



# Topic 1 Plant parts: roots and stems

## Objectives

When you have completed this lesson you will be able to:

- ☼ state the functions of a plant's roots
- ☼ state the functions of a plant's stem

## Roots

The different parts of a plant do different jobs.

Plants and trees have **roots**. Roots hold the plant in the soil. They **anchor** (keep in one place) the plant.

Roots take **water** from the soil for the plant. They act like drinking straws to take up water. The plant needs more water as it grows, so more roots are produced.



Roots usually keep trees standing when the wind blows, but they may not be able to withstand a storm.



## Activity 1

### Investigating roots



- Fill the jar to the narrow part with water.
- Add a few drops of liquid plant food.
- Place the bulb/onion in the jar so that its base touches the water.
- Put the jar on a warm windowsill.
- Observe it every day. Record what you see.

#### You will need:

- an onion or a hyacinth bulb
- a glass jar with a funnel-shaped neck
- water
- liquid plant food

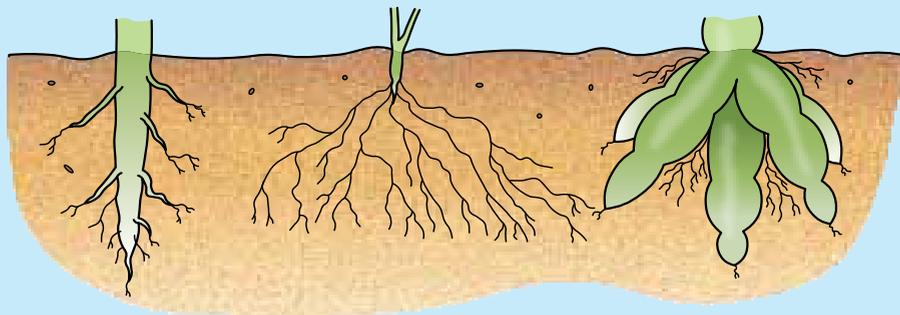
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## Activity 2

