

Living and non-living things



Living things

A horse is alive.
 A tree is alive.
 You are alive!
 People, animals and plants are **living** things.

Lesson 1
 When you have completed this lesson you will be able to:

- classify the things around you as living, non-living or once-living
- begin to describe the processes of life

Once-living things

A wooden spoon, a bone and a cotton shirt are not alive. But they were once. Wood, bone and cotton grew as parts of living things.



Non-living things

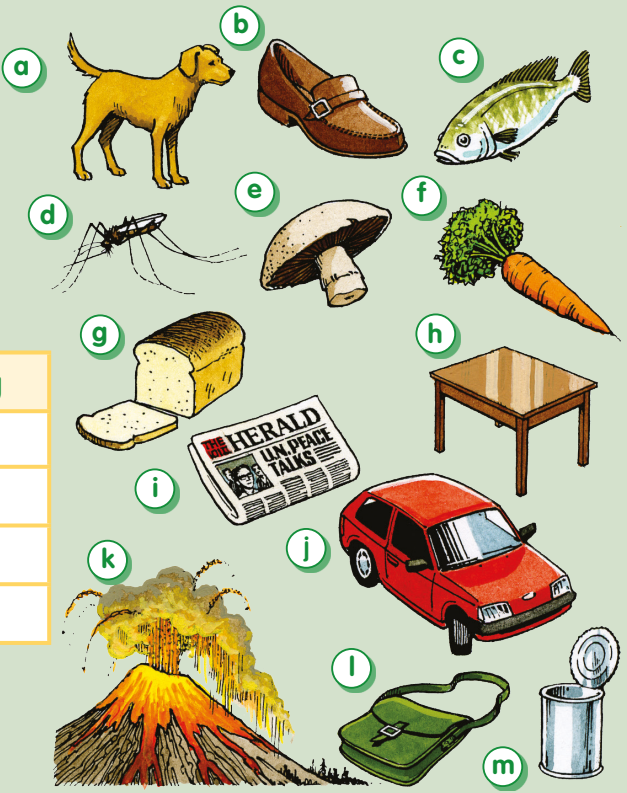
A rock and a coin were never alive. Stone and metal are **non-living** things.

Activity 1

Work in a group.
 Talk about each of the things shown here.
 Decide if each one is alive, was once-living or is non-living.
 Copy and complete the table. Add more items if you can.

Living	Once-living	Non-living
dog	leather bag	tin can

Discuss what is special about living things.
 Make a list of the things that living things do and that non-living things cannot do.





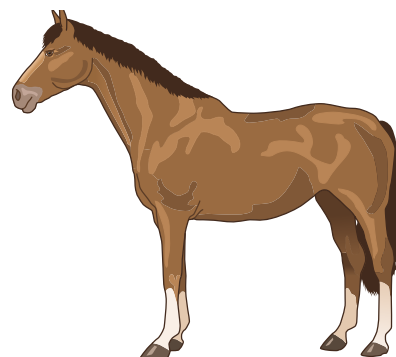
Lesson 1: Living and non-living things

Life processes

We can tell when something is alive because of the things it does. These things are called **life processes**.

You can tell that a horse is alive because it:

- feeds – a horse eats grass
- moves – a horse moves its body
- grows – a foal grows into an adult horse
- senses – a horse sees, smells, tastes, hears and feels
- produces waste – a horse passes urine and faeces
- breathes – a horse breathes air through its nose and mouth
- reproduces – a male and female horse mate and have a foal.



You will learn more about life processes and the characteristics of life in the next lesson.

Activity 2

Talk about each thing in this table. Tick the processes that each thing does. Some non-living things do some of the processes that living things do, but not all.

	Moves	Grows	Feeds	Senses	Respires (breathes)	Makes waste	Reproduces
1. fish							
2. insect							
3. car							
4. fire							
5. river							

What you have learnt

Plants and animals are ____ things. We can tell that they are alive because they move, grow, reproduce and perform other ____ _____. Stones, water and other ____ things do not have all the characteristics of life.

Key words

life processes
living
non-living

Check your progress

- ① Name three materials that were once alive but are not now alive.
- ② List seven life processes that a living thing shows.
- ③ Your friend says that a car moves and makes waste, so it must be alive. Give your friend three reasons why a car is not alive.



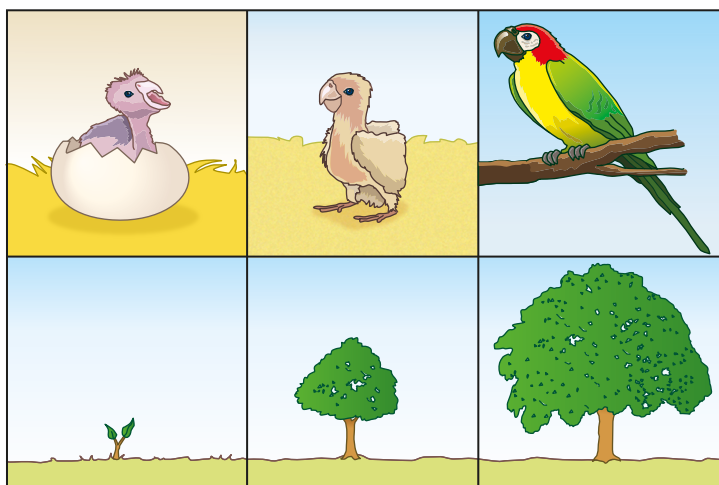
The characteristics of life

What is life?

