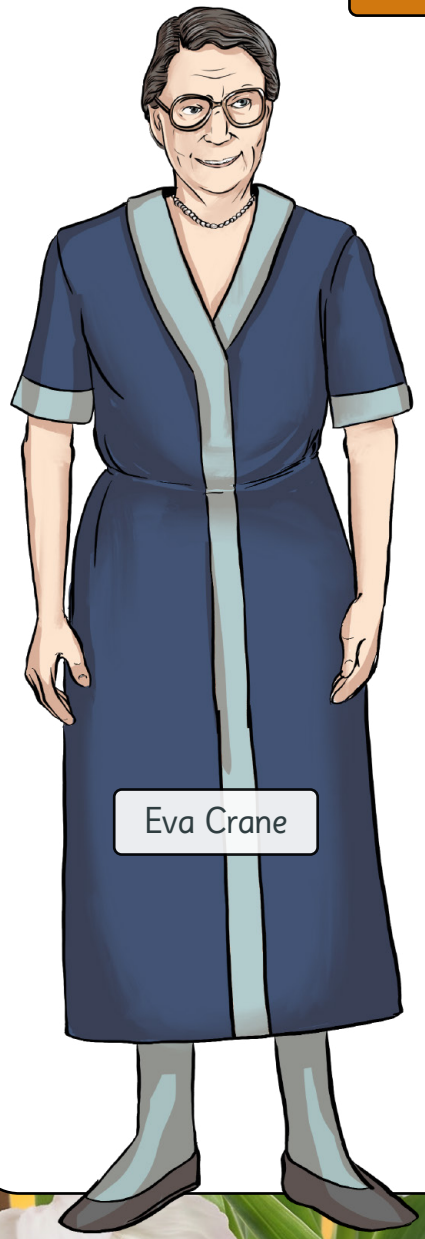
Conservation of bees

How can we make our school environment more bee friendly?

Lesson 1: Why are bees important for our planet?



Geographical knowledge and concepts



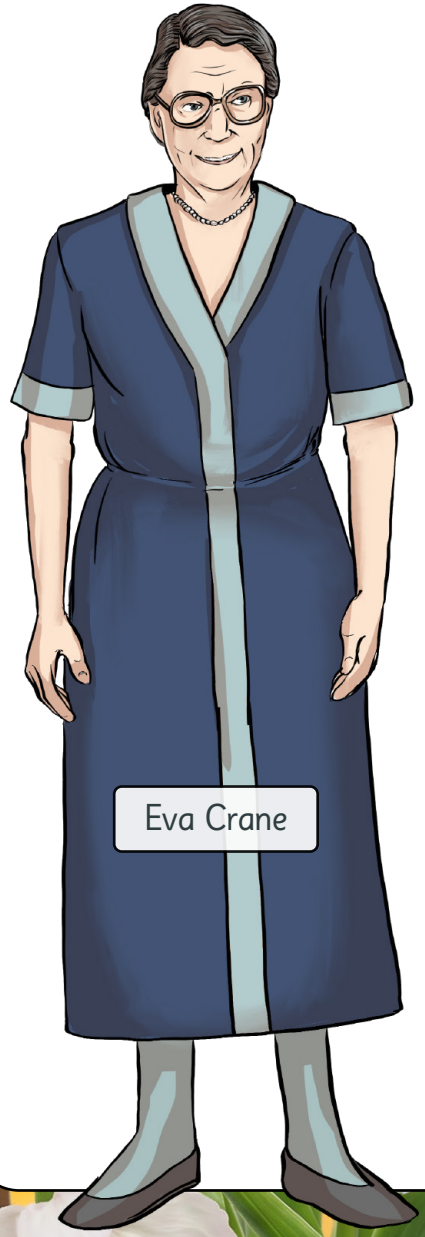
Geographical knowledge

- Locational knowledge
- Place knowledge
- **Human and physical geography** ✓
- Geographical skills and fieldwork

Geographical concepts

- Place
- Space
- Scale
- **Physical and human processes** ✓
- **Interdependence** ✓
- Environmental impact
- Sustainable development
- Cultural awareness and diversity

How can we make our school environment more bee friendly?



