



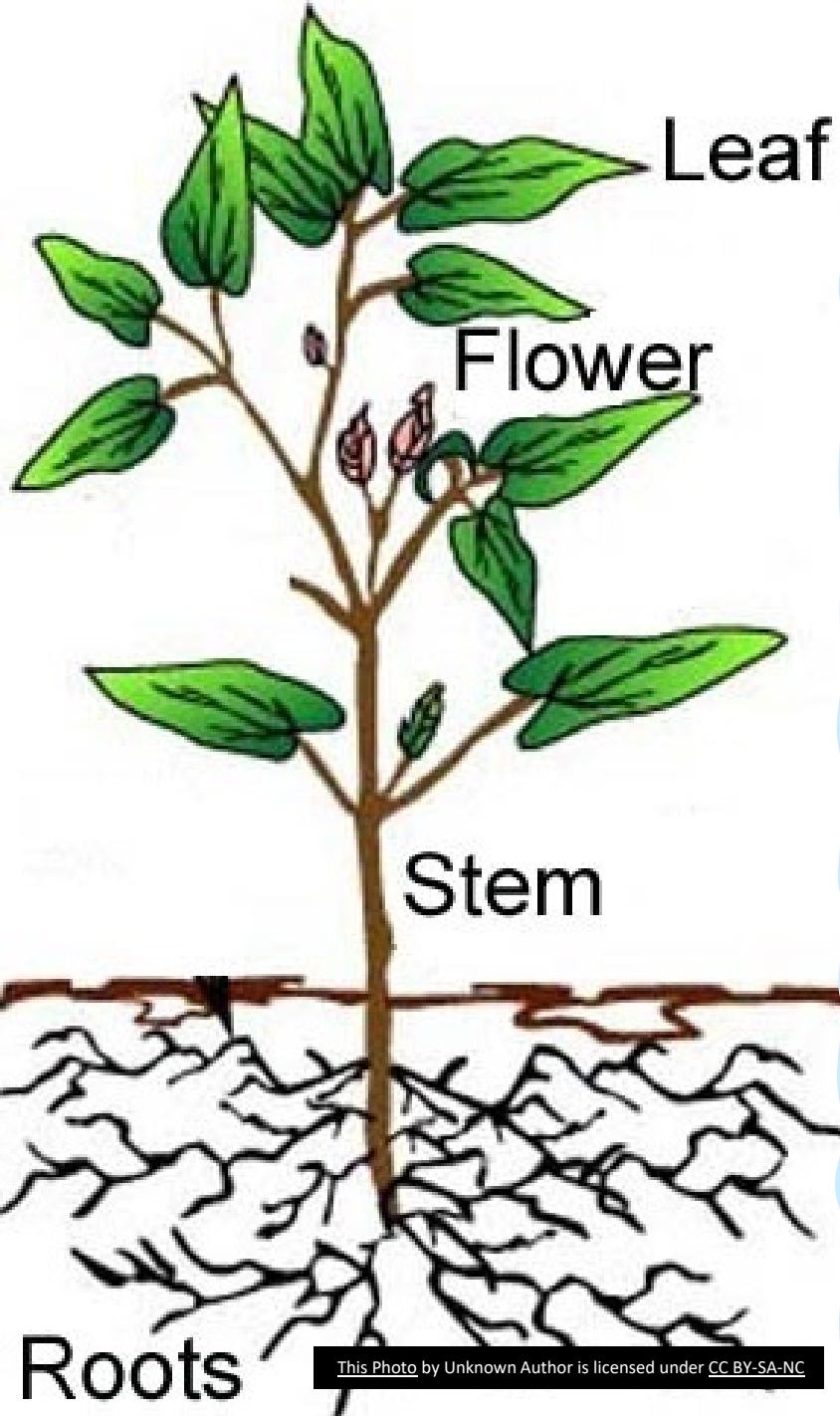
Drought Dilemma: Plants Need Water to Grow

4th and 5th Grade

What Do Plants Need to Grow?

- Soil
- Air/Oxygen
- Water
- Light/Sun
- Food/Nutrition
- Place/Garden





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Parts of a Plant

What are the parts of a plant?

