

Awesome Offspring to Healthy Adults



REGENT STUDIESns

Focused education on life's walk

**Awesome
Offspring**
to
**Healthy
Adults**



Meet the Discovery Squad

Harry, Aisha, Blake, Holly and Riz are all great friends. They love to play, laugh and learn about the world together. Whatever the topic, if there are questions to be asked, answers to find or exploring to be done, the Discovery Squad is there to help. Join them as they find out more about animals including humans in this non-fiction eBook.

Harry

Aisha

Blake

Holly

Riz



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Awesome Animals

What do all animals have in common?

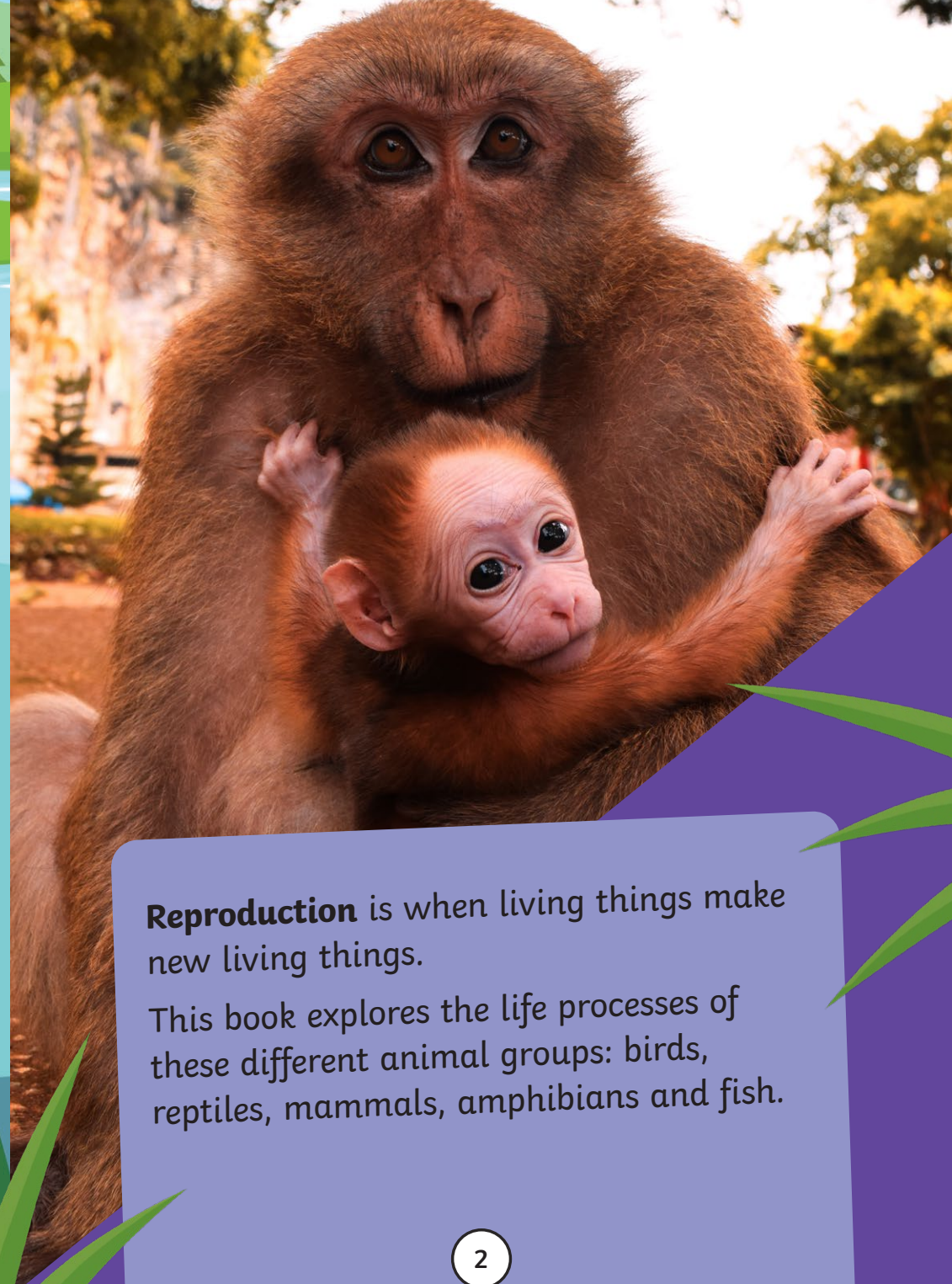
Animals, and all living things, do certain things to stay alive. These are called life processes.

Some examples of life processes include:

having
offspring

taking in
nutrients

growing



Reproduction is when living things make new living things.

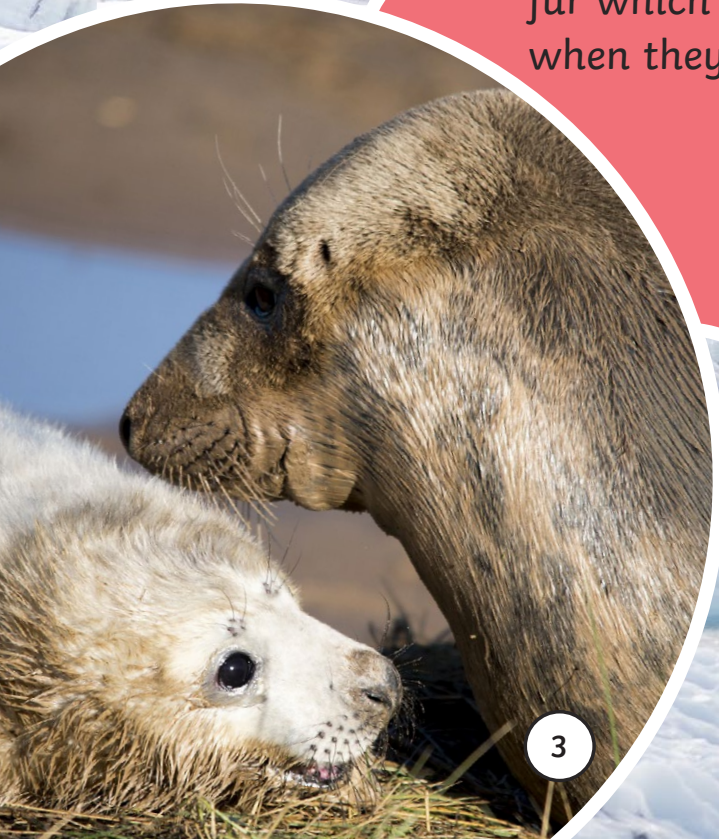
This book explores the life processes of these different animal groups: birds, reptiles, mammals, amphibians and fish.

Beautiful Babies

Do all animal offspring look like their adult when they are born?

Some **offspring** look like their parent when they are born, but some look very different.

Grey seals have a brown-grey coat of fur which is white when they are born.