Lesson 1: Why are bees important for our planet?

Lesson 2: How can we use an aerial view to identify different land uses in our school?

Lesson 3: How can we use fieldwork to collect data about 'bee-friendly' features in our school?

Lesson 4: What does our fieldwork data tell us about our school environment?

Lesson 5: How can we plan and carry out effective ways to help conserve bees in our school?

Key vocabulary for this lesson



bee – a flying insect that makes honey and helps plants pollinate



crops – plants that people grow to eat or make things with



natural resource – something that comes from the Earth and is used by people and other living things



rely – to depend on something or someone because you need it



survive – to stay alive, even through difficult times

Human and physical geography

Physical and human processes

Human and physical geography



My name is **Florence**, and as a **countryside ranger**, I see every day how much we **rely** on **nature** to **live**.

Bees are an important **natural resource** because they help the **plants grow** that eventually become our **food**. This is a big part of **human geography**, because we use our **land** for **farming** and then trade the food in our shops.

By looking at these tiny workers, we can see how the **physical** world of nature and the **human** world of using the land **rely** on each other.

Let's discuss

Look at each picture. **What different things do you think bees can do?** Discuss this question with your learning partner. Be ready to **share your feedback** with the class **before the answers are revealed**.





Use the following sentence starters to help you:

"Bees can…"
"Bees help by…"
"Sometimes bees…"

Let's discuss

answers



Bees can make **honey**.

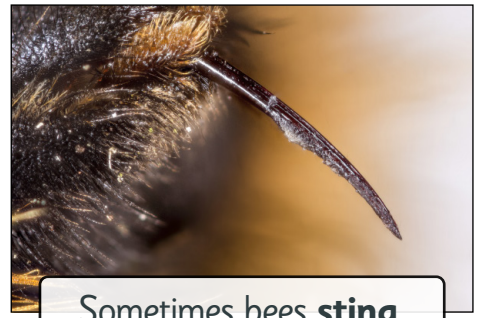




Bees can drink **nectar**.



Bees help by **pollinating** flowers and plants.



Sometimes bees **sting**.

New word alert!



nectar – a sweet liquid produced by the flower of plants

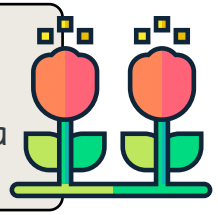
New word alert!

pollen – tiny grains made by the male part of the flower



New word alert!

pollination – this is when the pollen is transferred from the anther to the stigma

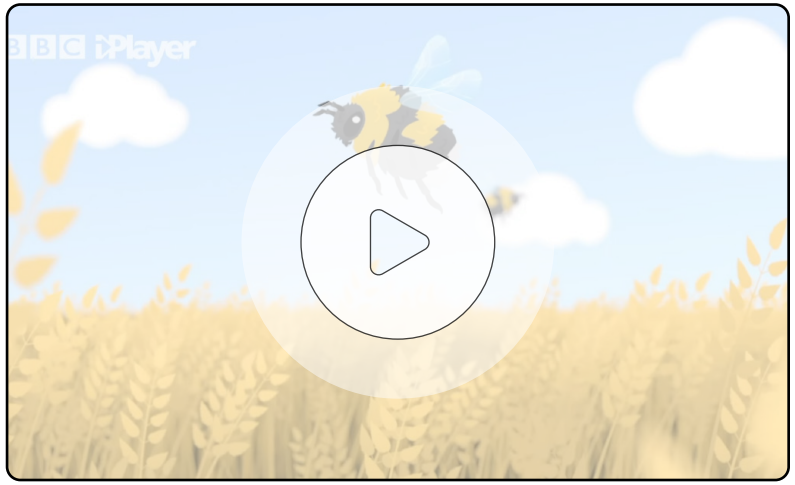


Let's watch

We're going to watch a short **video** showing what **bees** do when they visit ***flowers***.
As you watch, think about this question:

How is the bee helping the flower to pollinate?

youtube.com/watch?v=OxDEO1cVyqg



After watching, **discuss the question** with your learning partner. Be ready to **share your *feedback*** with the class. Use these sentence starters and the word bank to help you:

"The bee visits the *flower* to collect…"
"It carries the pollen to another…"
"This helps the plant to pollinate so that it grows…"

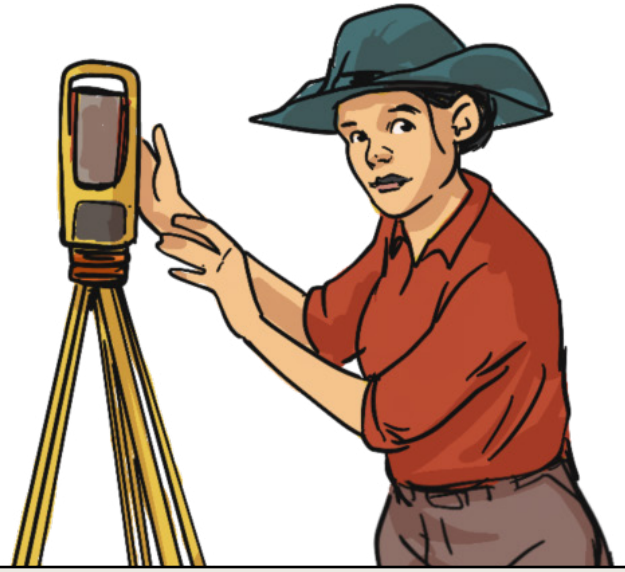
Word bank:

bee **pollen** **pollinate** ***flower*** ***fruit*** **seeds** **plants** **animals** **humans**

Let's watch

answers

The bee visits the flower to collect **pollen**.
It carries the pollen to another **flower**.
This helps the plant to pollinate so that it grows **seeds and fruit**.



Now, let's watch this short **video** showing a **bee pollinating a flower**.

youtube.com/watch?v=jqx1Xx7qqnc



Why do bees matter?



One out of every **three** bites of food that we eat **depends on bees** for **pollination**.

Even **meat** relies on bees, because ***farm animals eat plants***, such as **alfalfa** which bees **pollinate**.



Cows eating **alfalfa** on a farm.

Where in the world do bees live?

Physical and human processes

Interdependence

Did you know there are over **270 different species of bees** in the **UK**, and over **20,000 known species** across the whole **world**?

Bees are found on **every continent except Antarctica**.

Bees everywhere are **helping plants**, **animals** and **people**.

We **rely** on bees, so we need to make sure we look after them and **help them survive**.



What do bees need to survive?

Food (nectar and pollen)

Bees need a variety of colourful flowers to eat from. Different flowers bloom at different times of the year, so they need a constant supply.



Water

Just like us, bees get thirsty! They need safe, shallow places to drink, such as a damp stone or a tiny puddle, so they don't fall in.



Shelter

Bees need "homes" to stay safe from the rain and cold. This could be hives, long grass, hollow wood or even tiny holes in the ground.



Sunshine

Bees are cold-blooded and need the Sun's heat to warm up their wing muscles so they can fly and do their work.



How does the climate affect bees?

Physical and human processes

Interdependence

Environmental impact





Bees can be found in **many parts of the world**. Bees can only live **where flowers grow**, so the **climate is very important**.

The Earth is getting hotter; this is called **climate change**.

Bees like the weather and climate to be just right for them. **Not too hot**, and **not too wet**. They need **warm weather** that is **perfect for flowering plants**.

Let's discuss

Physical and human processes

Interdependence

Discuss the following question with your learning partner.