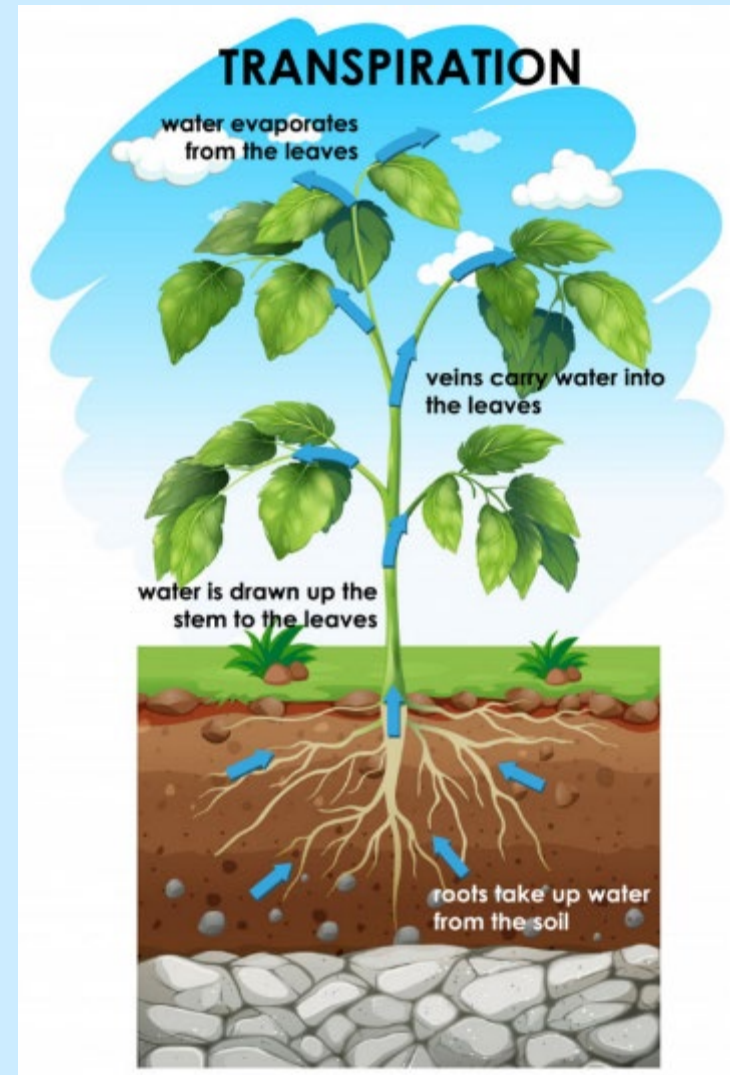
- Roots
- Stem
- Flower
- Leaf

Where is the Soil?

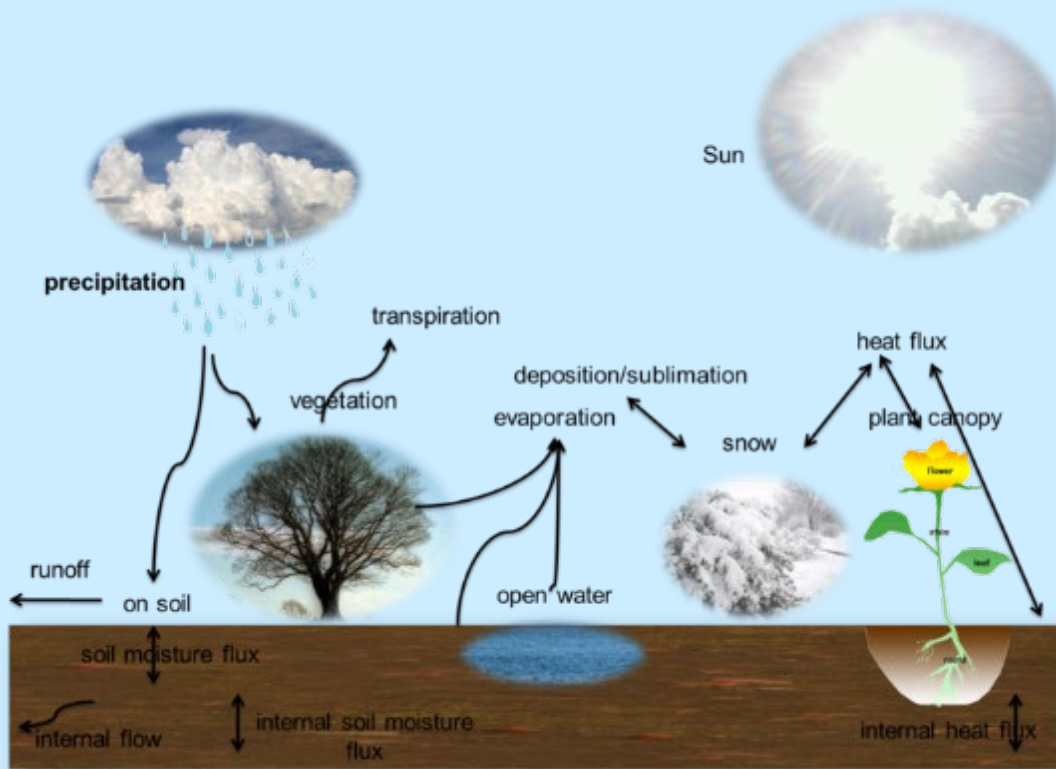
- Plants take water from the soil
 - Water enters the plant through the tips of the roots.
 - Water must be available in the soil to the root tips for plants to use it.

