

# CUSP Science

**Year 2**  
**Biology**  
**Animals, including humans**

# Lesson 1

## Learning question

What is an animal?



# Connect

Sort these images and statements into the table below.  
Some statements go in more than one column.

warm-blooded

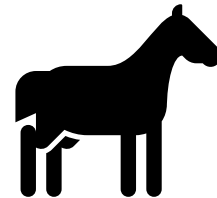
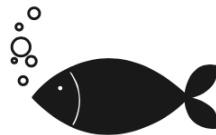
breathes underwater

lays soft eggs

cold-blooded

lays hard-shelled eggs

Reptile	Bird	Fish	Mammal	Amphibian





# Vocabulary

A snake is a *vertebrate*.

*Vertebrate*. That is an interesting word. I want to understand what it means.

ver-te-brate – vertebrate

A vertebrate is an animal with a backbone.

I know dinosaurs were vertebrates as we have discovered their fossilised skeletons.

Vertebrate is a word I might use when sorting (classifying) animals.

The word vertebrate comes from the Latin word *vertebra* which means bone of the spine.  
This Latin word is still used today to name the bones that form a backbone.

Read, hear, say



Define



Apply



Connect



Analyse

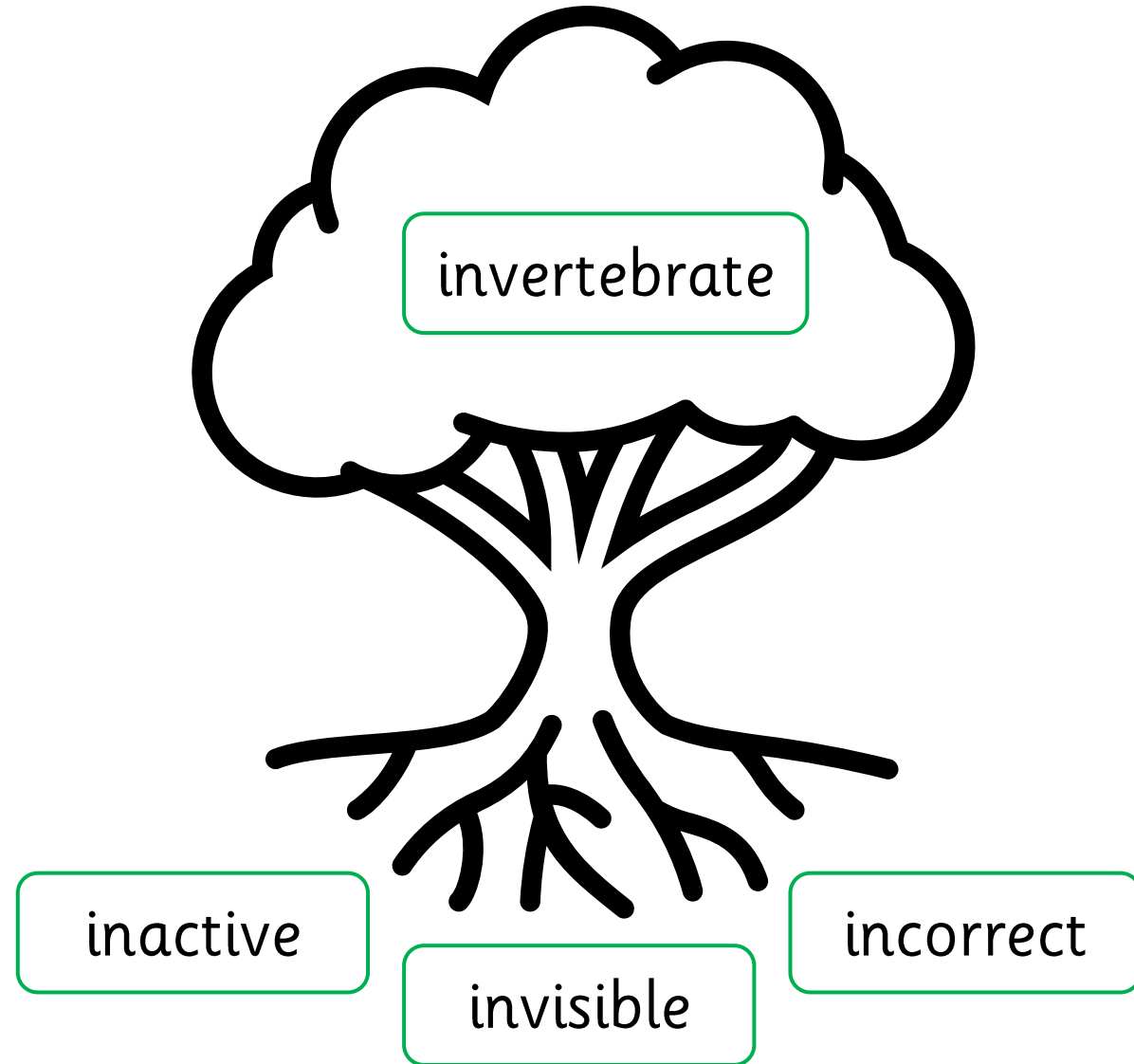


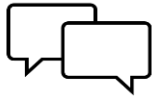


# Vocabulary

The prefix *in-* means  
not.

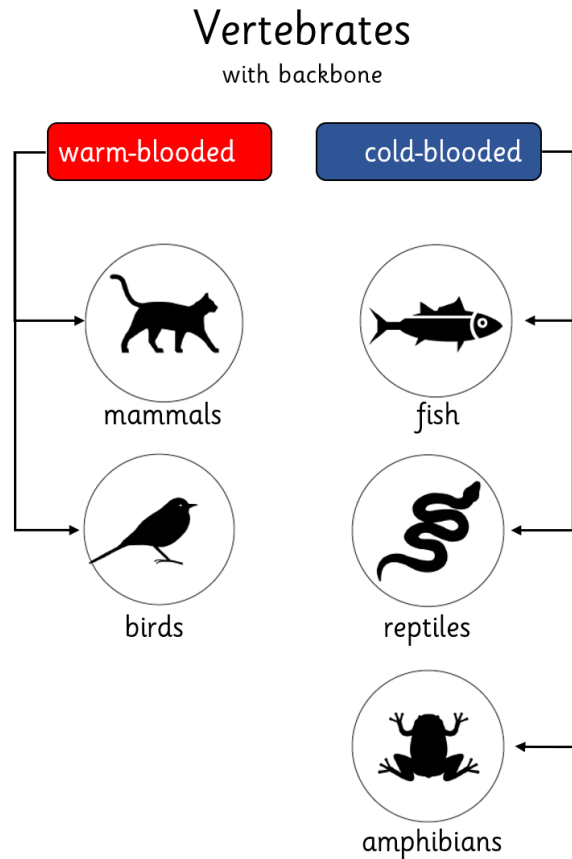
How does that help me  
understand the  
meaning of *inactive*,  
*invisible* and *incorrect*?





# Explain

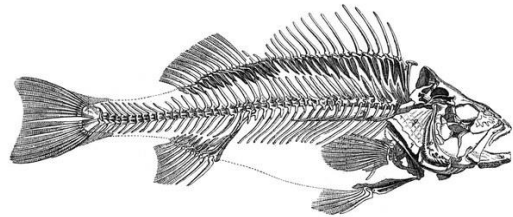
All animals can be classified (sorted) into two groups: vertebrates or invertebrates.



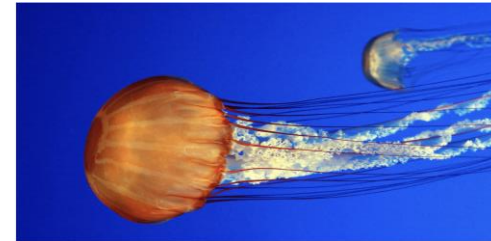


# Example

A fish is a vertebrate. It has a backbone.



A jellyfish is an invertebrate. It has no backbone.





# Attempt

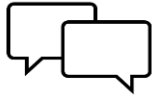
Sort these animals into vertebrates or invertebrates.