What do you think happens to bees if the climate is too hot?



Be ready to **share your feedback** with the class **before the answers are revealed**.

Use these sentence starters to help you:

"If the climate is too hot, the bees might…"
"If the weather stays very hot for a long time…"
"This means that bees might…"

Let's discuss

answers

In **cold weather**, many bees **rest** and **stay still** to **save energy**. When the weather **gets warmer in spring**, they **come out of their nests** and **try to find food**.

If the climate is **warmer** than usual in spring, then the bees might **wake up early**. But if the **flowers aren't ready**, then they will go **hungry**.

The **heat** can **dry up flowers**, so bees may not find enough **nectar** and **pollen** to eat. If it stays **very hot** for a long time, then some bees may **die** or have to **move** to **cooler places**.



Bees and our food - UK

Physical and human processes | Interdependence



Hi! My name is **Savas** and I am an **agricultural geographer**. My job is to look at the **relationship** between **people**, **farming** and the **environment**.

Bees do an amazing job for us. When they visit **flowers**, they **pollinate** **fruit** and **vegetable plants**.

This means we can eat foods such as **apples**, **strawberries**, **cucumbers**, **beans** and many more.

Farmers across the **UK rely** on bees to help their crops grow. Without bees, we would have far **less choice of food**, and our plates would look much more **boring**!



A honeybee collecting nectar from a yellow cauliflower flower.

Bees and our food - UK

Physical and human processes

Interdependence



All the **fruits** and **vegetables** in these images are grown in the **UK** and they all need **bees** to **pollinate** them.



Bees and our food – around the world

Physical and human processes

Interdependence



Bees around the world **help to grow lots of our favourite foods**, such as **bananas**, **pineapples**, **oranges** and **cocoa** for chocolate.

These foods are **grown in other countries** and then travel to the UK, so that we can enjoy them.

Without bees, our food shops would look very empty!





More than just food

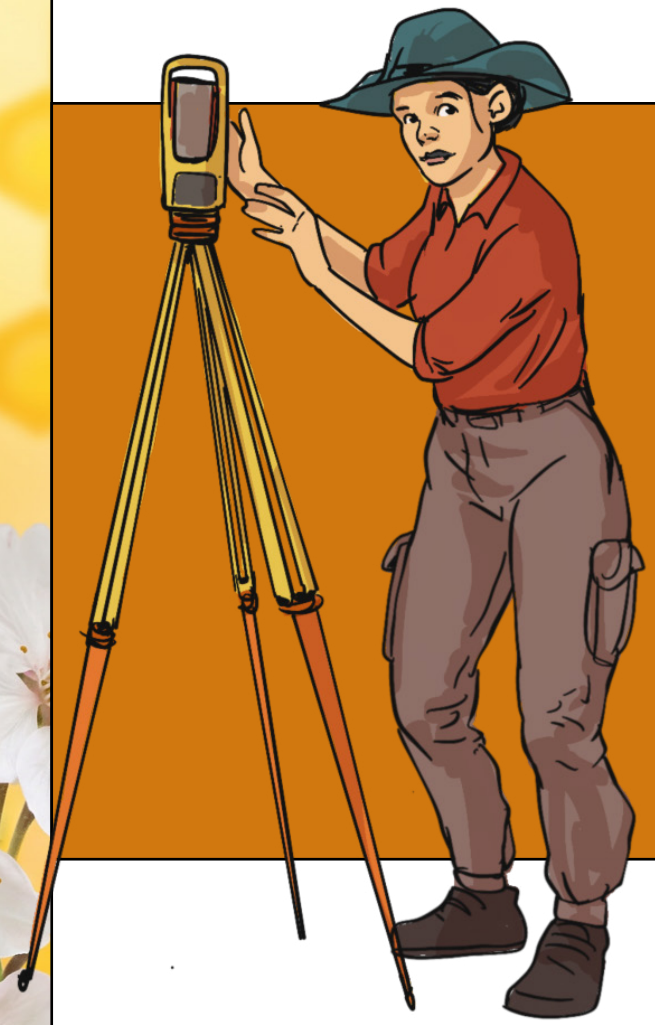
Bees don't just help with food. They also **pollinate cotton for clothes**, **sunflowers for oil**, and **lavender for lovely smells** in soaps and perfumes.



