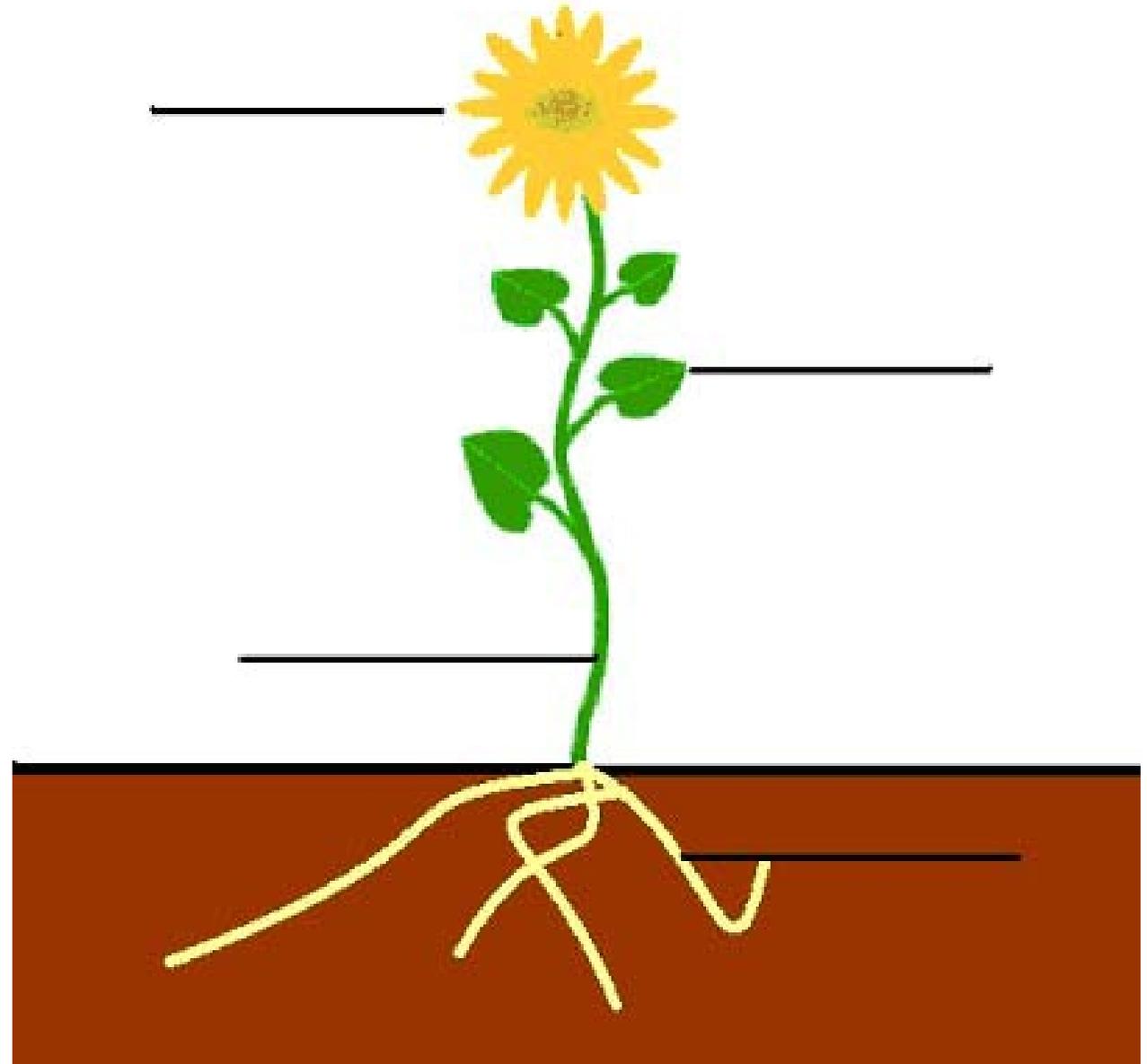


**The Parts of a Plant (song for kids about flower/stem/leaves/roots)**

# Check for Understanding

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- Why do plants need water?
- Name the parts of a plant in this picture.
- How do plants get water?
- Where do you think you should pour the water for a plant? Explain why.