**vertebrates**










**invertebrates**





# Explain

All animals (both vertebrates and invertebrates) exhibit all these features.

	movement
	respiration
	sensitivity
	growth
	reproduction
	excretion
	nutrition

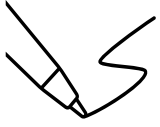
Use **Mrs Gren** to remember these.



# Attempt

Complete the table below.

Life process	Explanation
<b>M</b> ovement	
<b>r</b>	Animals release energy from their food by respiration.
<b>s</b>	Animals can detect and respond to changes in their surroundings.
<b>G</b> rowth	
<b>r</b>	Animals produce offspring.
<b>e</b> xcretion	
<b>n</b>	Animals eat food for nutrients and energy.



# Apply

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.



# Challenge

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.

# Lesson 2

## Learning question

How do animals change as they mature?



# Connect

Match the adult name to the name of its offspring.

pig

horse

whale

bird

deer

lion

fawn

calf

cub

piglet

chick

foal



# Vocabulary

How do animals change as they *mature*?

*Mature*. That is an interesting word. I want to understand what it means.

ma-ture – mature

Mature means become fully grown or developed.

I can't wait to see what this sapling will look like as a mature tree.

Mature is a word I might use when talking about growing up or even describing grown-up behaviour. Sometimes, mature can describe food that has fully developed its flavour, for example cheese.

The word mature comes from the Latin word *maturus* which means ripe.

Read, hear, say



Define



Apply



Connect



Analyse





# Vocabulary

Which sentence below uses the word **offspring** correctly?

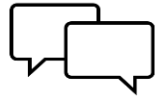
1. The owl was exhausted after hunting for food for its **offspring**.
2. The gymnast used an **offspring** to jump onto the beam.

Draw an image to show what offspring means.



**Challenge:** use the word **offspring** correctly in your own sentence.





# Explain

- Animals reproduce and have offspring which grow into adults.



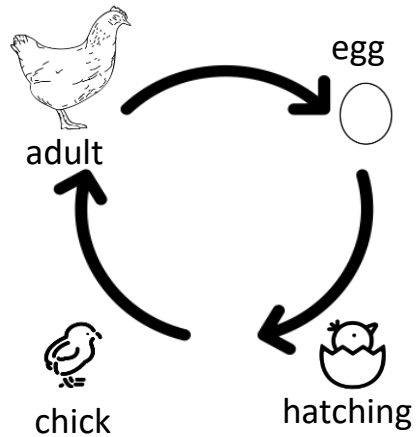
- Sometimes, offspring look like their parents but sometimes they look different.



- How they grow and change is dependent on the type of animal.



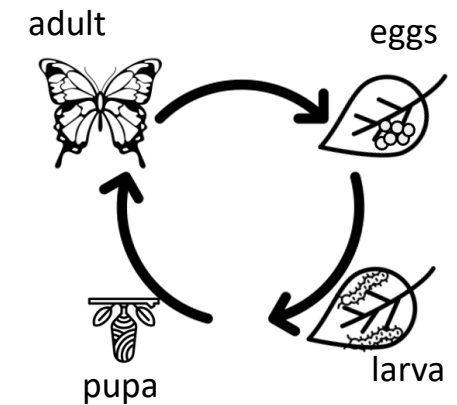
# Example



Birds and many reptiles lay eggs, which hatch when developed. The offspring will grow and change until they mature.



Mammals give birth to live young. Although smaller than the parent, they look the same.