3

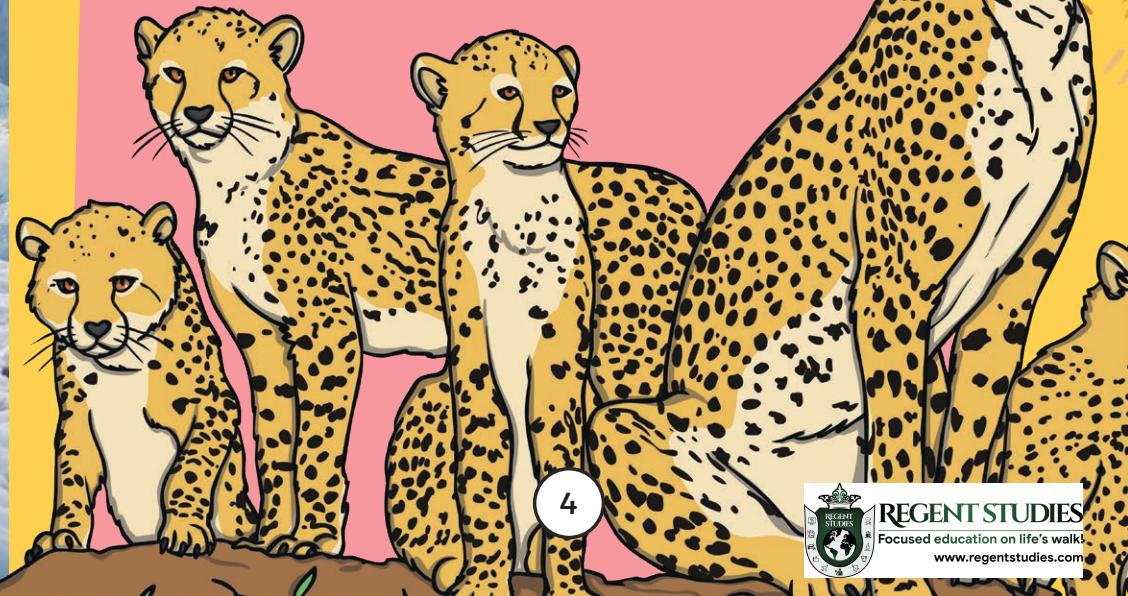
When tapirs are born, they have unusual markings which they lose as they grow up.



Live Young

Some animals give birth to **live young**. These babies are much smaller than the parent.

Although they may be a different colour, or have a different **body covering** when they are first born, often **live young** do look like the **adult** animal.



4

Some animals lay eggs which hatch into **offspring**. Some of these babies look like their **adult** when they hatch but some look very different.



Tiny bog turtle **young** are only about 2.5cm long when they hatch from their eggs. **Adults** can grow to about 10cm long.



Swans are white but baby swans (cygnets) are a greyish colour when they are born.

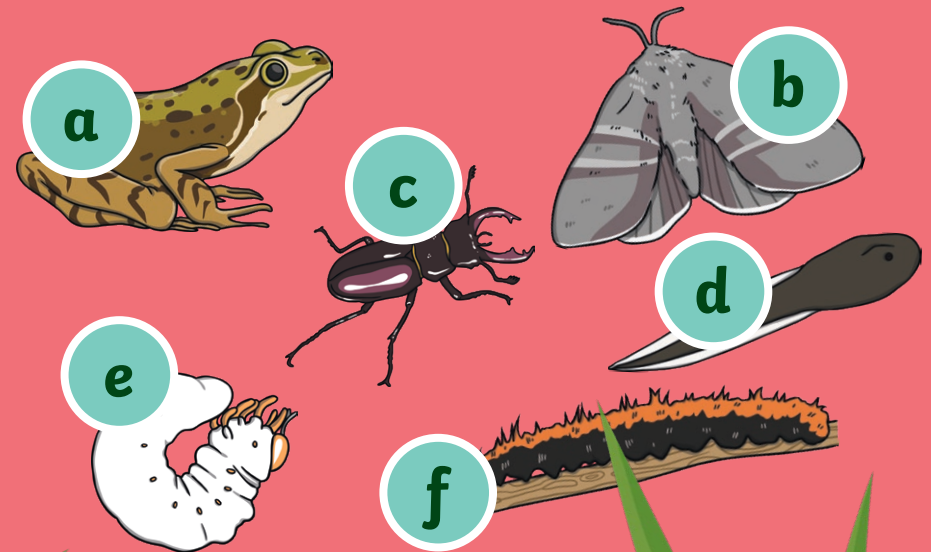
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Offspring That Do Not Look Like Their Adult

Some animals look totally different to their **adult** when they are born and must go through many big changes to finally look like the grown-up animal. This process is called **metamorphosis**.

Find out more about this in the section called 'Life Cycles'.

Here are the **adults** and **offspring** of a frog, a moth and a stag beetle. Can you match the **adults** to the correct **offspring**? The answers are found at the side of this page.



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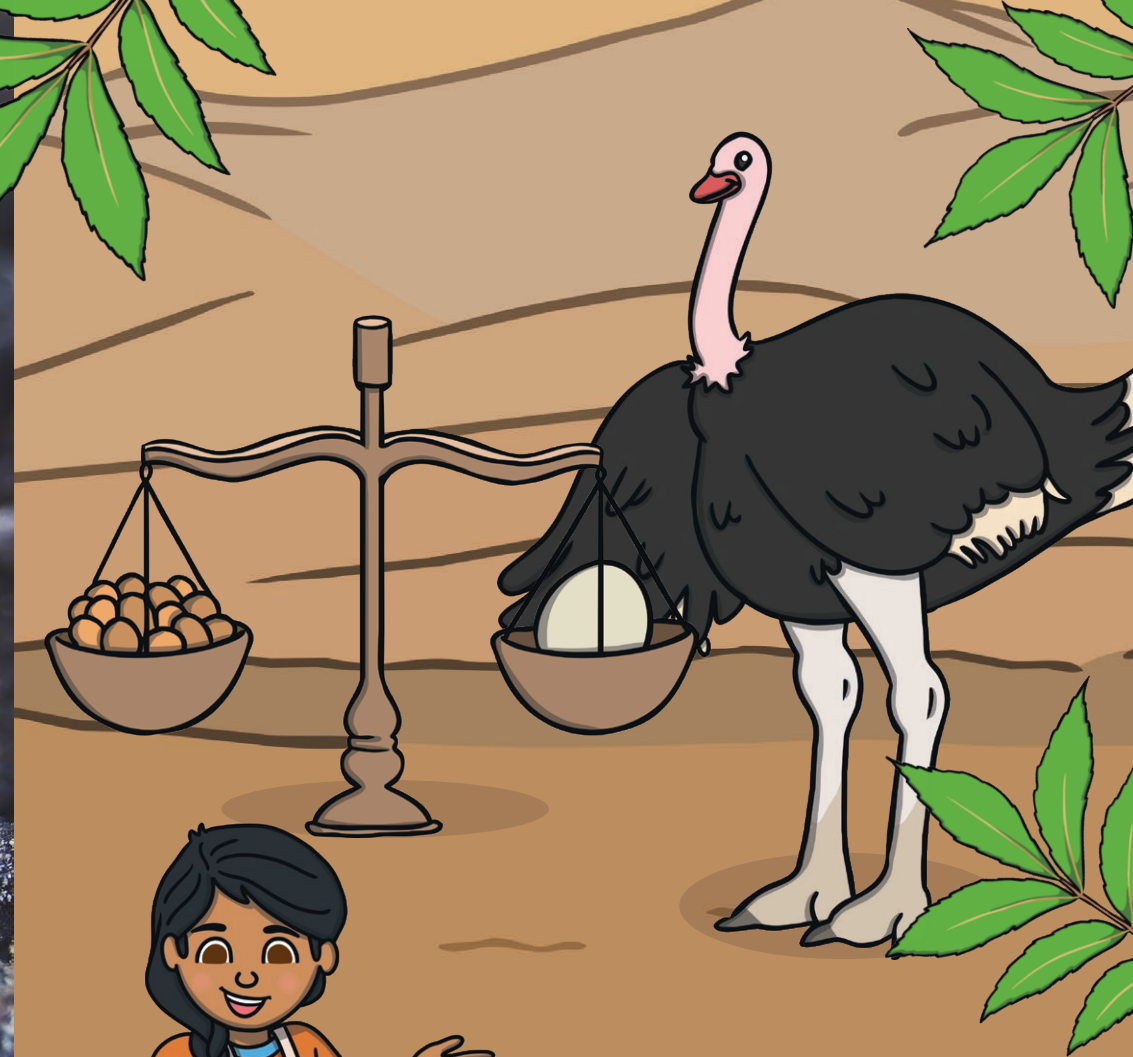
Excellent Egg Facts

The African driver ant can lay between three and four million eggs every 25 days! This little insect is thought to lay more eggs than any other animal in the world.



Research It!

Use the internet and non-fiction books to discover more excellent egg facts for yourself. Can you find out which animal lays the world's smallest egg or how many eggs a rattlesnake lays? What else can you discover?



