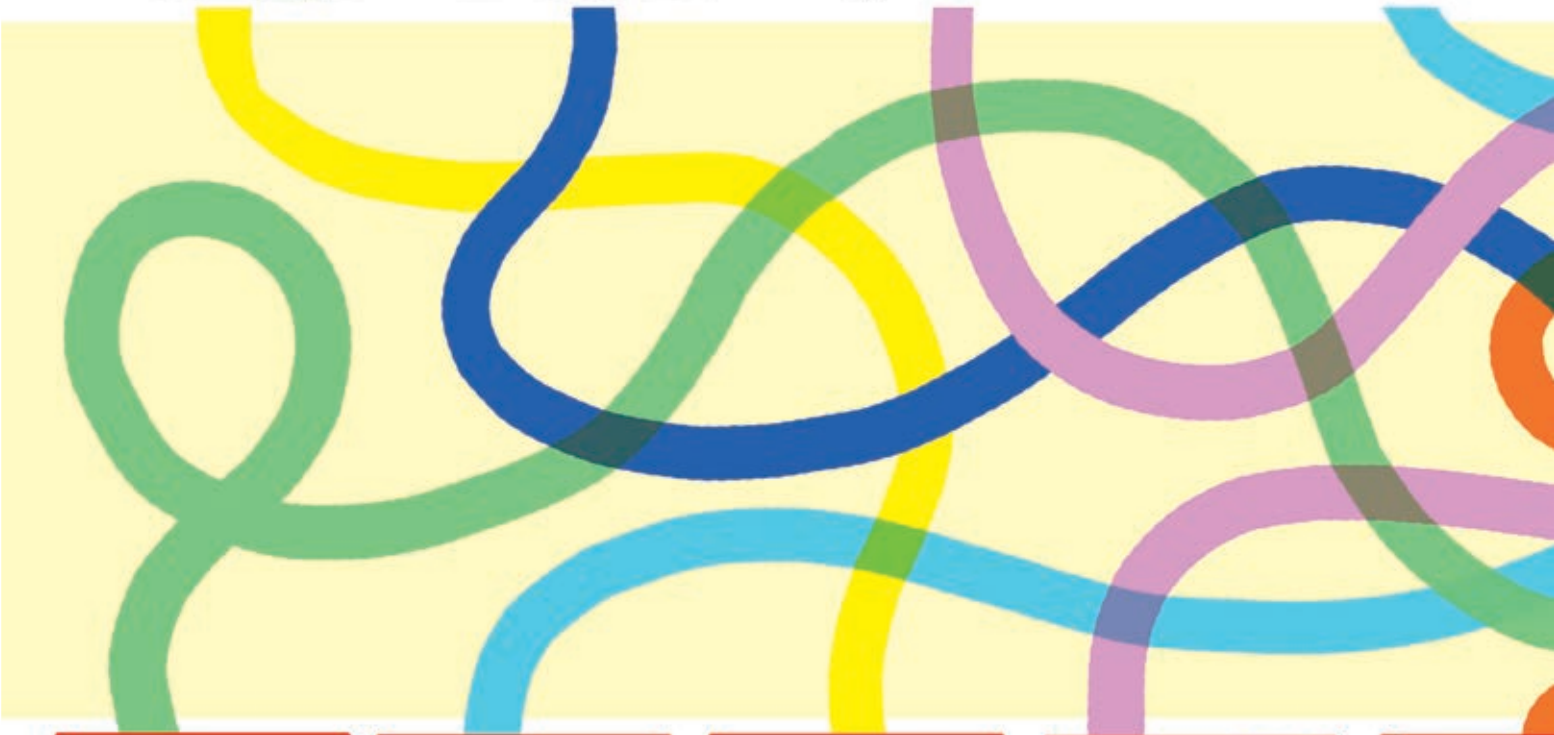
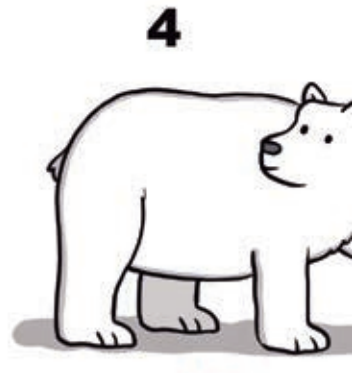
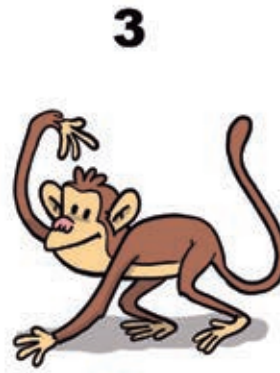
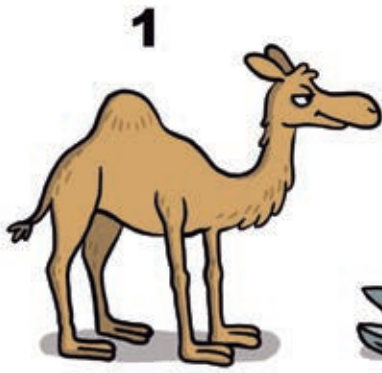


