

Science - Plants

Lesson 2

Key vocabulary

Xylem

Flower

Leaves

Stem

Trunk

Roots

Nutrition (food for health and growth)

Function (job)

Photosynthesis (how plants make food)

Reproduction (how plants make new plants)

How is water transported through a plant?



How is water transported through a plant?

The process of water transportation is the way water moves through a plant.

1. The roots absorb water from the soil.
2. The stem transports water to the leaves.
3. Water evaporates from the leaves.

This evaporation causes more water to be sucked up the stem.

The water molecules move up the stem sort of like water being pulled up through a straw by sucking on it.

Today we will be carrying out an **observing over time** scientific enquiry.

LO: To observe how water is transported through a plant.

SC:

*I can explain the function of the stem and how water is transported through a plant.

*I can make a prediction.

*I can set up my enquiry.

Today we are going to carry out a scientific enquiry to find out how water is transported through a plant.

You will need:

- A celery stick with the leaves still on (a white carnation with stem if you cannot use celery)
- A cup large enough to hold the celery stick (preferable transparent)
- Water
- Food colouring (red or blue)

We are going to observe what happens to the celery once it has been in the coloured water for 24 hours.

Optional investigation

If you want to carry out a comparative test you could place three different sticks of celery in coloured water and put one in a cold place, one in a room temperature place and one in a hot place. Then see in which place the water is transported the quickest.

You will need to observe these plants regularly and record what you have observed.

Task 1 – Making a prediction

First of all you need to make a prediction about what you think will happen to the celery after it has been in the coloured water for 24 hours.

I predict that the celery.....after it's been in the water for 24 hours. I think this because.....

Task 2

Set up your investigation.

If you cannot carry out this investigation at home, watch this video:

<https://www.youtube.com/watch?v=Klug9Foou3s>

Task 3

Return to your plant. What has happened?

Take the celery out of the water and look at the bottom of the stem. You should see small tubes called the xylem (these are like the veins we have in our body). This is where the water is transported.



Watch: <https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-how-does-water-get-from-the-roots-to-the-leaves/zdtfjhv>

Task 4 – Writing a conclusion for your investigation

At the end of every investigation, scientists always write a conclusion to explain what they have found out from their investigation. They also think about whether their prediction was correct and what they might have done differently to make it fairer or get more accurate results.

Spend 5 minutes thinking about what you found out and what you would change if you were going to carry out the investigation again.

Conclusion help

In my investigation of how water is transported through a plant I found out that.....

I found this out because I observed the celery.....

This means that my prediction was correct/incorrect.

If I was going to carry this investigation out again I would..... (change/do something differently)

I would change this because.....

Plenary

Can you explain to your parents what the xylem in a stem is?

If you haven't watched this video already, watch it and think about how the water which is transported to the leaves, comes out of the leaves allowing more water to be pulled up.

<https://www.youtube.com/watch?v=Klug9Foou3s>