Why do plants need water?

- Plants are about 90% water
- Water makes plants sturdy and strong.
- Plants take in water from the soil.
 - Uptake of water occurs in the roots and root tips.
 - Water moves up the stem and leaves and is lost to evaporation from the plant.
 - Transpiration
 - Water carries sugar and other nutrients to parts of the plant.
 - Plants need light and water to make sugars.



Water Cycle



(Chen et. al., 1996, 1997; Chen and Dudhia, 2001; Ek et. al., 2003; Koren et. al., 1999)

- Rainwater, or precipitation, provides water on earth.
- Water is used by plants, it seeps into soil, it runs into bodies of water, and sometimes it freezes.
- Heat from the sun releases water from the plant; water evaporate back to the clouds.
- Plants also release water through transpiration to supply water to clouds.

Water Cycle Activity

- Water is recycled
 - Every drop of water has already been part of the water cycle.
- Click on the link below:
 - [Water Cycle Activity](#)
 - Hover over a topic to learn more about the subject: precipitation, lakes, rivers, runoff and other subjects.



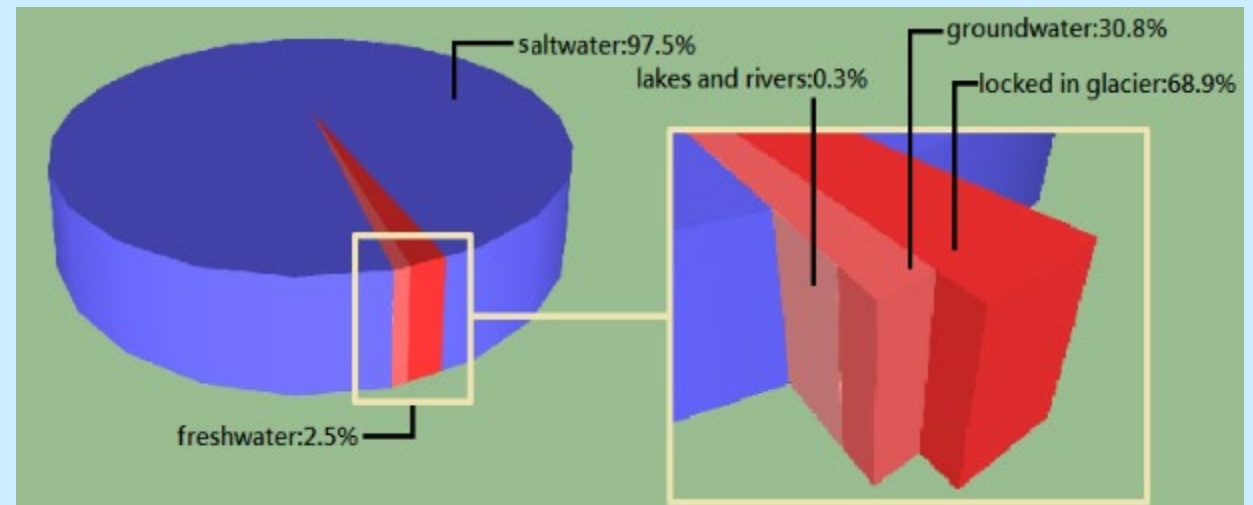
Water Sources for Plants:

Plants Need Fresh Water

About 2.5% of water is fresh

- Plants use fresh water from:
 - Rain
 - Lakes and rivers
 - Snow that melts
 - Water in the ground
- Plants cannot use:
 - Salt water, from oceans and lakes
 - Frozen water
 - Wastewater if it is not treated
 - Polluted water