1 Watch. How do the bee and flower work together?



T



I



H



B



A

Let's learn about ...


- how we classify living things
- why ecosystems are important
- how we can protect ecosystems



5                      6                      7

5                      6                      7


**T**                      **A**

2  Match the numbers to the correct letter.

|   |     |
|---|-----|
| 1 | ... |
| 2 | ... |
| 3 | ... |
| 4 | ... |
| 4 | ... |
| 6 | ... |
| 7 | ... |

3 Look at the maze. Find an example of ...

- a mammal
- a mollusc
- an amphibian

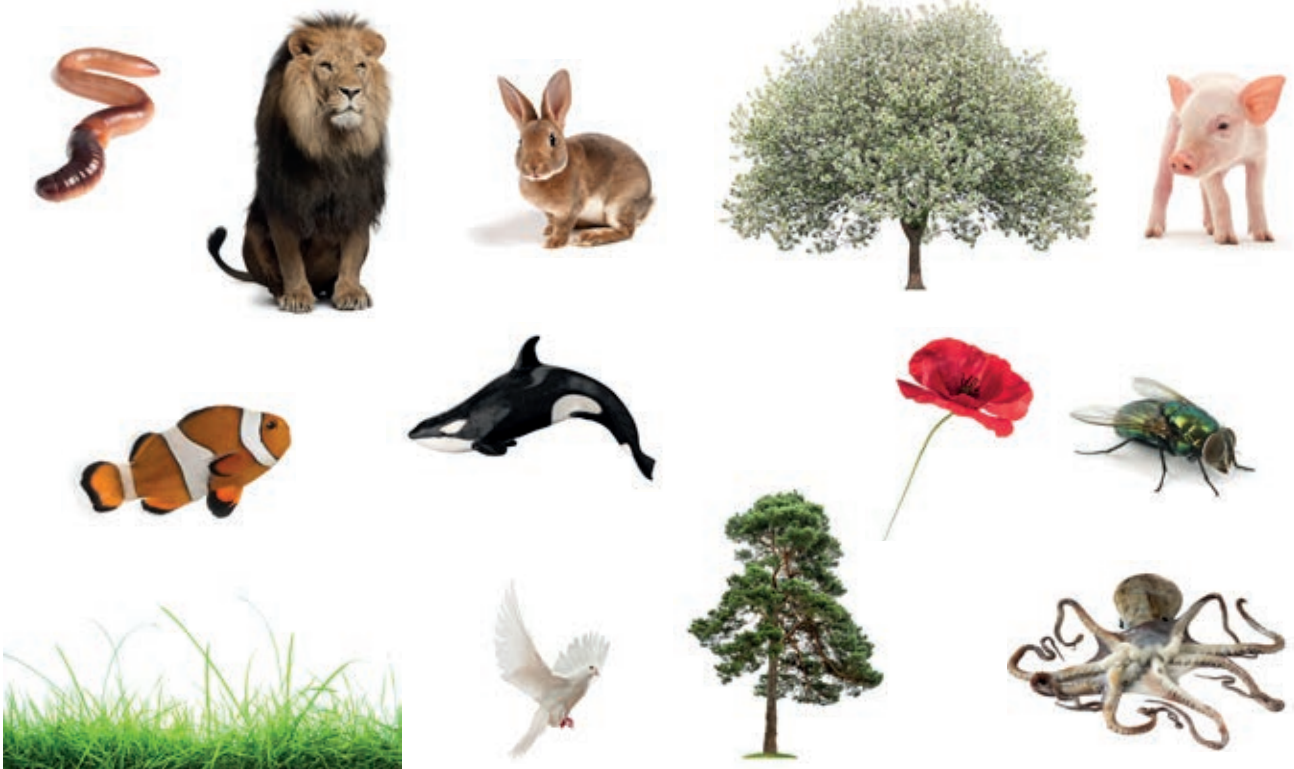
4  Ask a classmate about a natural space near where they live.