Did you
know

?

The world's biggest egg was laid by an ostrich in Sweden in 2008. It weighed 2.5kg. This is the same weight as about 50 chicken eggs!

Mammals

What are mammal offspring like?

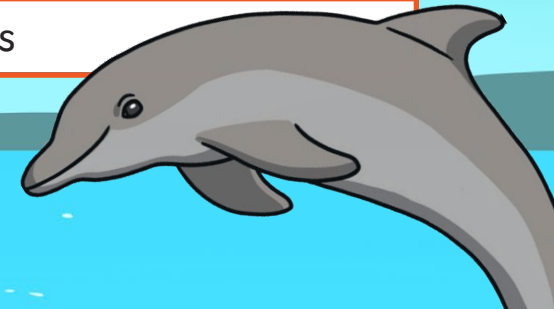
Baby mammals grow inside their mother's body until they are ready to be born. Mammals give birth to **live young** that often look just like them, only smaller. Sometimes, their **body covering** might be different in colour, pattern or feel.

Echidnas and platypus are mammals but they lay eggs rather than giving birth to **live young**.



Different animals take different lengths of time to grow inside their mother before they are born. What do you notice about the mammal examples below?

Hamster	16 days (but varies with type)
Sheep	5 months
Human	9 months
Dolphin	12 months (1 year)
Elephant	22 months



Did you
know



Although dolphins and whales seem like fish, they are actually mammals. They come to the surface to breathe air through a **blowhole** and give birth to **live young**.

Reptiles

What are reptile offspring like?

Most reptiles lay eggs but some give birth to **live young**. Reptiles lay their eggs on dry land. The female builds a nest to lay her eggs in. Some reptiles stay with the eggs until they are ready to hatch but some leave them.

When the eggs hatch, the **hatchlings** often look like their parent but they are much smaller.



a crocodile **hatchling**

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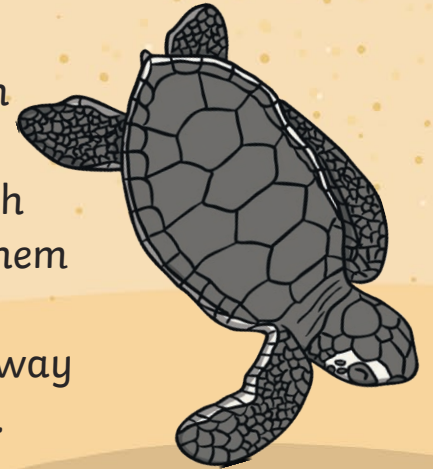
Did you know

?



Rattlesnakes don't lay eggs. Instead, they give birth to **live young**. The **offspring** are about 25cm long but **adults** can grow to over two metres long!

Sea turtles lay their eggs on beaches. After laying their eggs and covering them with sand, female turtles leave them and return to the sea. The **hatchlings** must find their way to the sea when they hatch.



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Birds

What are bird offspring like?

Female birds lay eggs that hatch into **hatchlings**. Most male and female birds take it in turns to **incubate** the egg.

The **hatchlings** usually look similar to their **adult**, only smaller. Some baby birds can be a different colour to their adult and their **body covering** may change as they grow up.



In the harsh Antarctic environment, male emperor penguins look after the eggs and keep them warm. They put the egg on their feet and cover it with a 'brood pouch', a special layer of feathery skin.



Did you know



Baby flamingos are born with grey or white feathers. It can take two years for them to turn a proud pink!



Do you recognise these baby birds?
Which adult do they grow into?



owl



eagle



duck

Fish

What are fish offspring like?

Most fish lay eggs. Female fish lay eggs (called roe) in water. They can lay anywhere from one hundred to one thousand eggs. Not all of these eggs will grow into babies.

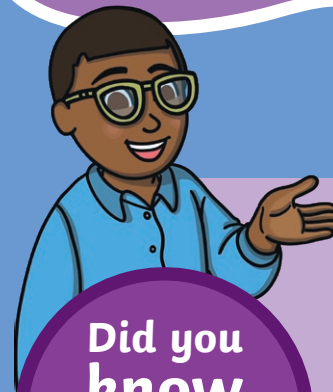
When the **offspring** hatch out of the eggs, they are known as **larvae**. Fish **larvae** do not look like their **adult**.

Look at how different the cod **larvae** and **adult** cod are!



fish roe

Why do you think jellyfish and crayfish have the word 'fish' in their name?



Did you know

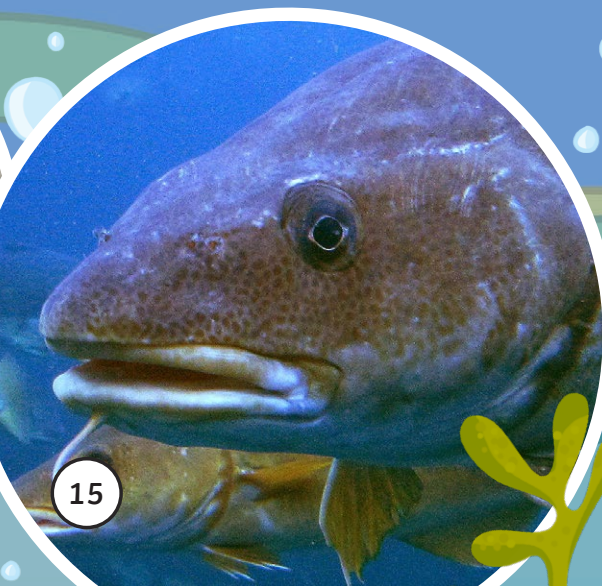
?

Although jellyfish and crayfish have the word 'fish' in their name, they aren't actually fish. This is because they do not have a backbone like all fish have.

Some sharks give birth to **live young**. However, all sharks are classed as fish, not mammals. This is because they breathe with gills, not **blowholes** like whales and dolphins.



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Amphibians

What are amphibian offspring like?

Most amphibians lay their eggs in water. These eggs are also known as spawn. Most amphibians produce **larvae** which hatch from these eggs and do not look like their **adult**. The **larvae** then go through a series of big changes until they do. This is called **metamorphosis**.



Have you ever seen tadpoles (frog **larvae**)?
How do they change to become an **adult** frog?

17



Did you
know

?

Some amphibians have their **offspring** on dry land. They either lay their eggs on land which hatch into **young**, or give birth to **live young**.

Newts can lay up to 300 eggs which hatch after two to three weeks.



Strawberry poison dart frogs lay their eggs on land.

Fire salamanders give birth to **live young**.



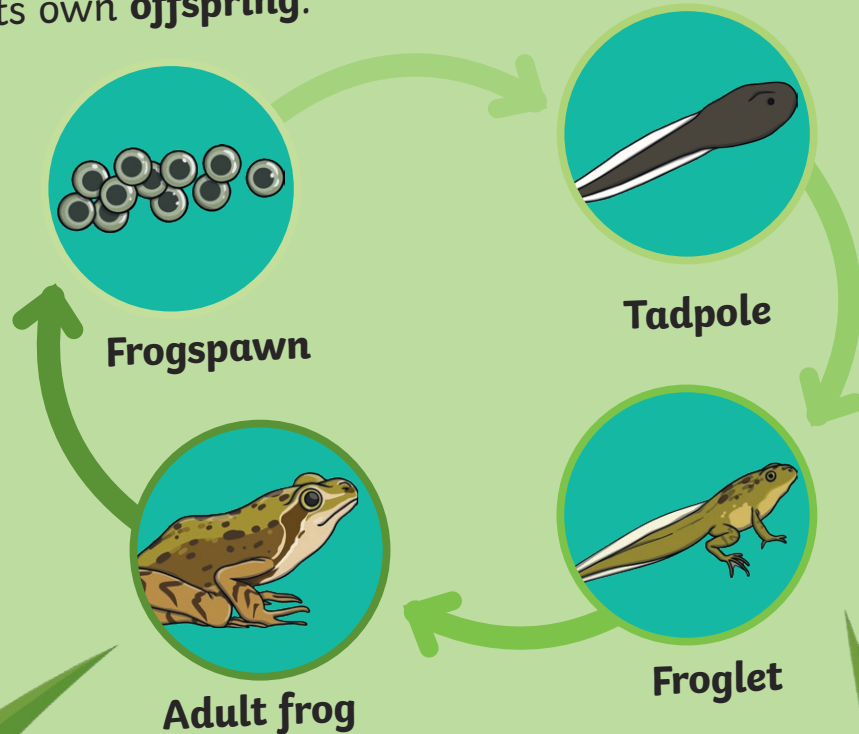
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Life Cycles

How do animals change as they develop?

