

Water in Plants

Focus

Living things are all part of the water cycle and, as part of this cycle, water is taken in (absorbed) and given out (expired). Humans are made up of approximately 75% water. Animals too are made up of a large percentage of water. A kangaroo rat is made up of 65% water, a frog approximately 88% and a jellyfish about 98%. Fruit and vegetables are also made up of large percentages of water. Do this activity to find out just how much water is in some fruit and vegetables.

a) Juicy Fruit

Materials

- Whole fruits and vegetables (smaller varieties are best)
- Tray for drains

Procedure

- Estimate the percentage of water contained in selected fruit and vegetables.
- Weigh the fruit and vegetables and record.
- Place fruit and vegetables on tray and leave in sun to dry for one to two weeks.
- Weigh fruit and vegetables when dry.
- Estimate approximate percentage of water for each of the fruits and vegetables.



Observe results and record

- The type of fruit or vegetable
- Original weight
- Weight after drying
- Approximate percentage of water

Type of fruit or vegetable	Original weight	Weight after drying	Approx. % of water
1. Watermelon			
2. Apple			
3. Carrot			
4. Tomato			
5. Orange			

Understandings

Water is life, and in life! We are all made up of large amounts of water. It is in all living things.

Source:

<http://www.ourwater.vic.gov.au/ourwater/education/Teachers/files/Planitwater-Discover.pdf>

Approximate % water = Watermelon 93%, Apple 85%, Carrot 88%, Tomato 95%, Orange 86%.

b) Water from plants

Focus

Plants are part of the water cycle. They source water from the soil through their roots, carry it through tiny 'pipes' to their leaves and then the water evaporates from pores on the under surface of the plant's leaves. For students to understand this here is a very easy exercise to get them thinking.

Materials

- Dry freezer bag (transparent)
- Twist tie or string
- Healthy plant located in open sunny space
- Measuring vessel (cup, jug or measuring cylinder)

Procedure

- Choose a plant from within the school garden and place a dry freezer bag over a branch and secure it with a twist tie (you could also place a freezer bag over a pot plant).
- Leave all day
- Make one or two observations through the day. Record these.
- Leave overnight.
- Next day observe the bag and carefully remove from the plant.
- Record your observations, including how much liquid was collected.
- Draw a series of sketches to show how you carried out this experiment. Include an explanation of what you did.

Results

- Q What happened during the day?
- Q What did you find in the freezer bag when you returned the next day?

Discussion

- Q Where might this water have come from?
- Q How did the water get out of the plant?
- Q What happens to the water when we are not catching it in a plastic bag? (Hint: Evaporation)
- Q How did water get into the plant?
- Q Does it matter if the soil is dry?
- Q Will the water in the plant keep moving out of the leaves? (Hint: Yes)
- Q What happens if the water keeps coming out of the leaves but the roots can't get any more water?