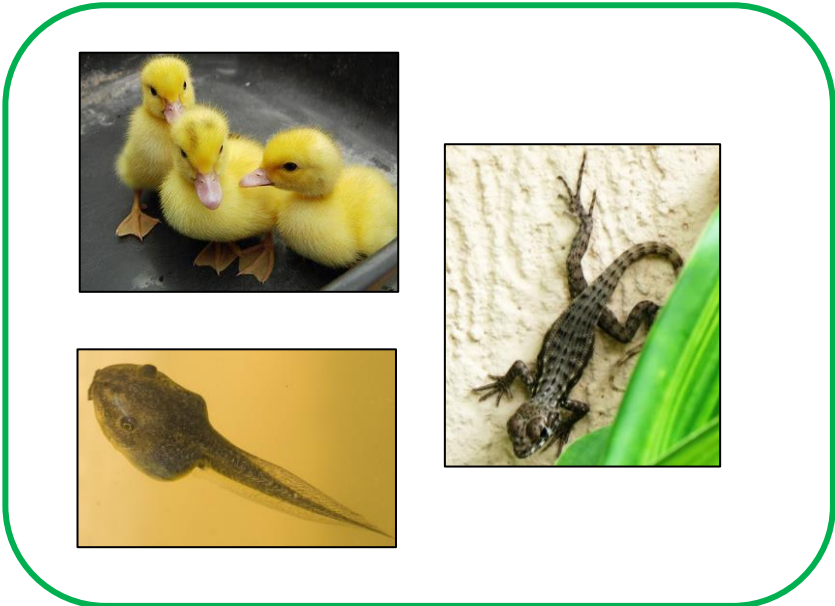


Insect and amphibian offspring look different from their parents. The process of change for these animals is called metamorphosis.

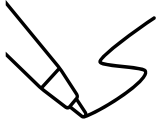


# Attempt

Here are some baby animals sorted into two groups.  
What could the criteria (reason) be for each group?



Add another animal to each group.



# Apply

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.



# Challenge

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.

# Lesson 3

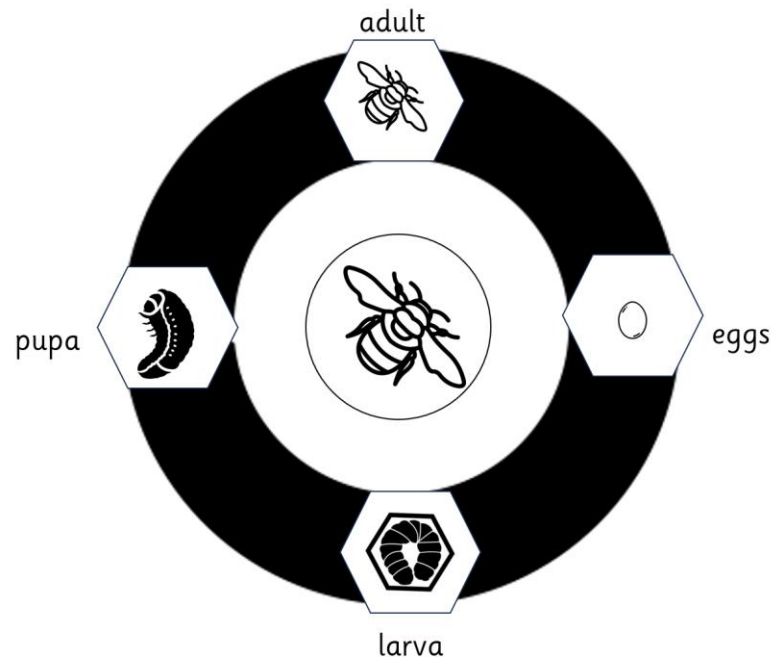
## Learning question

How do we change as we mature?



# Connect

Write a sentence to explain how bees change as they grow.



Can you name another animal that grows in this way?



# Vocabulary

Read, hear, say



The teacher encouraged his class to be *independent* learners.

*Independent*. That is an interesting word. I want to understand what it means.

in-de-pend-ent – independent

Define



Independent means not relying on another for help. It can also mean not connected or influenced by anything.

Apply



A baby turtle has to be independent as soon as it hatches.

Connect



Independent is a word I use when referring to being able to do things by myself without any help.

Analyse



The prefix *in-* means not, so I know the opposite to independent is dependent.



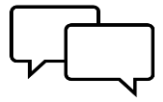


# Vocabulary

Complete the table.

