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?

![Diagram showing tap root, fibrous root, and storage root](image)

- 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.

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

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?