Scientists agree that all living things share seven basic characteristics. Living things:

- **grow**
- reproduce
- sense (respond to changes in the surroundings)
- move
- feed (eat or make their own food)
- respire
- **excrete** (get rid of waste)

Let us look at how an animal and a plant show each characteristic. Our animal is a parrot, our plant is a mango tree.



Growth

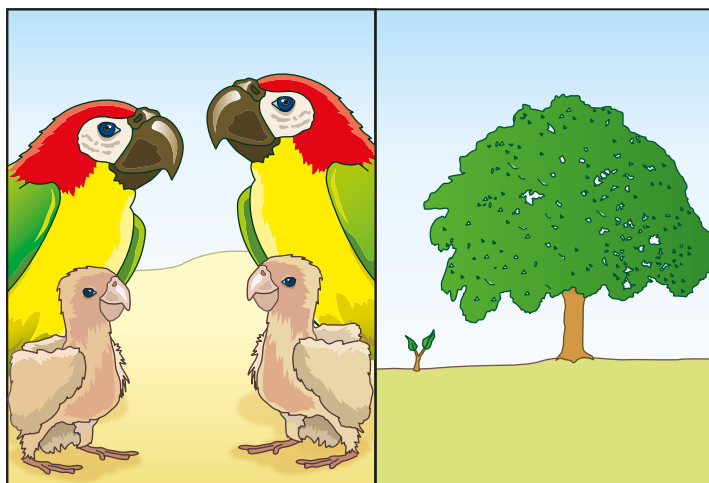
The parrot grew from a chick that hatched from an egg.

The mango tree grew from a seed.

Reproduction

The parrot has a mate. She lays eggs that hatch into chicks. The parrots' offspring grow up to be like their parents.

The tree makes seeds. A seed may germinate (sprout) and grow into a new tree like its parents.



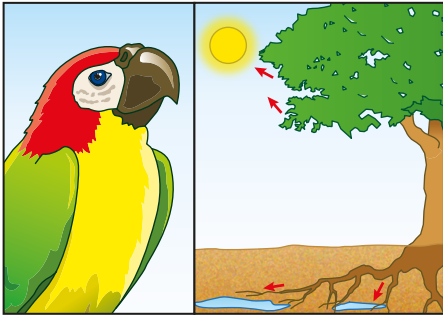
Lesson 2

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

- list the seven characteristics of life
- explain why each characteristic is essential for life
- discuss how an animal and a plant show life's characteristics



Lesson 2: The characteristics of life



Sensitivity

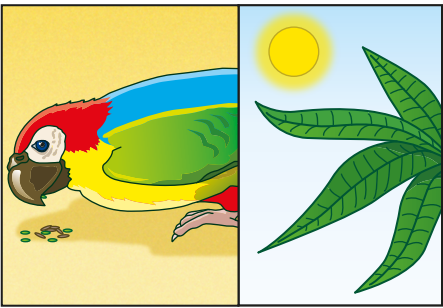
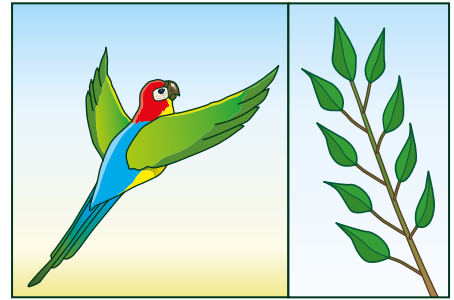
The parrot can see, hear, smell, taste and feel. It uses its senses to find food, choose a mate and to react to danger.

The tree cannot see or hear, but it is sensitive to sunlight and moisture. Its leaves grow towards the light; its roots grow down into the soil to find water.

Movement

The parrot moves from place to place to find food, escape danger and find a mate.

The tree grows in one place, but its parts move. Its flowers open and close; its leaves grow towards the light.



Nutrition (feeding)

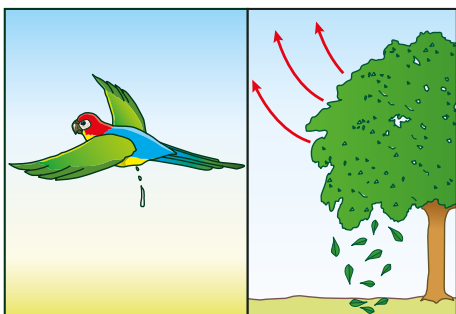
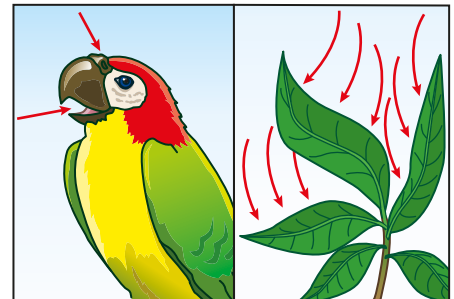
All living things need energy and nutrients (materials to build and maintain their bodies). The parrot eats seeds, fruits and other plant parts.