Activity

Physical and human processes

Interdependence



On your **activity worksheet**, order the words to show how **bees help us get food**.

Think of a **meal** you have eaten, **draw** and **label** it.

Then think about how much of the food you ate this week would be **missing without bees**?

List any **foods** that you **could not have eaten** without bees.

Activity

Order the labels to show how bees help us get food.

bee **crop** **humans eat** **flower**

Draw and label a meal that you have eaten this week.

Look at the list of crops that bees help to pollinate.

apples	**cherries**	**pumpkins**	**apricots**
pears	**runner beans**	**courgettes**	**cucumbers**
strawberries	**blackcurrants**	**plums**	**chillis**
raspberries	**peas**	**blueberries**	**peppers**
banana	**orange**	**pineapple**	**cocoa** (chocolate)

How much of the food you ate this week would be missing without bees?

List any foods that you **could not have eaten without bees** below.

www.grammarsaurus.co.uk

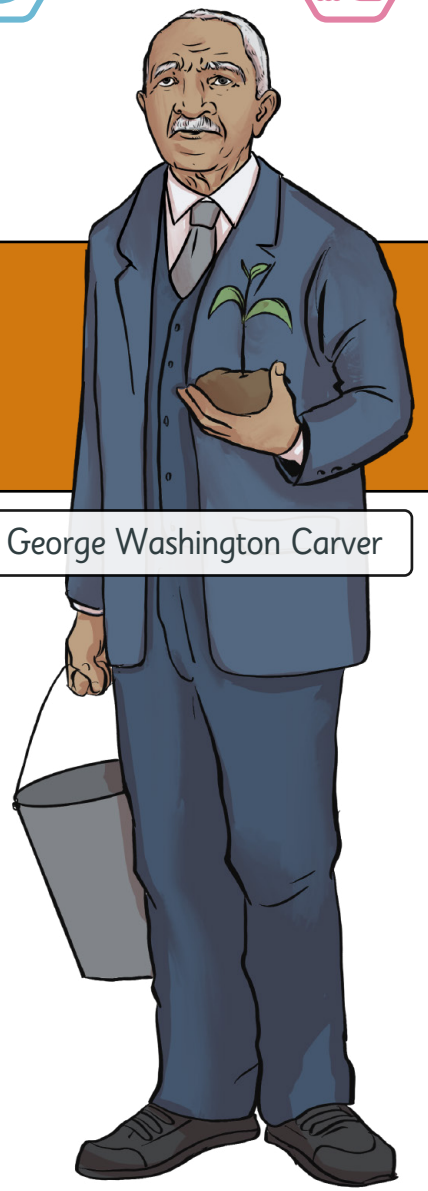
Challenge

Physical and human processes

Interdependence

Discuss the following question with your learning partner.

What if there were no more bees?



Be ready to **share your feedback** with the class **before the answers are revealed**.

Use these sentence starters to help you:

"If bees were gone, life for animals would…"
"Without bees, farmers would find it hard to…"
"In the shops, people might notice…"
"Countries that trade food would…"
"Our world would change because…"

Challenge answers

Physical and human processes

Interdependence

You might have said:

If bees were gone, life for animals would be harder because many plants they eat wouldn't grow.

Without bees, farmers would find it hard to grow fruits, vegetables and other crops that need pollination.

In the shops, people might notice fewer fruits, vegetables, nuts and foods that come from pollinated plants.

Countries that trade food would struggle because there would be less produce to sell and share with other countries.

Our world would change because plants, animals and people all rely on bees to help grow food and other resources.