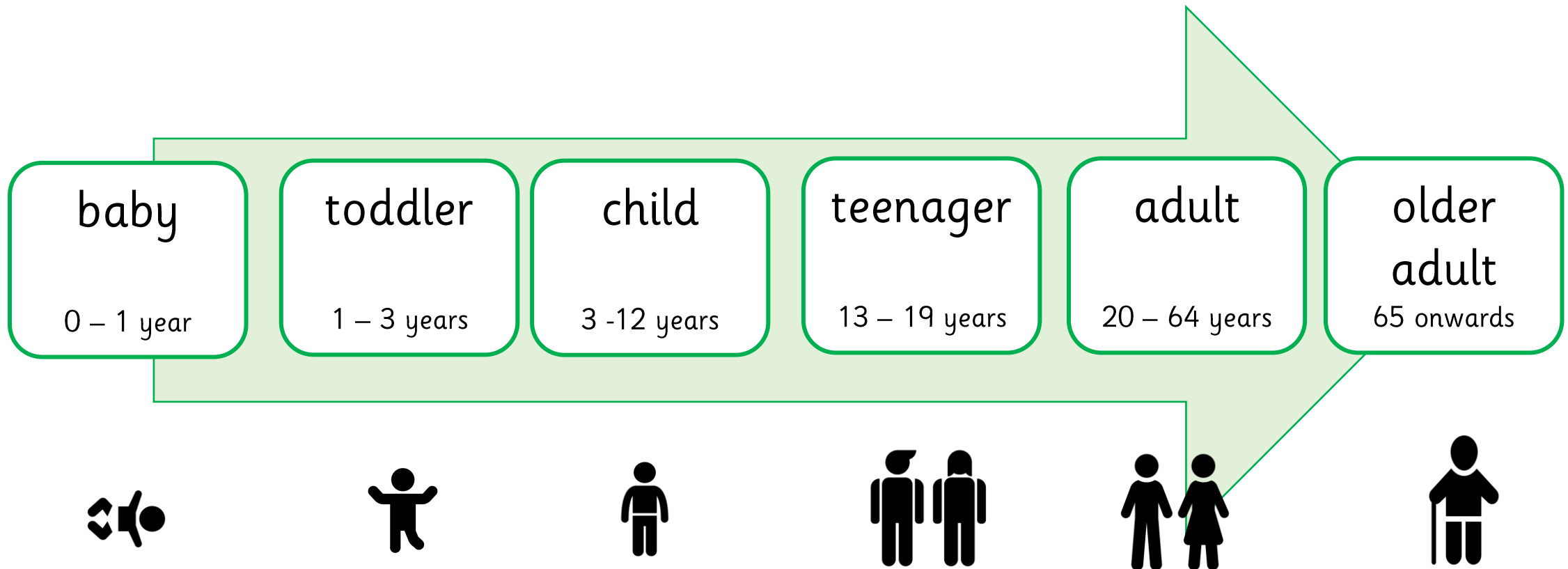
<p><b><u>Define</u></b></p> <p>Independent means not relying on another person for help.</p>	<p><b><u>Use</u></b></p>
<p><b><u>Connect</u></b></p>	<p><b><u>Analyse</u></b></p>

**independent**



# Explain

Human development is divided into different stages.





# Example

A human **baby** is born with everything it needs.



However, it will take several years of development before it is independent.

A baby depends on an adult to feed it and keep it warm, clean and safe.



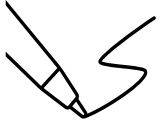
# Attempt

This is a **toddler**.



What can a toddler do now that it could not do as a baby?

Is a toddler independent? Explain your reasons.



# Apply

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.



# Challenge

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.

# Lesson 4

## Learning question

What do all animals need to stay alive?



# Connect

Match the activity with the correct stage of human development.

baby

toddler

child

teenager

adult

go to college

go to school

have a job

learn to jump

learn to crawl





# Vocabulary

Read, hear, say



Define



Apply



Connect



Analyse



Plants *absorb* nutrients from the soil.

*Absorb*. That is an interesting word. I want to understand what it means.

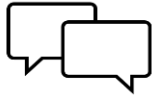
ab-sorb – absorb

Absorb means to take in or soak up.

A sponge will absorb water quickly when dropped in the bath.

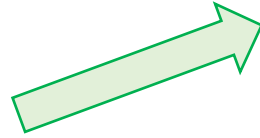
Absorb is a word I would use when I am talking about cleaning up a liquid mess. I might use it in science when looking at properties of materials.

If you add the suffix *-ent* you get absorbent. This is the word I will use when describing the property of a materials that can take up liquids.