Fresh water sources

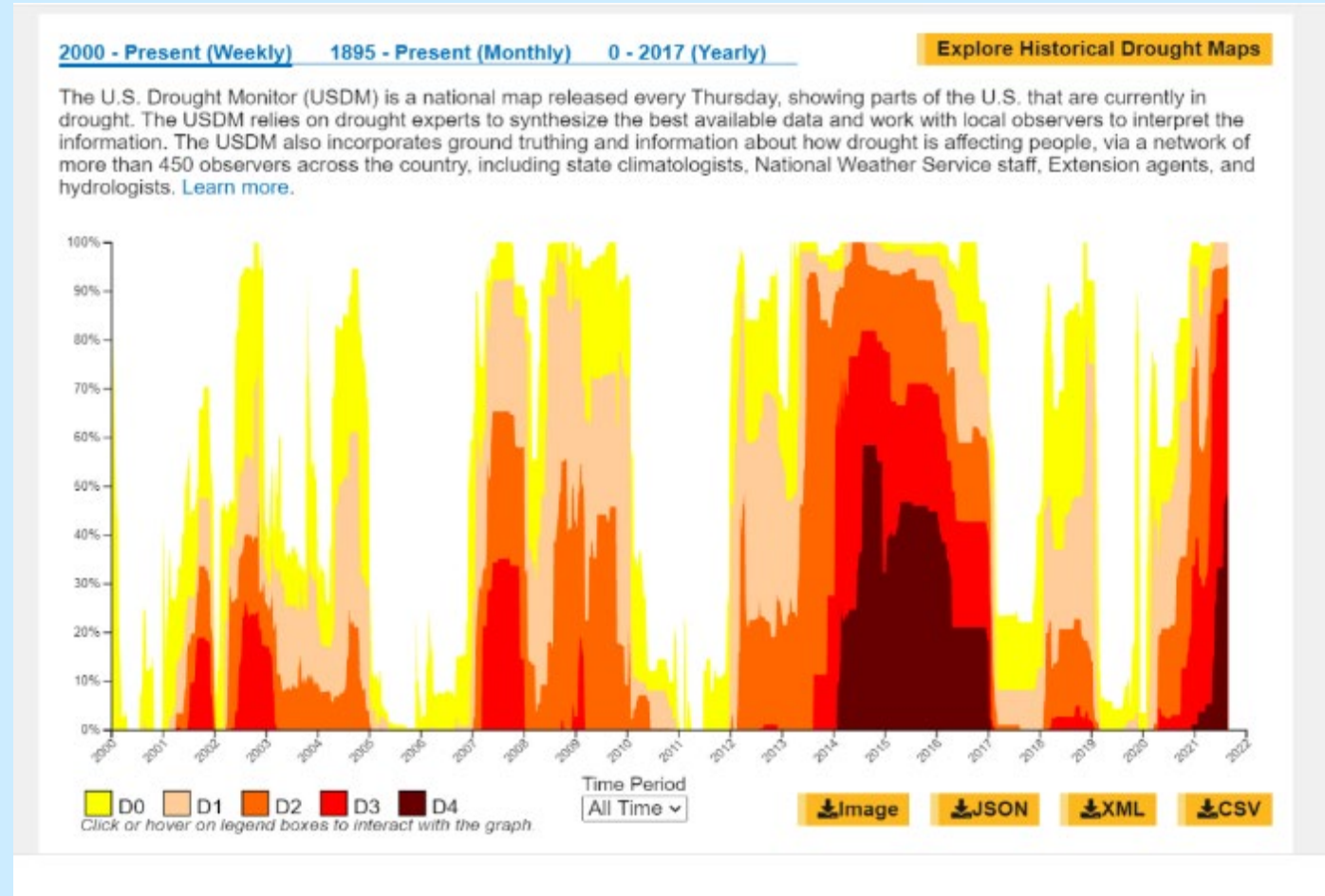


What is a drought?

A drought is a shortage of water from rain and snow

- During a drought we have less water available for people, animals and plants.
- The chart shows changes in California drought conditions from 2000 to 2021.
- Darker areas on chart are times with most extreme drought conditions.

California areas affected by drought are increasing



Video:

[Introduction to Drought](#)

- Drought Map: August 2021 (U.S. Drought Monitor)
- Dark Red Areas: Extreme Drought

