

# 13 - Plant Structure and Transport

Flowering plants are made up of roots, stems, leaves and flowers.

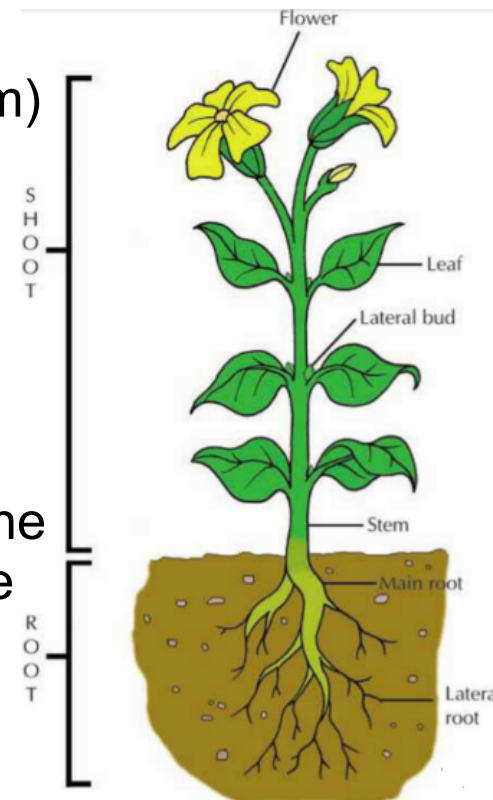
## Functions:

### Roots

The roots grow down towards gravity (Geotropism)  
They **anchor** the plant to give support  
They take in **water** and **minerals**  
They can **store** food, e.g. Carrots

### Stem

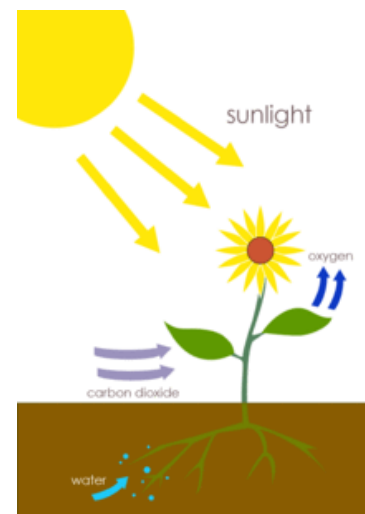
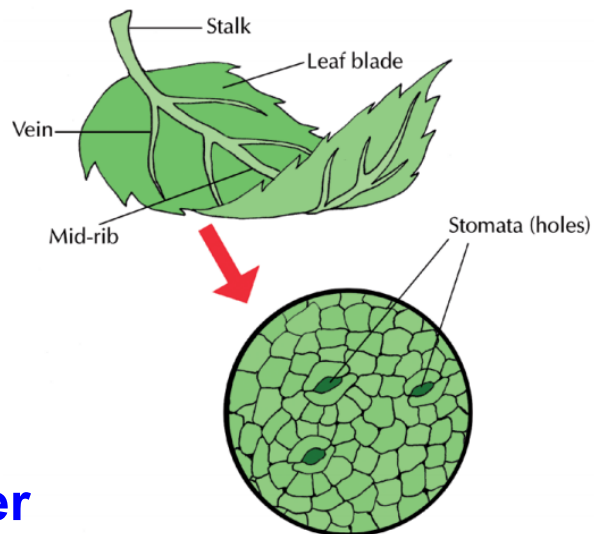
The stem **supports** the leaves and flowers.  
It carries **water** and **minerals** from the roots to the shoots. It also carries **food** from the leaves to the rest of the plant.



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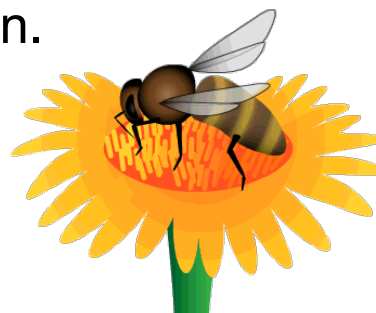
## The Leaves

The leaves make **food** (glucose) and **oxygen** by **photosynthesis**.  
Oxygen and Carbon Dioxide can be exchanged.  
Water vapour can be let out through tiny holes (stomata).



## The Flower

The main purpose of a flower is to attract insects, provide nectar and make seeds for Reproduction.



