

# 1 Looking after plants

## 1.1 Plants and their parts

Plants can look very different.  
Most have four main parts.

**Words to learn**

leaves    flowers  
stem    transport  
roots    healthy  
unhealthy



**leaves** – make food for the plant

**flowers** – help the plant to make seeds

**stem** – to transport water around the plant

**roots** – support the plant and collect water from the soil

### Activity 1.1

#### Make a model plant

Make a plant like this one.  
  
Make labels for the stem, roots, leaves and flower.  
Stick them to your plant.



**You will need:**

string • straws  
coloured paper or card  
sticky tape • glue



Healthy leaves.

**Healthy** plants have healthy roots, stems and leaves.

A plant with **unhealthy** roots, stems and leaves will not grow well.



Unhealthy roots with root knot disease.



Unhealthy leaves with rust disease.



A plant with healthy roots.

## Questions

- 1 List **four** things that most plants have.
- 2 Describe how plants are different from each other.

## What you have learnt

- ☞ Most plants have roots, a stem, leaves and flowers.
- ☞ Healthy plants have healthy roots, stem and leaves.
- ☞ A plant with unhealthy roots, stem and leaves will not grow well.

### Talk about it!

Why don't plants have flowers all year round?

## 1.2 Plants need light and water



Sunil has an unhealthy plant.

What does a plant need to stay healthy and grow?

### Words to learn

predict

investigation

fair test

wilt

explain



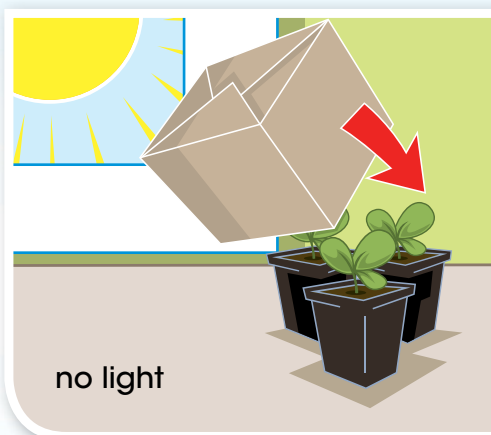
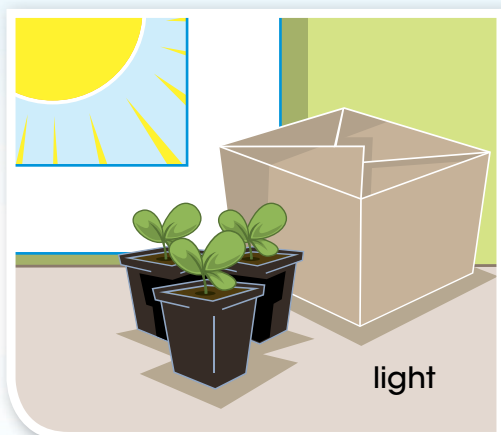
### Activity 1.2a

#### Do plants need light to grow?

Look at the pictures to see what to do.

#### You will need:

six young plants • watering can • box to cover three plants



Water all the plants every day.

What do you **predict** will happen to the leaves, stems and roots of the plants?

In this **investigation** both groups of plants are given water.

What else do you need to keep the same to make this a **fair test**?

If plants do not get enough light and water the roots, stem or leaves, become unhealthy. The plant will **wilt**.

Light and water both help the plant to make food.



## Activity 1.2b

### Do plants need water to grow?

Look at the pictures to see what to do.

#### You will need:

nine young plants • watering can



What do you predict will happen to the plants' leaves, stems and roots in each case?

What do plants need to grow? How do you know?

**Explain** what you have found out.

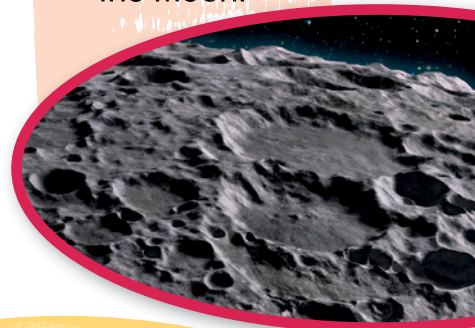
## Questions

- 1 What does a plant need to grow and stay healthy?
- 2 Explain what happens to the stem and leaves when you put a plant in a dark place.
- 3 Would a plant grow if it was given juice instead of water? Draw a picture to show how you could investigate this.