## How do we classify living things?

Scientists classify living things into groups with similar **characteristics**. It's important to classify living things to understand how they're similar and different.

1  Work in pairs. Look at the living things in the box.

- Describe a living thing to your classmate. Can they guess what it is?
- Think of ways to group the living things.



### Plants

There are different types of plants: **trees, bushes, ferns, grasses** and **mosses**. Trees can be **deciduous** or **evergreen**.

Some plants produce **seeds** and some have got **flowers**.

Scientists can classify plants by where they grow.



## Animals

Animals can be **vertebrates** or **invertebrates**. Vertebrates have got a backbone and include **mammals, birds, fish, reptiles** and **amphibians**. Invertebrates haven't got a backbone and include **worms, arthropods, echinoderms** and **molluscs**.

Animals can be warm-blooded or cold-blooded.

Scientists can also classify animals by:

- what they eat.
- where they live.
- their body parts.
- the way they reproduce.



Scientists can also classify living things by the **ecosystem** where they live. An ecosystem is a community of living things in an area.

**2** Name an animal that lives in each ecosystem.

a. a pond

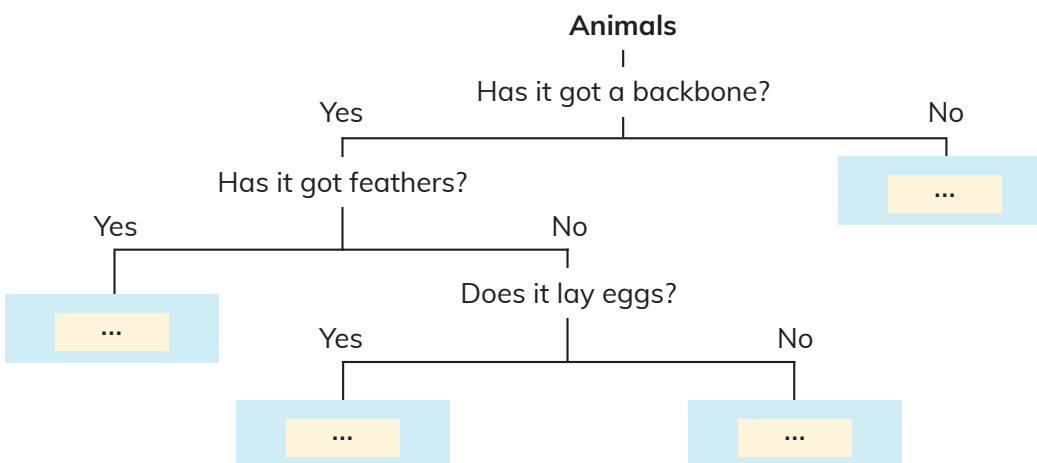
b. a forest

c. a desert

**3** Copy the diagram in your notebook. Find one more animal for each box.

|                | Lays eggs   | Doesn't lay eggs |
|----------------|-------------|------------------|
| Lives in water | <i>fish</i> | ...              |
| Lives on land  | ...         | ...              |

**4** Copy the diagram and classify the animals.



duck

horse

spider

frog



**At home**

Make a diagram to classify four animals.