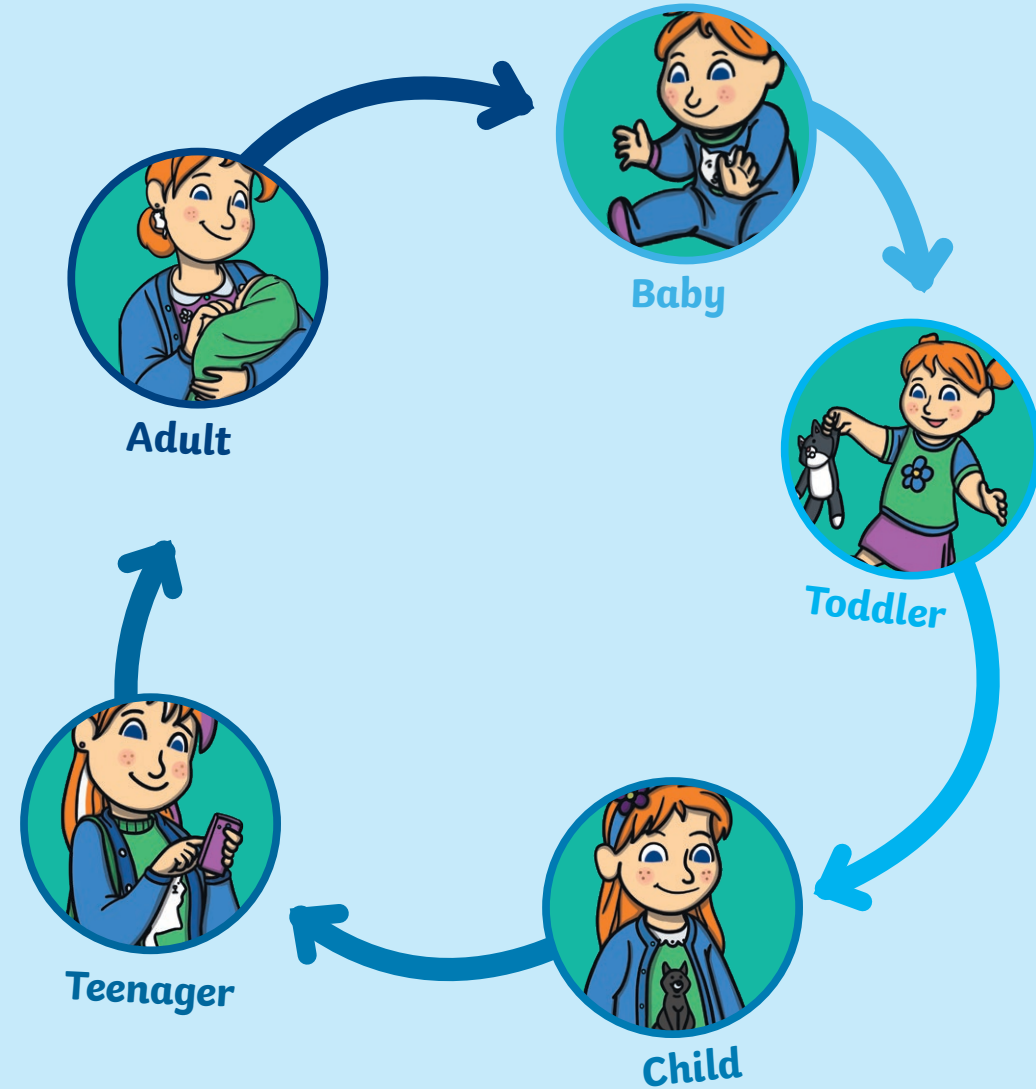
All **young** animals change in stages as they grow into **adults**, but different animals change in different ways.

A life cycle diagram shows us the changes that a living thing goes through in their life. The cycle then starts again if the **adult** animal has its own **offspring**.



Human Life Cycle

Mammals, such as humans, get bigger and stronger as they get older.



Human Life Cycle

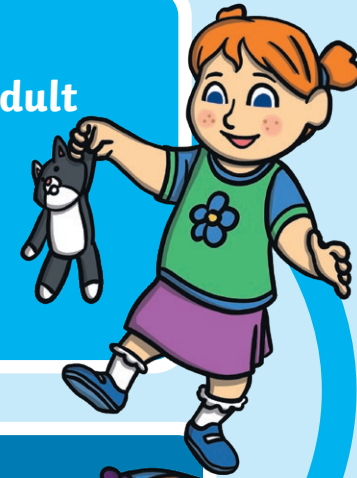
1 Babies

Babies need **adult** care and can't look after themselves. During their first year they change a lot. At first, babies feed on milk, communicate by crying and don't move a lot. As they grow bigger, they may start to move more, sometimes by crawling. They may also begin to eat solid foods and start the early stages of talking.



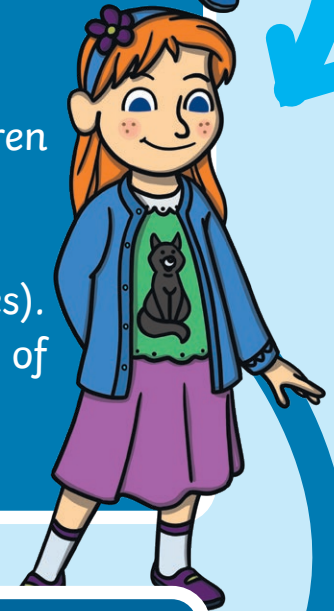
2 Toddler

Toddlers still need lots of **adult** care but they may start to become more **independent**. They may also learn to walk, run and talk more.



3 Child

Humans continue to grow throughout childhood. Children still need **adult** care but they may do more things **independently** (by themselves). They may begin to learn lots of new skills, like reading and writing.



4 Teenager

Teenagers are very nearly **adults**. Their bodies can change a lot and they may nearly be fully **independent**.



5 Adult

Adults are fully grown and most can take care of themselves. They now may be able to have their own children.



Duck Life Cycle

Ducks and other birds grow bigger and stronger as they grow. They often change colour as they become **adults**.

1

Egg

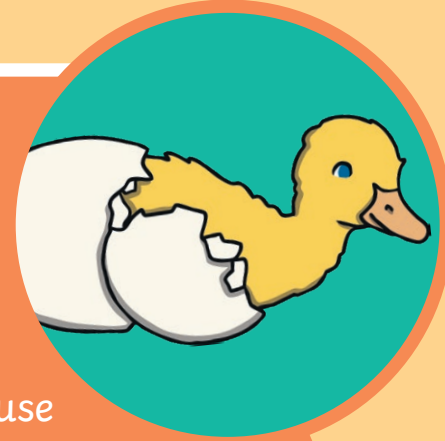
The female duck makes her nest near water. She lays her eggs and **incubates** them for about 28 days.



2

Hatchling

The **hatchlings** have wet feathers so stay in the nest to dry off and be kept safe and warm. They start to use their legs.



3

Duckling

The ducklings, led by their mother, go to the water to drink and find food. They stay close to their mother to keep safe.



4

Adult Duck

When they are about two months old, ducks develop **waterproof** feathers, start to fly and can look after themselves. Female **adult** ducks can now have eggs of their own.



23

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Butterfly Life Cycle

Butterflies and other insects are another type of animal that go through **metamorphosis** to reach adulthood.