**Go outside with your teacher. Pull up some weeds. Compare their roots. Can you find these different types?**



tap root

fibrous root

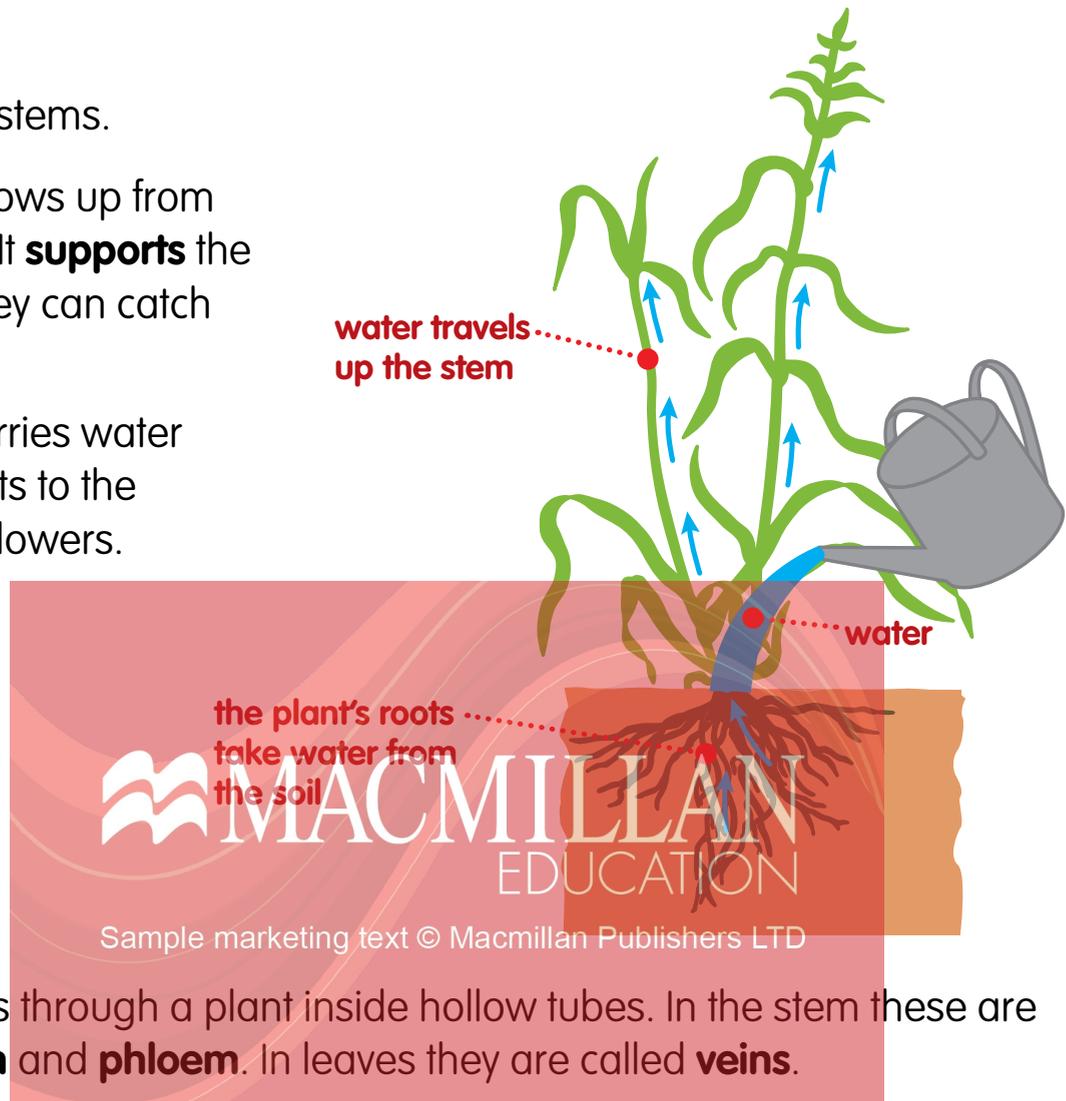
storage root

## Stems

Plants have stems.

The **stem** grows up from the ground. It **supports** the leaves so they can catch sunlight.

The stem carries water from the roots to the leaves and flowers.



Water travels through a plant inside hollow tubes. In the stem these are called **xylem** and **phloem**. In leaves they are called **veins**.



A tree's stem is called its **trunk**. It is made from wood and has great strength.

Trees grow slowly all their lives. The rings in a tree trunk show how many years it grew for.

This tree was about 70 years old.



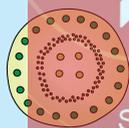
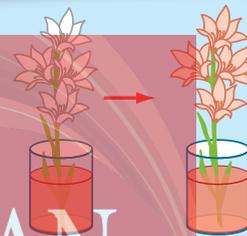
### Activity 3

#### Investigating stems

- Make a clean cut through the flower stems at the base.
- Add a teaspoon of food colouring to the water in the jars.
- Stand the flowers in the jars.
- Leave them in a warm place overnight.
- Look closely at the flowers. What do you observe?
- Repeat the experiment using a plant with a soft stem, such as a tomato plant.
- Take the plant out of the water. Make a clean cut through its stem.
- Examine the stem with a magnifying glass.

#### You will need:

- white flowers
- tomato plant
- food colouring
- jars
- a knife
- a teaspoon
- water
- a magnifying glass



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- Can you see very small tubes inside the stem?
- What are these tubes for?

#### Key words

anchor  
phloem  
roots  
stem  
supports  
trunk  
veins  
water  
xylem

### Check your progress

#### 1 Copy and complete with four of the key words.

A plant's roots \_\_\_\_\_ it in the soil. A plant's stem \_\_\_\_\_ the branches and leaves. The roots take \_\_\_\_\_ from the soil. Water travels through \_\_\_\_\_ in leaves.

#### 2 Label the roots and stem of this plant.

#### 3 Which arrow shows the way water moves through the plant, A or B?