## What you have learnt

- ☞ All plants need light to grow and keep their stems and leaves healthy.
- ☞ All plants need some water to grow and keep their stems and leaves healthy.

The surface of the Moon.



### Talk about it!

Could plants ever grow on the Moon?

# 1.3 Transporting water

## The roots and the stem

Helene has a plant that looks unhealthy.  
Look at the roots.

Words to learn  
absorb



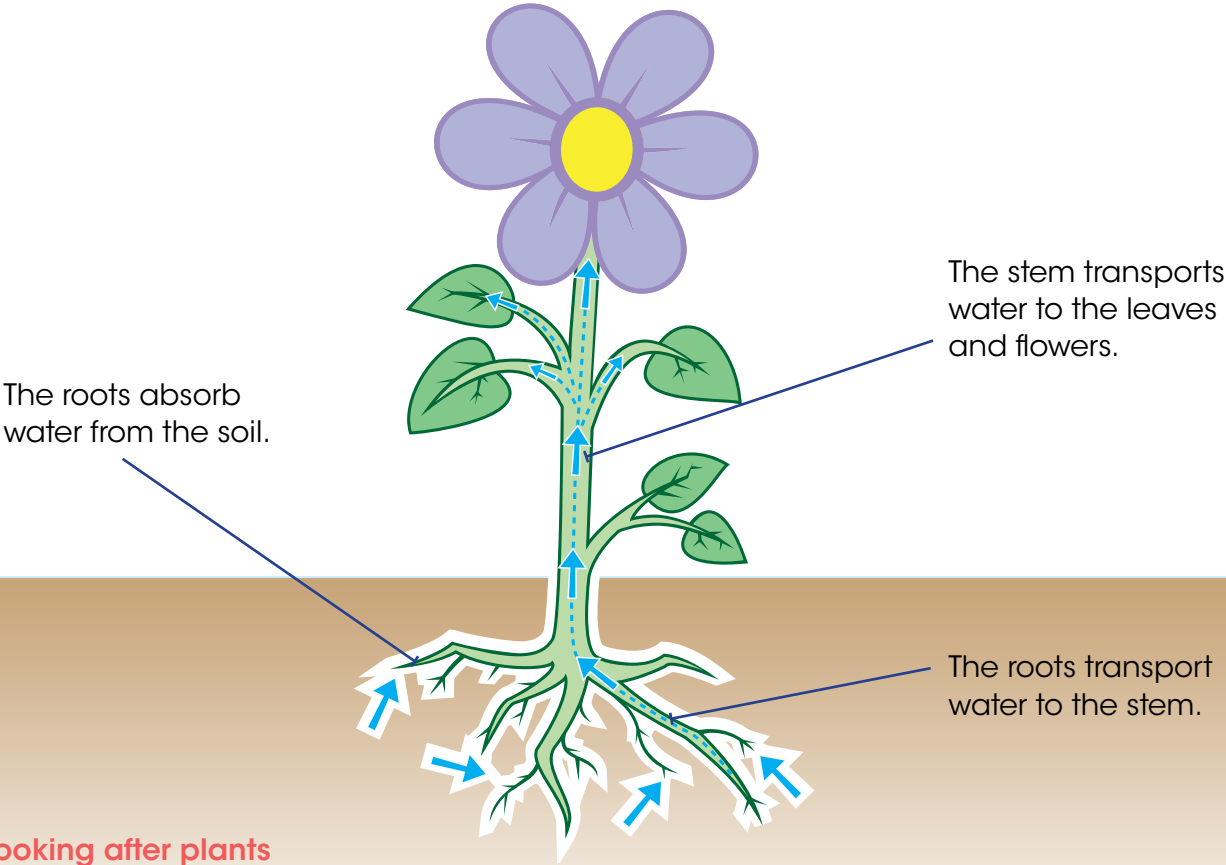
This pot is too small  
for the roots.



The roots are really close  
together and cannot  
**absorb** water well.



Putting the plant in a  
bigger pot will allow the  
roots to spread out.



## Activity 1.3

### Making plants go blue

#### You will need:

a white flower • some celery • a container of water  
blue food colouring • a plastic knife

A plant stem can transport water to the leaves and flowers.  
Predict what would happen if the water was blue.