# Explain

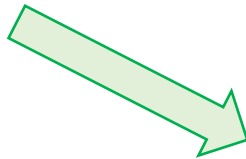
Animals need food, oxygen and water to stay alive.



Most of an animal's body is made of water. Most processes in the body involve water, e.g. excretion.



Animals cannot make their own food. Food is essential to provide energy.



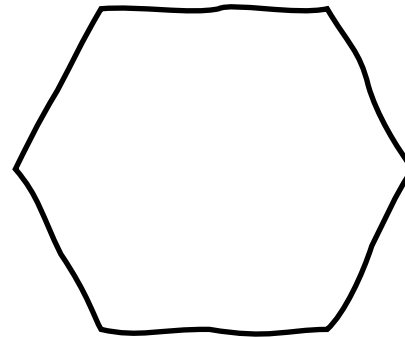
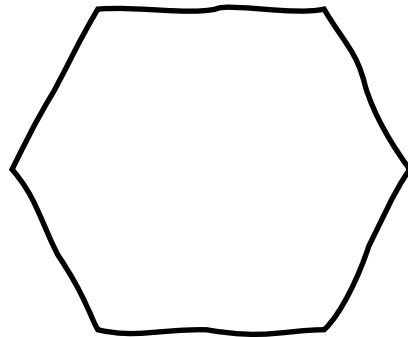
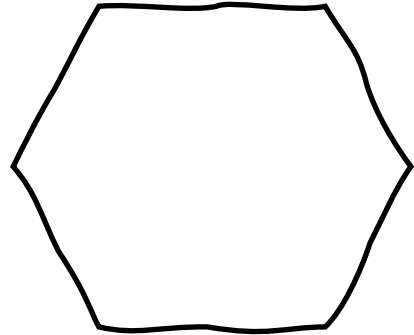
All animals need oxygen. Land-based animals get this from the air and water-based animals get it from the water.





# Vocabulary

oxygen



breathe

Connect the two words above by building a 'pathway' of other words.



# Example

A frog is a very special animal.

- It can absorb the water it needs through its skin.
- When it is a tadpole, it gets the oxygen it needs from the water.
- As a frog matures, it grows lungs and gets its oxygen from the air.
- As a tadpole, it is a herbivore, eating algae. As an adult it is a carnivore, eating insects.



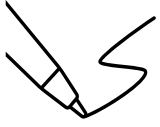


# Attempt

Let's compare how goldfish and pigs stay alive.



1. How do they get the water they need?
2. How do they get the oxygen they need?
3. Which is the herbivore and which is the omnivore?  
Explain your reasons.



# Apply

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.



# Challenge

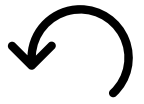
Teachers: select a task from the Thinking Tasks suitable for your cohort and context.

# Lesson 5

## Learning question

Keeping healthy: why do we exercise?





# Connect

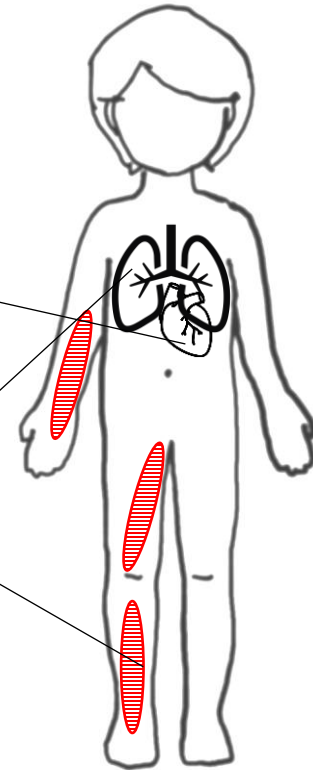
Have these body parts been labelled correctly?

What would you change?

lungs

heart

muscles





# Vocabulary

Why do we *exercise*?

*Exercise*. That is an interesting word. I want to understand what it means.

ex-er-cise – exercise

Exercise is an activity that requires physical effort.

The vet recommended that the dog got more exercise to help strengthen his leg.

I might use this word when talking about physical activity and keeping fit. In school, this word is sometimes used to describe an activity that supports my learning.