## What's an ecosystem?

There are many **different types** of ecosystems on Earth, such as grasslands, ponds, forests, coasts and cities.



**Grasslands** are areas with long and short grasses. There aren't many trees. Horses, rabbits and mice live there.

**Forests** are areas covered in trees. They provide oxygen that living things need for respiration. **Tropical rainforests** are hot, humid and rainy. Most of the trees are evergreen, which means they don't lose their leaves. Monkeys, jaguars, frogs and parrots live there. **Temperate forests** have got deciduous trees which lose their leaves in winter. Foxes, bears, owls, squirrels and eagles live there.



**Ponds** are freshwater ecosystems. Some plants grow under the water. Frogs, fish, ducks and many types of insects live in ponds. Plants next to the pond provide shelter for frogs and birds.

**Coastal** ecosystems appear where the sea meets the land. They can be beaches, coral reefs or **mangroves**. There are a lot of different plants and animals that live there, including fish, turtles and birds.



An **urban** ecosystem consists of all the living and non-living things in a town or city. These can include buildings, roads, parks, gardens and rivers or streams. Foxes, cats, pigeons and rats live there.

1 In what kind of ecosystems can you find ... ?



2 Listen to the living things. Jump if it's from a grassland. Put your hands on your hips if it's from a pond. 001

In an ecosystem, all living things need food. Food chains show how living things in an ecosystem get energy. Plants are **producers**, which means they produce their own food. Animals are **consumers**, which means they eat, or consume, other living things for food.

3 Copy and match.

a. Producers ...

eat other animals.

b. Consumers ...

make their own food.

c. Herbivores ...

eat plants.

d. Carnivores ...

eat other living things.

4 Look and answer the questions.

- What do seals eat?
- What type of living thing is at the beginning of both food chains?
- What type of ecosystems do the food chains belong to?

Food chain 1



grass



grasshopper



mouse



owl

Food chain 2



algae



fish



seal



shark



At home

Choose an ecosystem. Draw a food chain and show someone at home.

## Make an insect hotel



Can you make a habitat for insects to live and grow safely?

### Before you start

Insects are very important to ecosystems, but chemicals from farms are killing them. They're at the bottom of food chains, so when insects die, there are problems for other animals in the food chain.

- 1 Look at the photos. Match the insects to their ecosystems.



### You need ...

- a clean empty milk carton
- cardboard tubes
- natural materials: dry leaves, pine cones, moss, bark, small sticks
- scissors



## Planning

- 1 Use the scissors. Remove one side of the milk carton.



- 2 Cut the cardboard tubes as tall as the sides of the milk carton.



- 3 Put the tubes into the milk carton. Put as many as you can.



- 4 Put the natural materials in the tubes and between the tubes. Fill the milk carton with materials.



- 5 Find a space outside with shelter and shade. Leave your insect hotel there. Check your hotel every week.



- 6 Keep a diary.

- How many insects can you see?
- What kind of insects are living there?

Compare your results with your classmates.





# How do living things interact in an ecosystem?

An ecosystem is a **community** of animals, plants, micro-organisms, non-living things and their **shared environment**.

## 1 Watch. Complete the sentences.

a. An ecosystem can be ...

small, like a puddle.

big, like a forest.

big or small.

b. An ecosystem consists of all the ...

living things in an area.

non-living things in an area.

living and non-living things in an area.