After one day, cut the celery and look inside.  
Can you explain what has happened to the celery and the flower?

## Questions

- 1 Why do plants sometimes need to be moved to a bigger pot?
- 2 How do plants get water to their leaves?
- 3 What would happen to a plant with no roots? Why?

## What you have learnt

- ☞ Roots absorb water from the soil.
- ☞ Roots transport water to the stem.
- ☞ The stem transports water around the plant.

### Talk about it!

What happens to flowers when they are cut and put into water?

# 1.4 Plant growth and temperature

## Activity 1.4

**You will need:**

two similar bean plants • a thermometer • a ruler

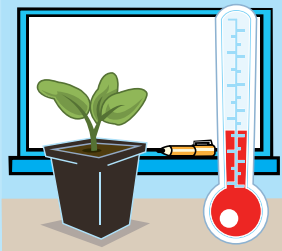
**Words to learn**

thermometer      temperature  
results              bar chart  
conclusion

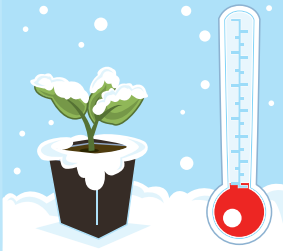


### At which temperatures do plants grow best?

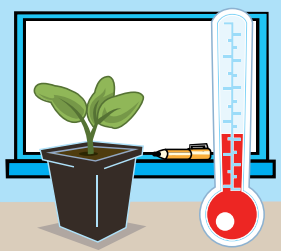
Set up an investigation like one of the pictures below.



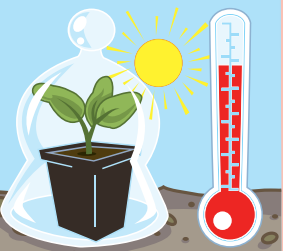
Put one plant in the classroom.



Put one plant outside in cold weather.



Put one plant in the classroom.



Put one plant outside in warm weather.

Predict which plant will grow the best. Use a ruler to measure the height of the plants and a **thermometer** to measure the **temperature** every few days. Record your **results** in a table.

Day	Cold/hot plant		Warm plant	
	Temperature in °C	Height in cm	Temperature in °C	Height in cm
1				

Draw a **bar chart** to show the height of the plants on the last day. What is your **conclusion**? At what temperatures do plants grow best?



Think about the place you live. Is there enough warmth for plants to grow?

This is a rainforest. Many plants find it easy to grow here. It is warm but not too hot and there is plenty of water.



When is the warmest time of year? When is the coldest?  
Can plants grow all year?



At over  $56^{\circ}\text{C}$ , Death Valley in America is one of the hottest places on Earth.



At  $-89^{\circ}\text{C}$ , Antarctica is the coldest place on Earth.

## Questions

- 1 Where do plants grow best? Cold places, hot places or warm places?
- 2 What happens when a plant gets too hot?
- 3 How is plant growth affected by temperature?

## What you have learnt

- ☞ Plants grow more slowly when it is cold.
- ☞ Plants grow more quickly when it is warm.
- ☞ Plants die when they get too cold or too hot.

### Talk about it!

Why are there no plants in Death Valley or Antarctica?



# 1

## Check your progress

**1** Here is a flowering plant.

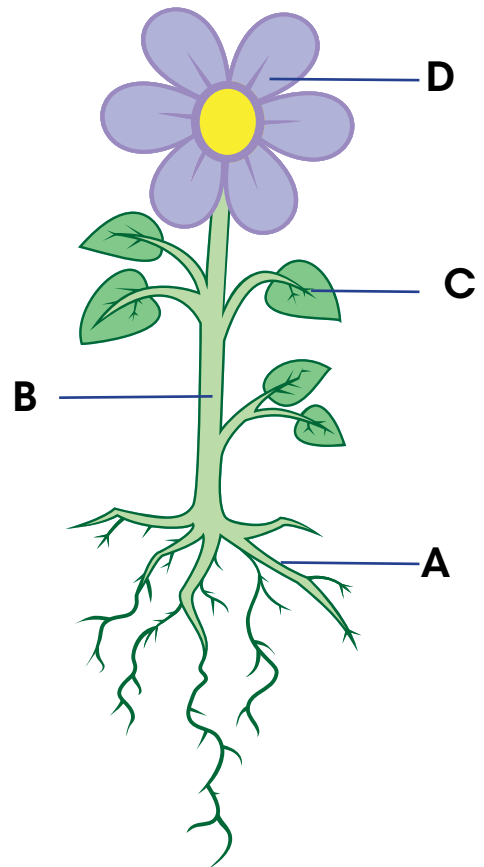
Copy and complete these sentences.