# *Phenomena in the Garden:*

## How Plants Get Water

**Be a Scientist! To find out how plants absorb water, watch the [video](#) and try this experiment at school or at home. You will need:**

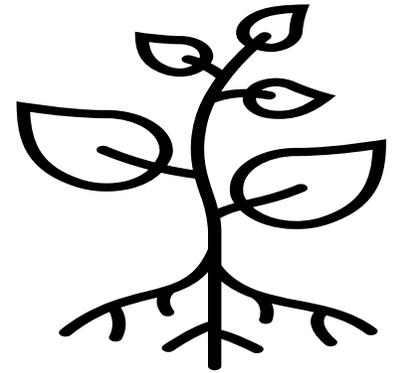
- 1 celery stalk with leaves or a carnation flower
- 1 clear glass
- Red or blue food coloring
- An adult with a knife to cut the celery or flower stem
- Paper and crayons to draw and write what you see happening



The Color-Changing Celery Experiment!

# Why Do Plants Need Water?

Draw a picture showing why a plant needs water.

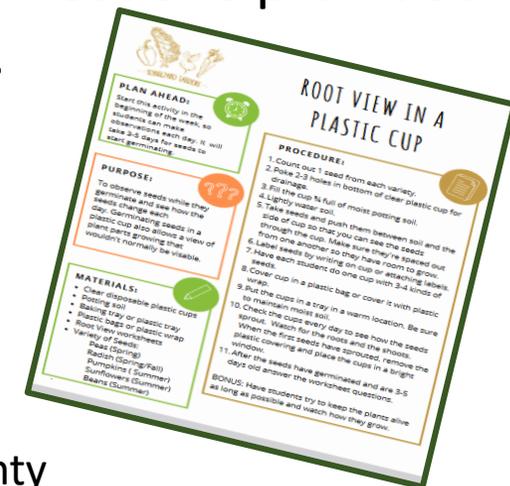


# *Extend Activity:* Grow Seedlings in Clear Plastic Cups



**Start a simple garden project inside the classroom.**

- Using clear cups will allow students to observe the development of all parts of the plant including the roots in the soil.
- Follow the planting directions provided by [Schoolyard Gardens](#).



# Vocabulary

- Absorb
- Flower
- Root
- Stem

# Absorb

To soak up or take in water.

Roots absorb water.



# Flower

A flower is a bloom or blossom found in flowering plants.

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Flowers produce seeds.



# Leaf

A flat growth attached along the sides of a plant stem.



# Root

The part of the plant that attaches it to the ground and moves water to the rest of the plant.



# Stem

The body or stalk of a plant.

The stem moves water to the rest of the plant.



# California Preschool Learning Foundations Next Generation Science Standards

## **Preschool Life Science Strand**

- At 48 months: 2.2 Recognize that animals and plants require care and begin to associate feeding and watering with the growth of humans, animals, and plants.
- At around 60 months: 2.2 Develop a greater understanding of the basic needs of humans, animals, and plants (e.g., food, water, sunshine, shelter).

## **Kindergarten Earth and Human Activity**

- K-ESS3.A: Natural Resources: Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.

# Next Generation Science Standards

- **1-LS1.A: Structure and Function:** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

# Next Generation Science Standards

## **Science and Engineering Practices:**

- Use a model to represent relationships in the natural world. (K-ESS3-1)
- Obtaining, evaluating, and communicating information in K– 2 builds on prior experiences and uses observations and texts to communicate new information. ▪ Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)

## **Cross-Cutting Concepts:**

- Systems and System Models ▪ Systems in the natural and designed world have parts that work together. (K-ESS3-1)
- Structure and Function ▪ The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)
- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS3-1)

# Resources

- California Master Gardener Handbook, Second Edition, Dennis R. Pittenger, Editor, 2015
- [Hands on Gardening Activities](#); UCCE Master Gardeners of Kings County
- [How do Flowers Drink Water?](#); Steamit.com
- [Root View in a Plastic Cup](#); KCCG.Org
- Videos: StormChasingVideo; HarryKindergartenMusic; Sci Show Kids
- Images: Creative Commons, Stock; UCCE Master Gardener Jonie Kipling

# Master Gardeners

The University of California Cooperative Extension (UCCE) Master Gardener Program (MGP) is an educational program designed to teach and effectively extend information to address home gardening and non-commercial horticulture needs in California.

UCCE is the outreach arm of UC's division of Agriculture and Natural Resources (ANR). Master Gardener volunteers (MG volunteers) promote the application of basic environmentally appropriate horticultural practices through UCCE-organized educational programs that transfer research-based knowledge and information.



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UCCE Master Gardener Program

# Gardening Questions?

## Email the UCCE Master Gardeners of Riverside County

- Email Helpline: [anrmgriverside@ucanr.edu](mailto:anrmgriverside@ucanr.edu)
- School Gardens: [mgschoolgardens@gmail.com](mailto:mgschoolgardens@gmail.com)

## Website Resources

- [Riverside Master Gardeners Website](#)



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