## 2 Find the living and non-living things.



fish

wind

soil

frog

bird

insect

rocks

plants

bear

trees


worm

deer


sunlight

water

Non-living and living things interact in an ecosystem. Living things are called **biotic factors**. Non-living things are called **abiotic factors**. Abiotic factors are important in an ecosystem because living things (biotic factors) need abiotic factors to grow, eat and reproduce, for example:

 **Sunlight** provides energy for plants to grow.

**Wind** carries seeds from plants to other places to grow. 

 All living things need **water** to survive and grow.

Living things need **oxygen** for respiration. 

3  Copy and complete the sentences.

sunlight

oxygen

wind

water

- The ... helps seeds travel.
- Living things need ... to grow. Some animals and plants live in this.
- Living things need ... for respiration.
- ... provides energy for plants to grow.

An ecosystem is healthy when there is **balance** and **biodiversity**. This means there are lots of different animal and plant species. Human activity and environmental changes can affect the balance of an ecosystem. This can cause many problems.



**Language learning lab**

We use **going to** to talk about future events. Complete the sentences with **is going to**, **are going to**, **isn't going to** or **aren't going to**.

- The temperature is getting hotter. The ice ... melt.
- The water is polluted. The fish ... get sick or die.
- The grass is dying. The animals ... have any food to eat.

4  Imagine the river in activity 2 hasn't got any water. What changes are going to happen in this ecosystem?

The animals are going to ...

The plants are going to ...



**At home**

Go for a walk in a natural area near your house. Make a list of the biotic and abiotic factors you find.

## How can we protect ecosystems?

Ecosystems can be protected through **responsible use**. Some human activities can **damage** our ecosystems.

Humans spray chemicals on their crops to kill insects. These chemicals are called **pesticides** and affect the food chain. When it rains, the pesticides travel to streams and rivers which make fish and plants sick.

**Overfishing** is when humans take too many fish from the sea. This means bigger animals don't have enough fish to eat.

When we **build cities**, animals and plants lose their natural habitat. Transport and factories cause **air pollution** in cities.

**Deforestation** is when humans cut down a lot of trees in one place. Animals lose their habitat.

Humans leave plastic rubbish called **litter**. Animals get trapped in it. Sometimes they eat it and get sick or die. Dangerous chemicals from litter can pollute the soil and water.



1 **Watch.** What can we do to protect our ecosystems?



2 **Listen and say the chant.** 002

**Be a habitat hero**

|   |   |
|---|---|
| Be a habitat hero.<br>Take only what you need.<br>When you cut a <input type="text"/> ,<br>plant another seed.              | Be a habitat hero.<br>Use the bus, not a <input type="text"/> .<br>It keeps our air clean<br>and can take you very far.   |
| Be a habitat hero.<br>Keep your planet clean.<br>Don't put <input type="text"/> on the ground,<br>in the rivers or the sea. | Be a habitat hero.<br>Protect our <input type="text"/><br>because when they're gone,<br>you're really going to miss them! |

3 **Make a poster.** Show how you can be a habitat hero!



**At home**

Show your poster to someone at home and explain what it means.

## Why are ecosystems important?

Healthy ecosystems are important because they can clean the water, clean the air, keep the climate stable, provide living things with food and keep the soil healthy.

Tropical rainforest ecosystems only cover about 6% of the Earth but they're very important.

- Rainforests clean the water and air because they filter carbon dioxide and pollutants from the atmosphere.
- A lot of medicines come from rainforest plants.
- More than 50% of the land animals on Earth live in rainforests.
- Many foods, like bananas and pineapples, grow in rainforests.

### 1 Which of these do we get from rainforests?

mangoes

apples

rubber

plastic

coffee beans

wheat



Forest ecosystems provide trees. People can build houses and make paper with wood from trees.



Pond ecosystems provide a habitat for plants and animals that live in water.



Grassland soil has got many **nutrients**. Farmers use grasslands for **agriculture** and **livestock farming**. They grow **crops**, like cereals or corn. Animals, like cows or sheep, eat the grass.

