

Name: _____ Date: _____

Drinking Up

How does drought affect a plant?

Observe: Scientists think droughts could harm giant trees in California.

Ask a Research Question: How does the availability of water affect a plant?

Form a Prediction Based on This Question: Which part of a celery “tree” will receive water when little water is available?

Materials: measuring cup • water • food coloring • 2 large jars of the same size • masking tape • marker • 2 celery stalks with leaves • scissors • paper towel • paper and pencil

Procedure:

1. Use the tape and marker to label the two jars A and B.
2. Fill the measuring cup to the half-cup line with water. Add 10 drops of blue food coloring, and pour into jar A. Repeat process with the red food coloring and pour that into jar B.
3. Trim the bottoms of the celery stalks so that they're the same length. Place one stalk in each jar, leaves up.
4. After one hour, remove the celery stalk from jar A and place it on a paper towel. Inspect the outside of the celery. Has it changed color? Record your observations.
5. Cut the stalk near the top. The veins you see inside are what carry water through the plant. Have they changed color?
6. Use your fingernail to peel back part of the celery's skin. Record what you see inside. Then pour the water out of jar A into a sink, but save the celery.
7. After 24 hours, remove the celery from jar B. Repeat steps 4 through 6. Then compare the two celery stalks.

Results: Which parts of the celery stalk absorbed the colored water?

Conclusions/Questions to Consider:

1. How was water distributed through each celery stalk?
2. Which of the two celery stalks do you think is more like a tree during a drought? Why?
3. Based on your observations, what might happen to a tree if it doesn't get enough water?