1

Egg

Female butterflies lay their eggs, often on the underside of a leaf.



2

Larva

Larvae, known as caterpillars, hatch out of the eggs. They start eating as soon as they hatch and grow very quickly. Their skin doesn't stretch so they **shed** it instead.



3

Pupa

When the caterpillar has reached its full size, it forms a case around itself called a **chrysalis**. The caterpillar is now called the **pupa**. This stage is when the amazing process of **metamorphosis** happens!

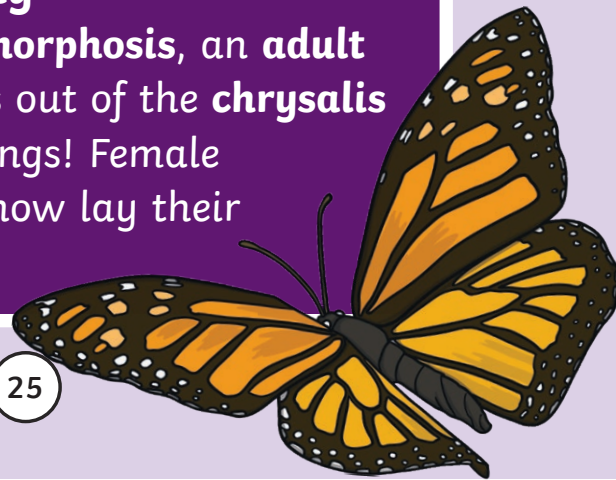


4

Adult Butterfly

After the **metamorphosis**, an **adult** butterfly crawls out of the **chrysalis** with its new wings! Female butterflies can now lay their own eggs.

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Did you know ?

?

The life cycle of a monarch butterfly is very short. They only live for two to six weeks so the **adult** butterfly will want to lay eggs as quickly as possible.

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Survival

What do animals need to survive?

All animals, in every animal group, have three basic needs to survive. Whether an animal lives in the wild, in a safari park, on a farm or in a person's home, they need:



water



air

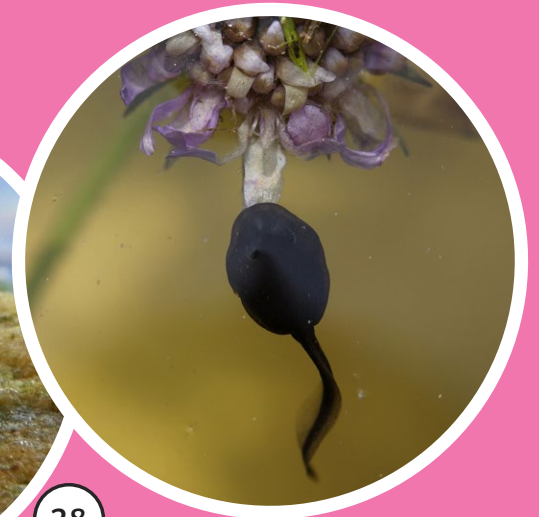


food

Baby birds are small, weak and blind when they are born so they need lots of care. The **adults** find food for their **offspring** and keep them safe and warm in the nest. When the **young** birds grow bigger and stronger, they can leave the nest.



Unlike birds and mammals, some amphibians, fish and reptiles do not stay with their **young**. The **young** are left alone to find what they need to survive.



Baby mammals are fed milk, usually from the mother, and are looked after by the **adults**.



Like other mammals, **young** humans are fed milk to give them the **nutrients** and water needed to grow. However, human **offspring** stay with an **adult** for many years.



As human babies grow up, their needs change. They no longer only drink milk, but their **diet** can include lots of different foods and drinks. Humans are **omnivores** and are able to eat meat and plants, although some people choose not to eat meat.



Did you
know
?

Despite looking very different from humans, an elephant baby is cared for in a similar way to a human baby. An elephant mother looks after her baby (calf) closely. The calf can drink its mother's milk until it is six years old. An elephant calf can drink over ten litres of milk a day!



Caring for a Reptile

Looking After a Chameleon

In the wild, chameleons are left to look after themselves when they are born. They must find their own food, water and shelter.

However, if you have a chameleon as a pet, you will need to make sure it has got what it needs to survive because it is not in its natural habitat.

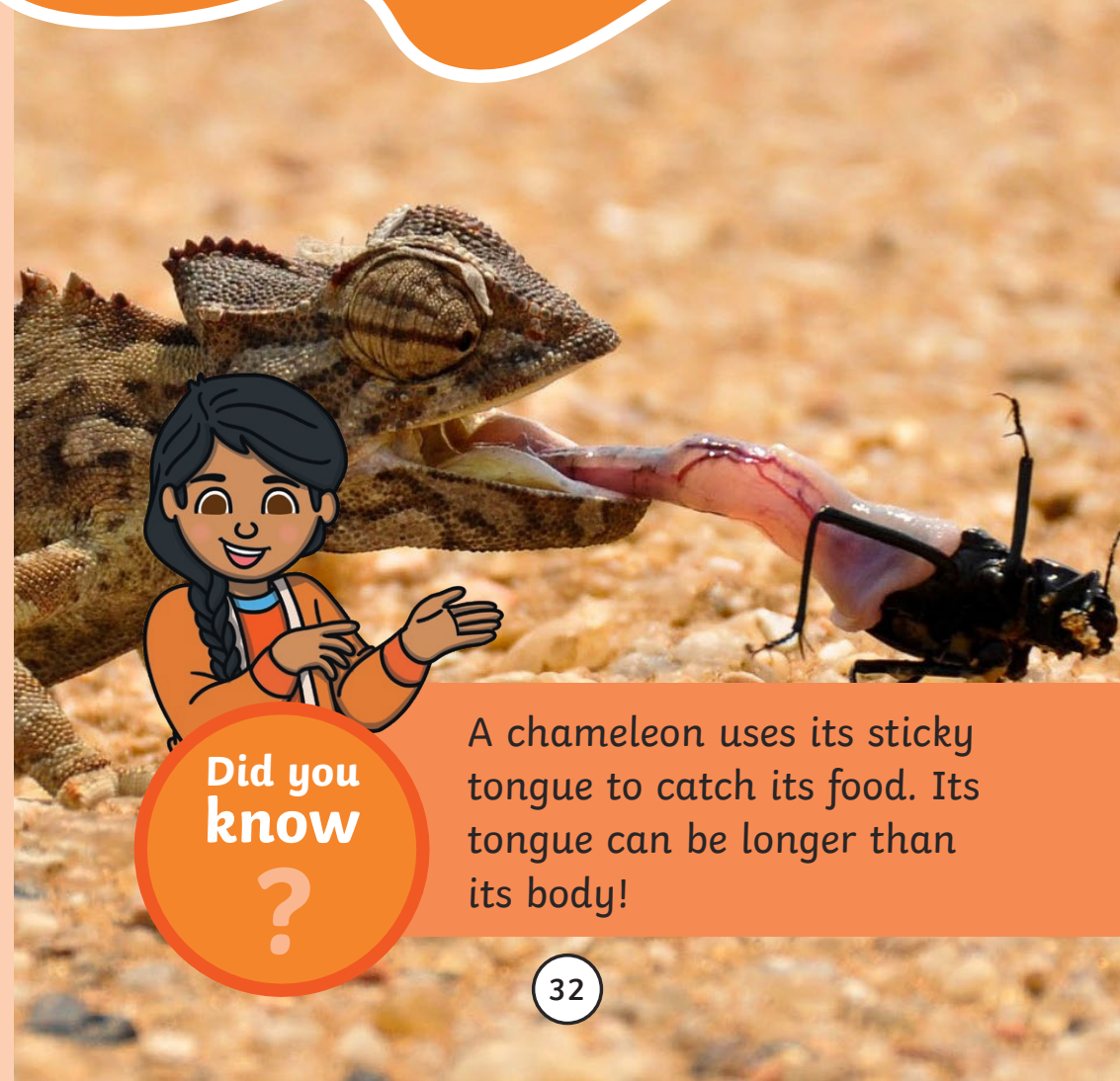


Chameleons need to be kept in a glass container with a supply of fresh air. Because they are cold-blooded, they need help to keep their body at the correct temperature. The bottom of the container needs to be cool and the upper part warm.