Read, hear, say



Define

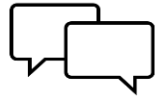


Apply



Connect



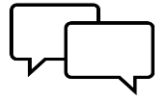


# Explain

To keep healthy, we need to exercise. Regular exercise:

- increases the amount of oxygen our lungs can take from the air
- strengthens our heart
- strengthens our muscles
- helps maintain a healthy weight
- improves our mental wellbeing.

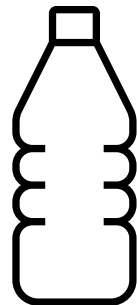




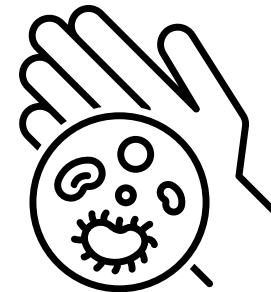
# Explain

To keep healthy, we also need to drink water and have good hygiene.

Remember – most of an animal's body is made of water. Also, most processes in the body use water, e.g. excretion.



Personal hygiene is how we look after our bodies. Keeping ourselves clean prevents us from getting sick or spreading germs to others.





# Example

Washing our hands after the toilet and before touching food reduces germs spreading and keeps us healthy.



wet



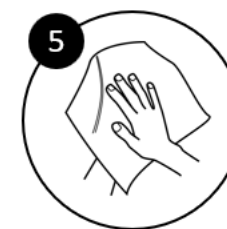
lather



scrub



rinse

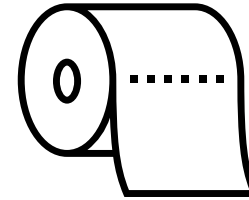


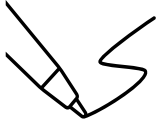
dry



# Attempt

What other things should be included in personal hygiene?






# Apply

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.



# Vocabulary

OWN-it	Analyse 
<p>Tick the part of the word <i>hygienic</i> that means <i>relating to</i>.</p> <p><input type="checkbox"/> hygie</p> <p><input type="checkbox"/> ic</p>	
<p>Underline the part of the word below that means <i>change</i>.</p> <p style="text-align: center;"><i>metamorphosis</i></p>	
<p>What does the prefix <i>in</i> mean?</p>	





# Challenge

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.

# Lesson 6

## Learning question

Keeping healthy: why do we eat different types of food?



# Connect

Label each bullet point with a tick ✓ if it is true, or a cross ✗ if it is false.



When you exercise ...

- your body gets colder.

- your heart beats faster.

- your breathing gets slower.





# Vocabulary

We need to eat a *varied* and balanced diet to keep healthy.

*Varied*. That is an interesting word. I want to understand what it means.

va-ried – varied

Varied means different types of something.

The art corner had a varied set of shapes to trace around.

Varied is a word I might use when I describe things of different types, sizes or qualities.

The word *varied* comes from *vary* which means to change or alter.

Read, hear, say



Define



Apply



Connect




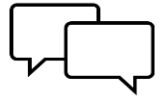
Analyse





# Vocabulary

LINK-it	Connect 
<p>Circle the word that means the same as <i>healthy</i>.</p> <p style="text-align: center;">fast                      fit</p>	
<p>Write a word meaning the opposite of <i>vertebrates</i>.</p>	
<p>List two words linked to the topic <i>heart</i>.</p> <p>1.</p> <p>2.</p>	



# Explain

Another important part of keeping healthy is to eat a varied and balanced diet.

Food is divided into groups and each group does a different job in your body:

- meat, fish, eggs and dairy help us grow
- wheat and corn give us energy
- fruit and vegetables give us lots of nutrients.





# Example



To keep healthy, we need to eat different amounts of each food group.

- Fruit, vegetables, wheat and corn make up the biggest part of our diet.
- Meat, fish, dairy and pulses are eaten in smaller quantities.
- A small amount of fat and sugar is also needed.



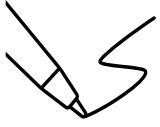
# Attempt

This platter is meant to show a varied and balanced diet.

The images have got mixed up. What do we need to change?







# Apply

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.



# Challenge

Teachers: select a task from the Thinking Tasks suitable for your cohort and context.