**A** is the \_\_\_\_\_ .

**B** is the \_\_\_\_\_ .

**C** is a \_\_\_\_\_ .

**D** is the \_\_\_\_\_ .



**2** Copy and complete the sentences using the missing words.

You may use each word more than once.

roots

flowers

stem

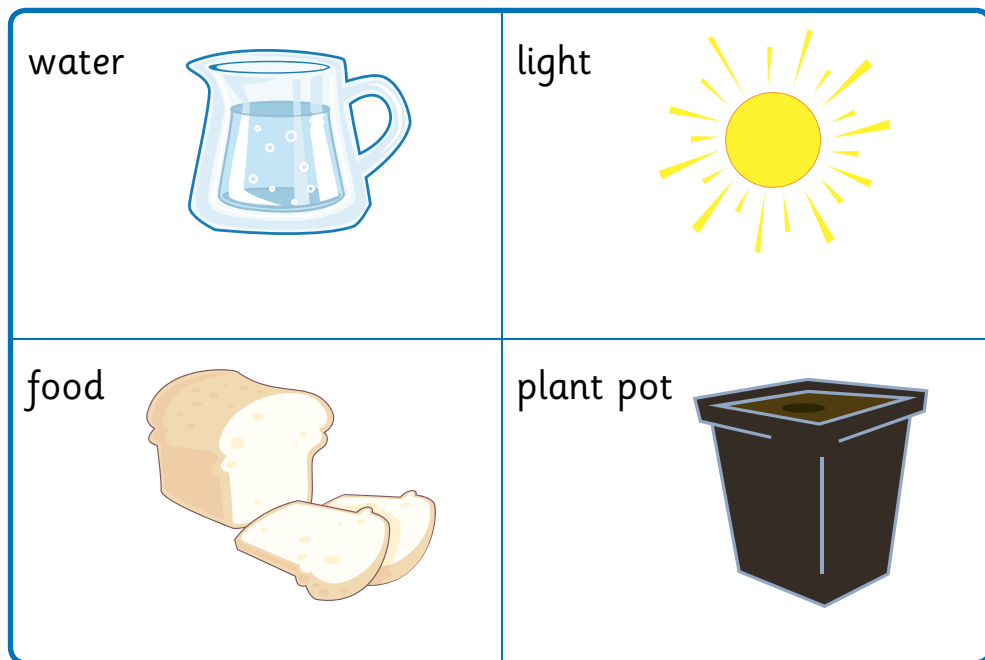
leaves

water

Plants have \_\_\_\_\_ that are under the ground. These hold the plant up and also absorb \_\_\_\_\_. The water is transported to the \_\_\_\_\_ and then to the \_\_\_\_\_ and the \_\_\_\_\_ .

The \_\_\_\_\_ make food for the plant. The \_\_\_\_\_ help the plant to make seeds.

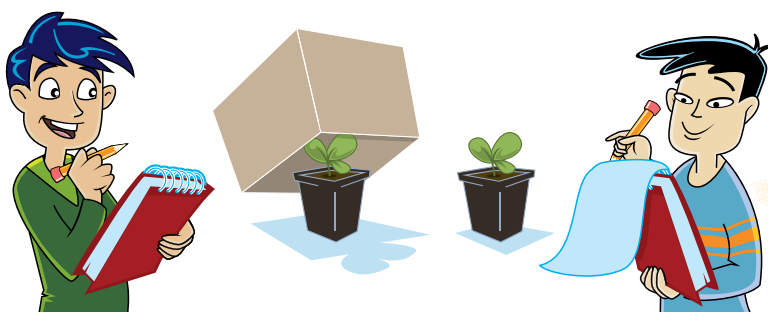
**3** Which **two** of these does a plant need for it to to grow?



Copy and complete this sentence.

A plant needs \_\_\_\_\_ and \_\_\_\_\_ to grow.

**4** Luiz and Cheng have planned an investigation.



- a** What are they investigating?
- b** What do they need to keep the same to make the test fair?
- c** Which plant will grow the best?