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Most chameleons are **omnivores** and typically eat berries, leaves, fruits, insects and worms.

Their container must be kept moist so they can lick droplets of water from their skin.



Did you know

?

A chameleon uses its sticky tongue to catch its food. Its tongue can be longer than its body!

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Caring for a Bird

Looking After a Budgerigar

After a baby budgerigar (budgie) is born, it is looked after by its **adults** for the first few weeks of life.

After eight weeks, the **young** bird can leave the mother and father and can then be kept as a pet. If you have a budgie as a pet, it needs food, water and a warm, safe place to survive.



Budgies are **herbivores** and eat a **diet** of birdseed, cooked rice, fruits and vegetables. Lettuce, avocado, lemon, potatoes, sweets and chocolate can all make them sick.



33



Did you know

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Budgies first came from Australia. Although they are warm-blooded, pet budgies need help from their owner to keep warm in the winter.

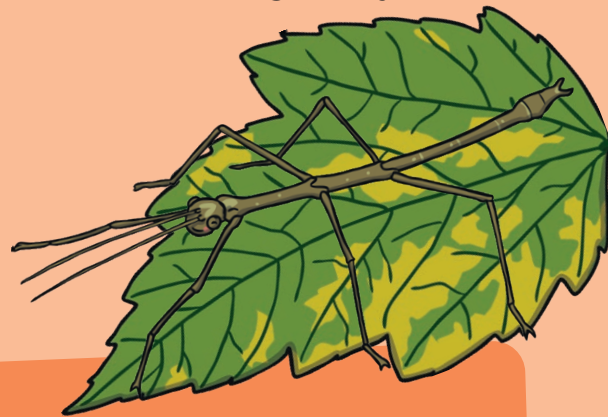
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Caring for an Insect

Looking After a Stick Insect

In the wild, stick insects live in forests and grasslands. They are **herbivores**.

If you have a stick insect as a pet, it must be kept in a warm container. Their home should also be tall because stick insects like to climb and hang upside down - they love to dangle from the highest twig or branch they can find!



Stick insects eat leaves, vines and berries. They like to drink water droplets found on plants, so their containers should be sprayed lightly with water.

35



Did you know

?

The largest type of stick insect is found in China. It can grow to over 60cm long with its legs stretched out! Can you find something in your classroom that is the same length as this giant insect?



All pets come with their own needs. Do you have any pets at home? How can you be a **responsible** owner?

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Staying Healthy

How can we stay healthy?

Being healthy is all about looking after your body and your mind. There are many things you can do to stay healthy, including:

- being active and exercising;
- spending time with friends and family;
- eating a balanced **diet**;
- having good hygiene;
- getting enough sleep;
- doing activities that you enjoy;
- drinking plenty of water.

Get Set, Go!

Being active and exercising keeps our bodies and minds healthy.

Exercise keeps our bodies healthy, especially our heart, lungs, bones and **muscles**.

Exercise helps our brain. It improves our concentration which is great for learning!

Being active is good for our minds - it makes us feel happy!

Exercise is fun, especially together with friends and family.



How to Be Active

You should aim to exercise for at least an hour every day. This can be spread throughout the whole day, so if you haven't moved much for a while it is good to get up and be active.

Being active can be a part of your everyday routine. Things like walking to school, dancing to your favourite songs and playing at the park are all great things you can do.

You should try to include a variety of different types of activities across the week. There are lots of fun activities to choose from!



trampolining



basketball



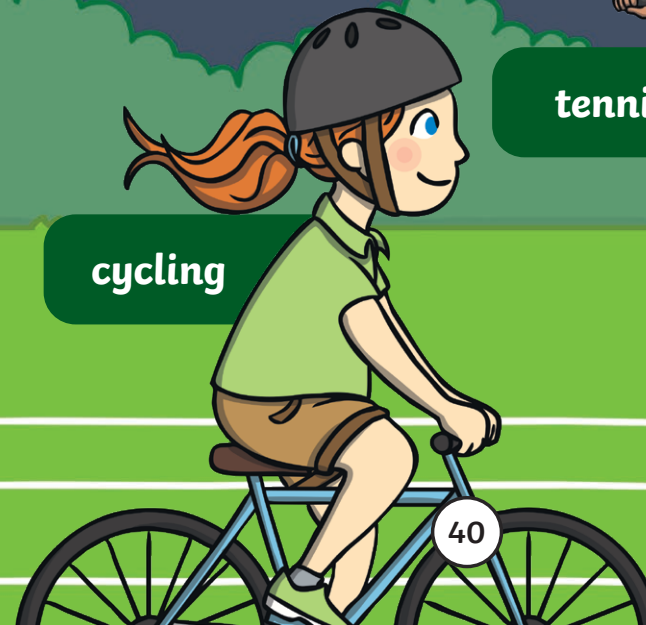
swimming



running



football



cycling



tennis

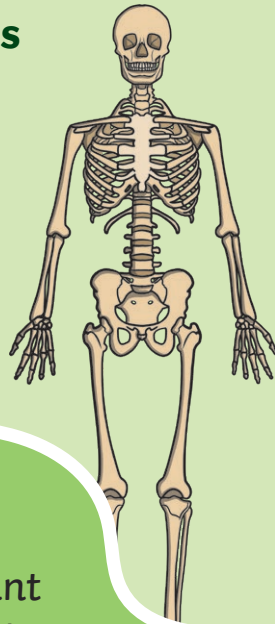
What happens to your body when you exercise?

When you are active, you should find your breathing gets faster and you feel warmer. Your **heart rate** will also increase. There's lots going on inside your body and exercise helps keep all these parts healthy too.

Skeleton and Muscles

Your **skeleton** and **muscles** work together to help you move. Exercise helps make your bones and **muscles** stronger.

Skeleton



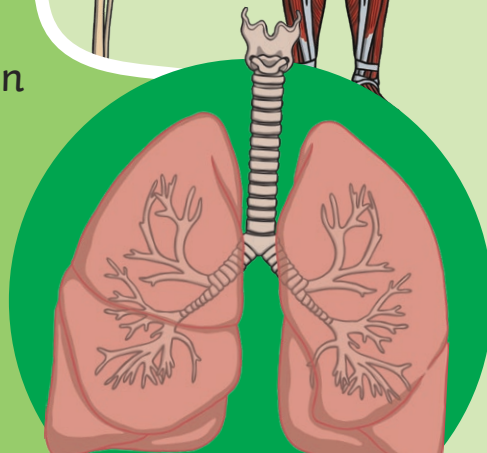
Muscles



Lungs

Your lungs are important for breathing. We breathe in **oxygen** in the air, which is essential for our bodies to survive. Exercise helps our lungs work better.

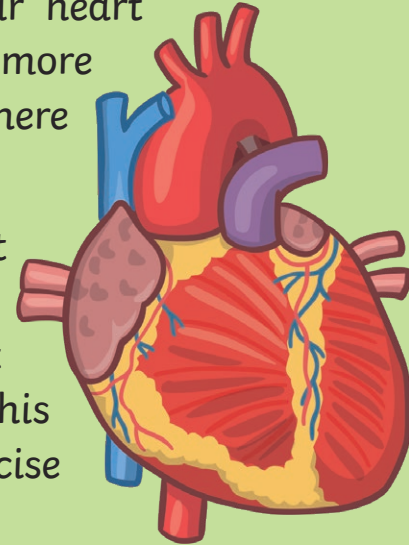
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Heart

From your lungs, **oxygen** moves into your blood and is pumped around the body by your heart. When you exercise, your heart beats faster, partly to deliver more **oxygen** around your body to where it is needed.

The heart is a **muscle** and it works hard night and day to keep you alive. This is why it is so important that we keep this **muscle** strong and healthy. Exercise helps us to do this!