# Transport in Plants

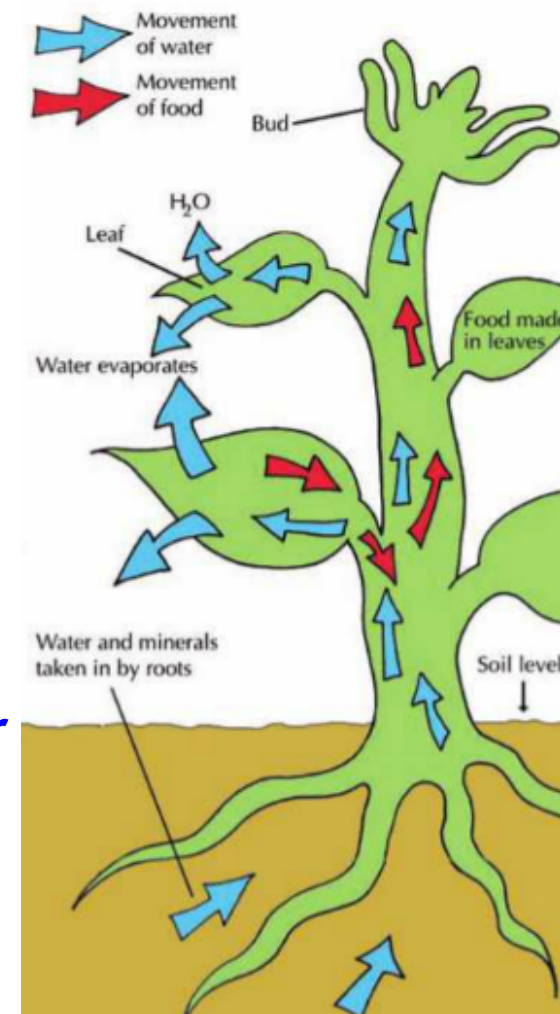
**Xylem** - carries **water** and minerals from root to leaf.

Xylem is made of 'straws' that water moves through. The water moves in a stream from the roots, up through the stem and into the leaves. It exits out of tiny holes under the leaves called 'stomata'.

This is called the '**transpiration stream**'.

**Phloem** - is also made of tubes that carry **food** from the leaves to the rest of the plant.

**Transpiration** - is the loss of water vapour from the surface of a plant.

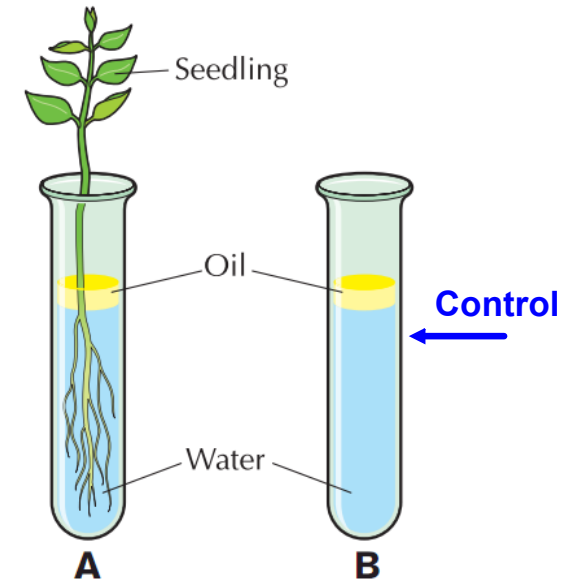


## Experiments

### 1. Transpiration

To show plants carry out transpiration .

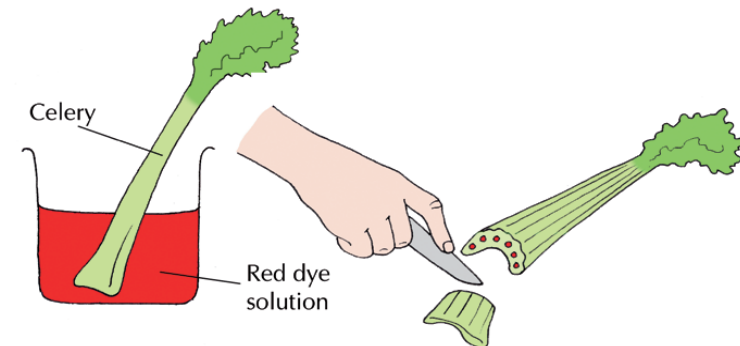
1. The water drops in A but not B.
2. The oil stops evaporation.
3. B is a control and doesn't change.



### 2. Path of water through the plant

To show water moves through Xylem tissue .

1. Celery is placed in a beaker of water and red food dye.
2. After a day the celery is cut to show water has moved up through the xylem vessels in the celery.



**Key words = Xylem, Transpiration, Control**

# Experiments

**Transpiration - is the loss of water vapour from the leaves of a plant.**

**To show plants carry out transpiration in leaves**

1. The soil is covered to stop bacteria interfering with result.
2. Water droplets appear inside plastic bag.
3. Test for water is Cobalt Chloride paper turning blue to pink.
4. Second plant has no leaves (is a control) and has no water in bag.