The mango tree makes food in its leaves. You will learn more about plant and animal **nutrition** in the 'Nutrition' and 'Plant parts and characteristics' lessons.

Respiration

Respiration releases the energy stored in food. This needs oxygen from the air. The parrot breathes through its nostrils and mouth.

The mango tree takes in oxygen through its leaves, stems and roots. You will learn more about respiration on page 20.



Excretion

Respiration produces waste and so do other life processes. Getting rid of waste from the body is called excretion. The parrot excretes waste from its body in its droppings. It breathes out waste gases from its mouth. The mango tree excretes waste gases into the air from its leaves. Harmful chemicals are stored in its leaves. They are excreted when the leaves fall from the tree.



Activity 1

Why are the seven characteristics essential for life?

This table lists things that living things must do to survive. Copy the table.

Complete it by filling in the life characteristic that allows organisms to do each thing. The first one has been done for you.

To survive organisms must	Life characteristic required
1. obtain energy and materials	<i>nutrition</i>
2. increase in size to become adults	
3. produce young like themselves	
4. get rid of waste from the body	
5. release energy from food	
6. detect changes in their surroundings	
7. escape from danger	

What you have learnt

All living things share the seven characteristics of life. When their bodies ____ they increase in size. They eat other organisms, or make their own food for _____. They ____ to get rid of waste. During ____ they produce offspring similar to themselves. They release energy from their food by _____. They show ____ to changes in their surroundings and are capable of ____ of their whole body or body parts.

Key words

excrete	grow
movement	nutrition
reproduction	respiration
sensitivity	

Check your progress

- 1 List the seven characteristics of life.
- 2 What is the purpose of: (a) excretion? (b) respiration?
- 3 Explain two ways in which a tree excretes waste from its body.
- 4 Give three reasons why an animal must be able to sense its surroundings.



Nutrition

All living things need food. They need food to be able to:

- grow and move
- keep healthy
- repair damage to the body.

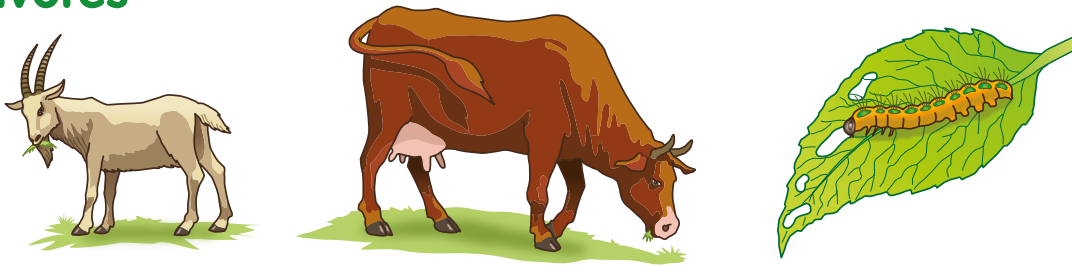
Plants make food in their leaves from sunlight, water and gas from the air. They obtain other nutrients from the soil through their roots. Animals eat plants and other animals for food.

Lesson 3

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

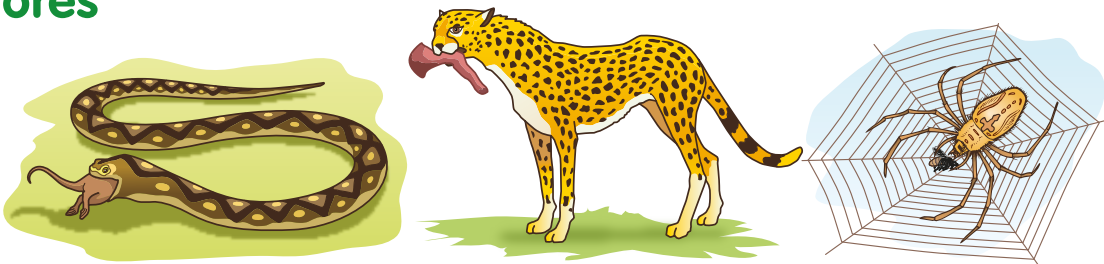
- explain why all living things need nutrition
- describe how different animals obtain nutrition by eating plants and/or animals

Herbivores



Animals that just eat plants are called **herbivores**. Cattle, camels, goats, and caterpillars are herbivores.

Carnivores



Animals that mainly eat other animals are **carnivores**. Cheetahs, crocodiles, snakes and spiders are carnivores.

Omnivores



Animals that eat a mixture of plant and animal food are called **omnivores**. Chimpanzees, rats, bears and people are omnivores.