The number of times your heart beats in a minute is called your **pulse**.

Find your **pulse** in your neck or wrist before you do any activity. Count how many beats your heart does in one minute.

Try repeating this after you have done some exercise.

What do you notice?

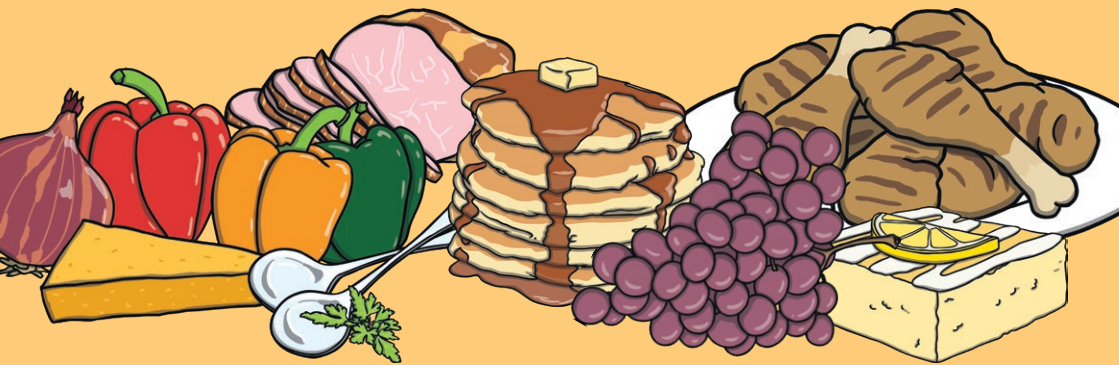
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Eating Well

Part of being healthy and feeling well involves eating a varied and balanced **diet**.

Humans need a **diet** with a range of different food groups to stay healthy. Each type of food does a different job in your body. This is why it is important to try to eat the right types of food and drink, in the right amounts.

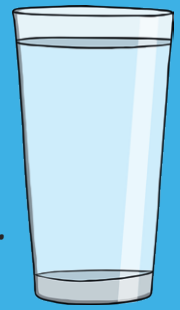


It's important to include healthy food and drinks in your **diet**. Some foods and drinks, especially those high in fat, salt and sugar, can be enjoyed occasionally and in smaller amounts.

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It's good to drink plenty of water so you don't **dehydrate**.



Did you know



Some people have an **allergy** or an intolerance to some foods. This means that they must avoid it in their **diet**.

Can you sort these foods into those that would make a healthy snack and those that should just be eaten occasionally?



What healthy snacks do you like to eat?

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Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more **sustainable** food. It shows how much of what you eat overall should come from each food group.



These foods are high in fat, salt and sugars. Eat less often and in smaller amounts.



Water, lower fat milk and sugar-free drinks. Limit fruit juice and/or smoothies to a total of 150ml per day.



The Eatwell Guide has five main groups. Try to have a variety of different foods from each of the groups to get all the **nutrients** you need.

Eat at least 5 portions of a variety of fruit and vegetables every day

Fruit and vegetables



We need to try to make sure we eat plenty of fruit and vegetables. Not only are they great as part of a meal, but they make good healthy snacks too.

It is good to base your meals around starchy carbohydrate foods.



Choose wholegrain or higher fibre versions with less added fat, salt and sugar

Potatoes, bread, rice, pasta and other starchy carbohydrates





Beans, pulses, fish, eggs, meat and other proteins

Eat more beans and pulses and two portions of sustainably sourced fish per week, one of which is oily.
Eat less red and processed meat

Foods like **dairy**, meat and fish are good for you when eaten in the right amounts because they are high in protein.

Humans do not have to eat meat in order to survive. In fact, many people choose not to eat meat and fish. They can still eat a balanced **diet** if they eat other foods from this group such as lentils, peas and beans. These are a healthy choice for all **diets**.



Dairy and alternatives

Choose lower fat and lower sugar options

Some people cannot, or choose not to eat **dairy** and there are alternatives available. These include soya alternatives, coconut milk, oat milk, almond milk and vegetable spread.

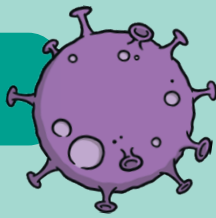


Oil & spreads

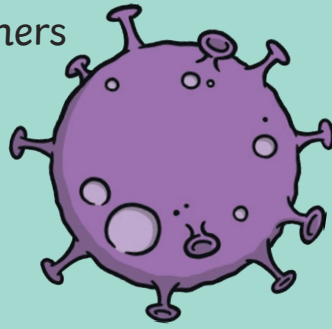
Choose unsaturated oils and use in small amounts

You do need some fat in your **diet**. Unsaturated fats, such as found in olive oil, are healthier fats. Saturated fats (found in a range of foods) are considered less healthy. All types of fat should be eaten in small amounts.

Germs and Illnesses



Being hygienic involves keeping ourselves clean. This helps to keep us, and others around us, healthy. It also makes us feel better about ourselves and helps us feel more confident when we're with other people.

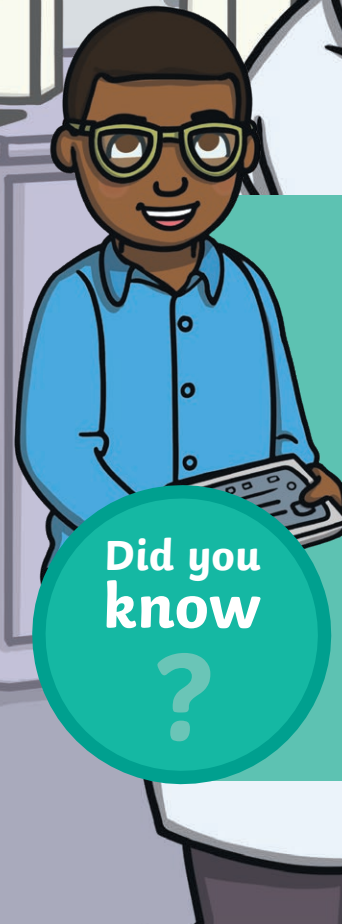


Germs can cause several illnesses that you may have come across, such as colds and chickenpox (which are both caused by something called a virus).

Germs can spread between people in different ways, such as through the air or by touching other people or surfaces. Luckily, there are simple things that you can do, such as good handwashing, to stop their spread.



51



Did you know



Microorganisms are tiny living things that we cannot see without the help of a special piece of equipment called a microscope. There are lots of different types of microorganisms and many of them are actually useful to us. Germs are normally what we call the microorganisms that can make us sick.



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Keeping Clean

How can we keep clean?

Having good hygiene isn't just for when you're ill. There are several things that should be part of your routine to help keep you clean, healthy and remove any germs.



Having a bath or shower.



Brushing your teeth.



Regularly washing your hands.



Washing your face.



Using a tissue to catch coughs and sneezes.



Wearing clean clothes.