### 2 Research a type of ecosystem near you. What food or materials can you get from that ecosystem?

# Which location has got the most air pollution?

### Hypothesis

I think the ... has got the most air pollution.

### Materials

- 4 plastic plates
- magnifying glass
- masking tape
- permanent marker
- petroleum jelly



### Step 1

Use the permanent marker to label each plate with a different location around the school.



### Step 2

Spread a thin layer of petroleum jelly on each plate.



### Step 3

Use the masking tape to hang the plates in their location. Wait three days and collect your plates.



### Step 4

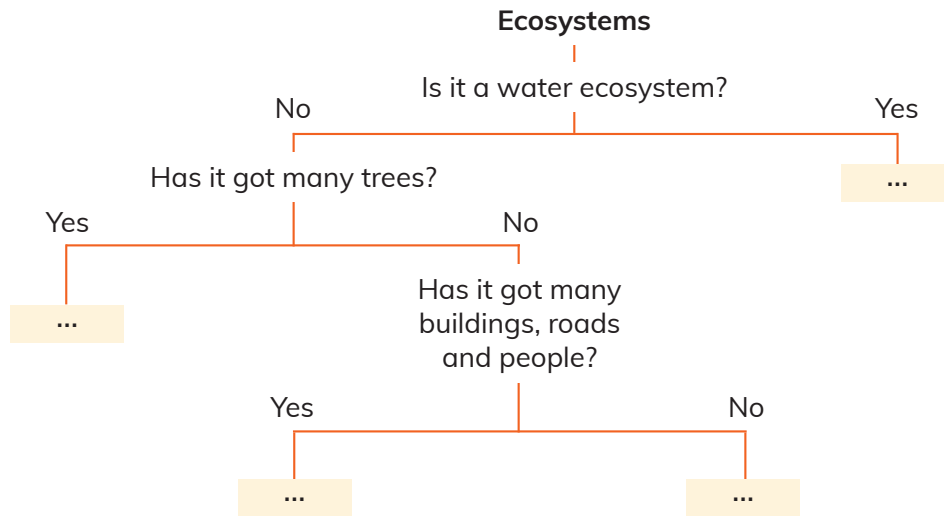
Use the magnifying glass to observe the different particles that were collected.



**▶ Watch.** Compare your results with a classmate. Fill in the worksheet. [↓](#)



1 Complete the diagram in your notebook.



- pond
- urban
- forest
- grasslands

2 Choose an ecosystem. Copy and complete the table.

| Name of ecosystem | An animal that lives here | A plant that grows here | Why this ecosystem is important to us | How we can protect this ecosystem |
|-------------------|---------------------------|-------------------------|---------------------------------------|-----------------------------------|
| ...               | ...                       | ...                     | ...                                   | ...                               |

3 What's the difference?

- a. biotic / abiotic
- b. producer / consumer
- c. recycling / litter

4 Do the quiz.

5 Do the WebQuest.

### WebQuest



What do you know about deserts? When you finish your WebQuest, answer true or false.

- a. The desert is hot in the day and at night.
- b. Plants grow in the desert.
- c. No humans live in the desert.





# Reflect

1 Check. Copy the chart and colour the stars.

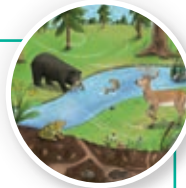
I can ...

classify animals and plants.



I can ...

explain what an ecosystem is.



I can ...

talk about the main characteristics of five types of ecosystems.



I can ...

understand how animals and plants are connected by a food chain.



I can ...

test which location has got the most air pollution.



I can ...

name some ways we can protect ecosystems.



Key:

★ I'm not sure.

★★ I need some practice.

★★★ I understand.

2 Keep an ecosystem journal. When you visit a new natural area:

make notes about the biotic and abiotic factors



draw or paint a picture of what you see



find out how people are protecting the area