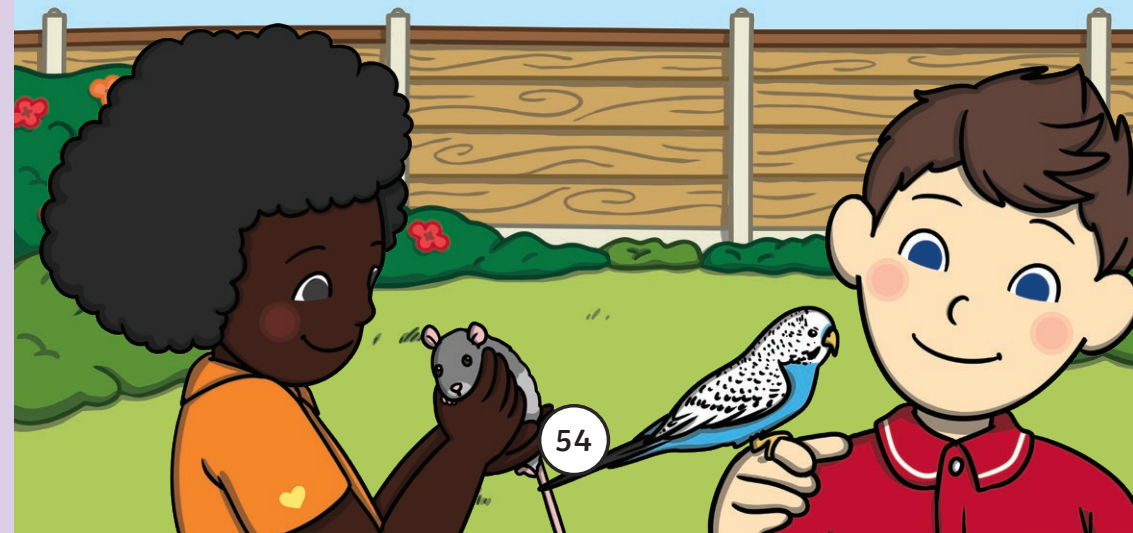
Can you think of any others?

Washing Your Hands

Regularly washing your hands is very important. It removes dirt and stops us spreading germs that can cause illnesses. You should try not to touch your eyes, nose or mouth when your hands are not clean.

Here are some of the times we should wash our hands:

- ▶ before preparing food or eating
- ▶ after we have been to the toilet
- ▶ after we cough, sneeze or blow our nose
- ▶ when we come in from play or outdoor activities
- ▶ when we've touched animals



How to Wash Your Hands Properly

1



Wet your hands with water.

2



Apply enough soap to cover your hands.

3



Rub your hands together.

4



Use one hand to rub the back of the other hand and clean between the fingers. Repeat with the other hand.

5



Rub your hands together and clean in-between your fingers.

6



Rub the backs of your fingers against your palms.

7



Rub your thumb using your other hand. Do the same with your other thumb.

8



Rub the tips of your fingers on the palm of your other hand. Repeat with your other hand.

9



After washing your hands for at least 20 seconds, rinse them with water.

10



After you have rinsed them, dry your hands thoroughly.

Coughs and Sneezes

Coughs and sneezes are very common. Follow these simple rules when you cough, sneeze or blow your nose, to help stop germs spreading.

1



Use a clean tissue to catch your cough or sneeze. Make sure the tissue covers your mouth and nose.

2



Put your used tissue in the bin as soon as possible.

3



Wash your hands straight away.

If you don't have a tissue with you, use your sleeve or the inside of your elbow instead of your hands. Remember to still wash your hands properly.

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Keeping Our Teeth Clean

Keeping our teeth clean is really important to keep our mouths healthy and try to avoid tooth **decay**.

It's important to brush your teeth with a fluoride toothpaste at least twice a day and for about two minutes each time. One of these times should be just before you go to bed. When you've finished brushing your teeth, spit the toothpaste out but don't rinse (rinsing stops the fluoride from working as well!).



Other things you need to do to look after your teeth include visiting your dentist regularly and trying to avoid sugary drinks and food.



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Quiz



1. Which animal group gives birth to 'live young'?
2. Which type of bird laid the world's biggest egg?
3. What are baby reptiles called?
4. Does the male or female penguin incubate the egg?
5. What are fish eggs called?
6. What are amphibian eggs called?
7. Name the three things which all animals need to survive.
8. What is the name of the muscle that pumps blood around the body?
9. What sort of foods should humans eat most in their diet?
10. Name one way of keeping clean and stopping germs from spreading.



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Glossary

adult	fully grown up animal or plant
allergy	when your body would be hurt by a particular food
blowhole	the nostril of a whale or dolphin on the top of its head, where it breathes from
body covering	any covering of the body such as fur, scales, hair or feathers
chrysalis	the hard shell that covers some insects while they change into an adult with wings
decay	rot, go bad
diet	food and drink eaten and drunk by animals
dehydrate	not have enough water, dry out

dairy	food made from milk like butter and cheese
hatchling	offspring that has come out of an egg
heart rate	the number of times a heart beats in one minute
herbivore	an animal that only eats plants
incubate	keep eggs warm until they are ready to hatch
independently	without outside help, by themselves
larva	the young form of an animal (fish and amphibians) after it hatches from an egg and before it changes into its adult form (larvae plural)
live young	offspring that are not born from an egg



muscle	a part inside the body that tightens and relaxes to cause a movement
metamorphosis	when there is a big change between the young and adult form of an animal
nutrients	the goodness found in food needed to live
offspring	the child or young of an animal
omnivore	an animal that eats meat and plants
oxygen	a gas that is found in the air around us
pulse	the beating of the heart that can be felt in your neck and wrist
pupa	an animal after it is a larva and before it becomes an adult

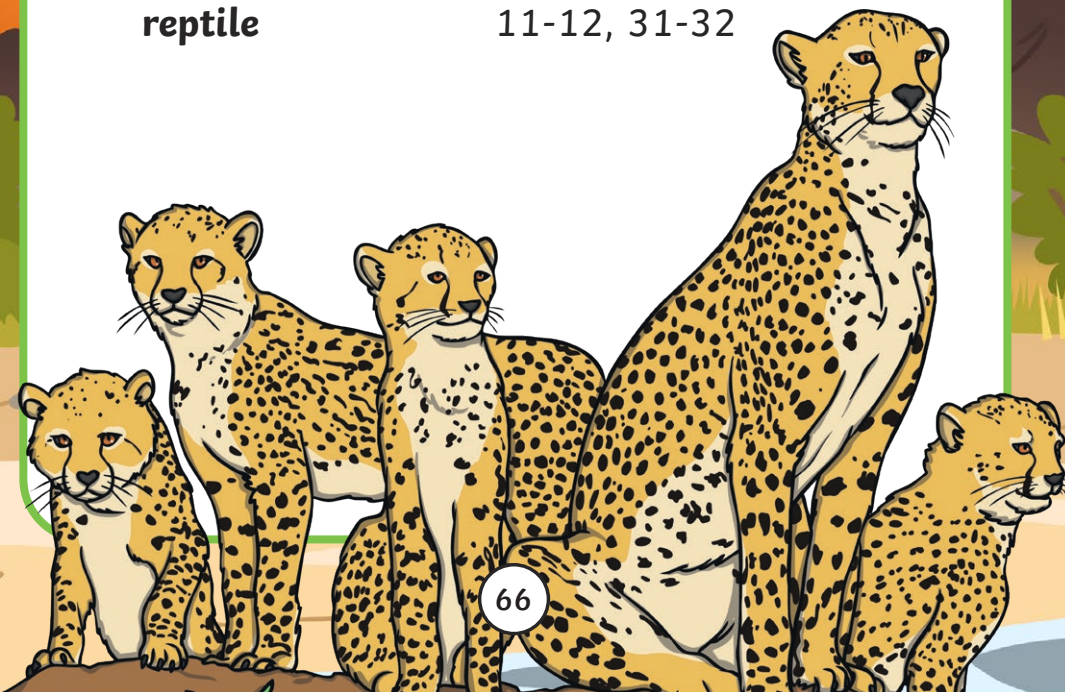
reproduce/ reproduction	when living things make new living things of the same kind
responsible	describes a person that does things they need to do
shed	when the skin falls off to make room for the animal to grow bigger
skeleton	the bones that help animals to move, protect body parts inside them and support their bodies
sustainability	using things so that we don't harm the environment and so we can still have those things to use in the future
waterproof	describes something that keeps water out
young	offspring that has been born recently

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There's More to Discover

Harness the excitement by using detailed lesson plans, creative and differentiated reading activities, assessments, and more – all linked to this book.

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Did you know that baby flamingos aren't pink when they're born? Or that the number of times your heart beats in a minute is called your pulse?

This eBook is packed full of fascinating facts like these that tell you all about how humans and animals grow up to be healthy adults. Delve into the animal world first to find out all about different animals and their young. Then, look at our own human life cycle and see how we change as we grow up.

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