

# Stephenson Memorial Primary School - Science

Topic: Animals inc. humans  
(muscles and skeletons)

Year: 3

Strand: Biology

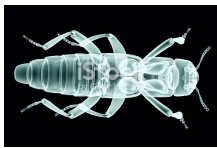
What should I already know?

The parts of the body and the five senses.  
Animals need food, water, air, shelter to survive.  
The ways in which humans can be healthy.

What should I know by the end of this unit?

What are the different types of skeleton?

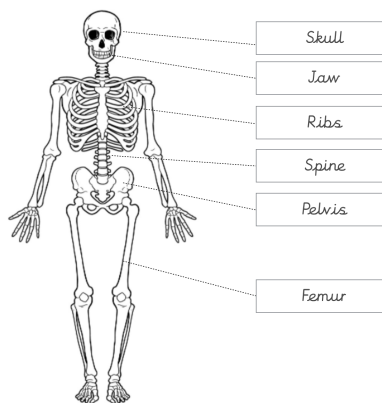
- Vertebrates are animals that have a backbone/spine. These skeletons are inside the body and are called endoskeletons.
- Some animals do not have a backbone. These are called invertebrates.
- Some invertebrates have their skeleton outside the body. This is called an exoskeleton.



What does an endoskeleton do?

1. Provides support and shape to the body
2. Protects organs (e.g. brain, heart)

The human skeleton



How do vertebrates move

- Skeletons can't move on their own
- Bones meet at joints
- Tendons connect muscles to bones
- Muscles contract and relax to move bones at joints

How do other animals move.

Worm and snake - use muscles  
Jelly fish and squid - jet propulsion  
Beetles and cockroaches - exoskeleton attached to muscles.

Vocabulary

Backbone

The column of small linked bones down the middle of the back. Also known as a spine.

Bones

The hard parts inside your body which form your skeleton.

Contract

To make smaller or tighter.

Endoskeleton

The internal skeleton of an animal.

Exoskeleton

The protective structure covering the outside of the body of some animals.

Invertebrate

Animals with no backbone.

Joints

Where two bones meet.

Muscles

Something inside your body which connects to bones. Used to make movement.

Organs

A part of the body with a special purpose.

Relax

To become less stiff or firm.

Skeleton

The framework of bones in your body.

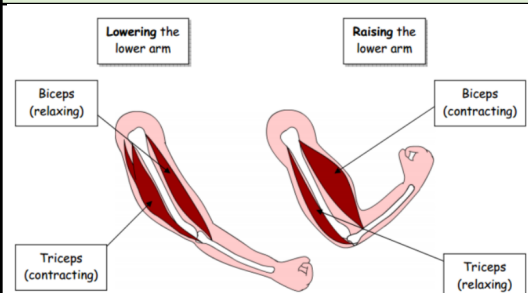
Tendons

A strong cord which joins a muscle to a bone.

Vertebrate

An animal with a spine.

Muscles



# Stephenson Memorial Primary School - Science

Topic: Animals inc. humans  
(nutrition)

Year: 3

Strand: Biology

What should I already know?

All animals need food, water and air to survive  
How humans can stay healthy  
Examples of healthy and unhealthy food choices

Vocabulary
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Balanced  
diet

A variety of food  
that you regularly  
eat

What should I know by the end of this unit?

Humans cannot make their own food like plants do, but have to eat plants and animals to stay healthy

Blood	
Diet	

The red liquid in the body
The food you eat

Diet
Energy

The food you eat
The ability and strength to do things

Energy
Healthy

The ability and strength to do things
To be well

Healthy
Heart

To be well
The organ that pumps blood around the body

Heart

The organ that pumps blood around the body
Heart

Lungs
Nutrients

Organs used in breathing
Substances that help

Nutrients	Amount
Protein	10g
Carbohydrates	20g
Fats	5g
Fiber	3g
Vitamins	100%
Minerals	100%

Substances that help plants and animals grow
Things that are not

Nutrition

The process of taking food into the body and using the nutrients.

Oxygen

Part of air. Humans need to breathe it to survive.
Fill in the blank

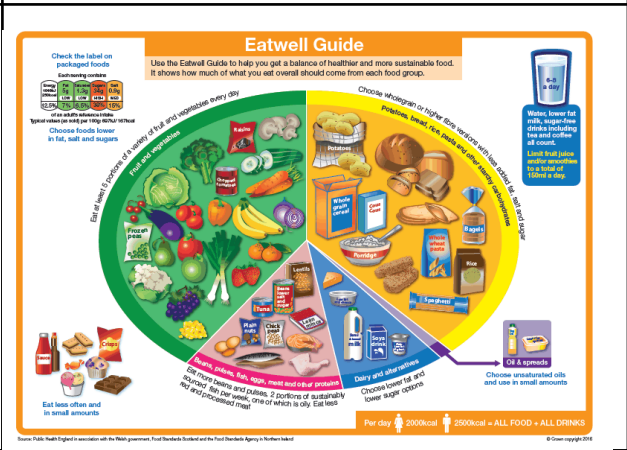
Stomach

The organ that receives food.

Know the different types of nutrient we need to have in a balance diet and which foods we can eat to get them.

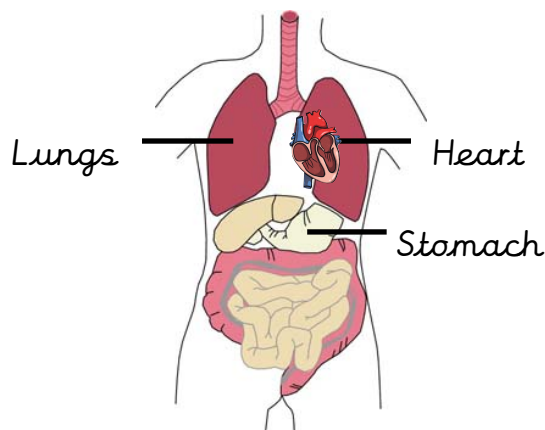
- Protein - helps your body to grow and repair. Found in red meat, dairy and beans
- Carbohydrates - give you energy. In bread, potatoes and pasta
- Fats - give you energy. In nuts, oil, avocado
- Vitamins and minerals - keep you healthy. In fruit and vegetables
- Fibre - helps you digest food. In whole grain bread and cereals.
- Water - helps move nutrients around the body and get rid of waste.

Know the proportions of different types of food we should eat to stay healthy



Know how water, nutrients and oxygen are transported in humans.

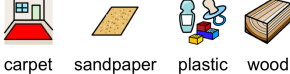
Nutrients and water from food go into the blood and around the body. Oxygen from breathing goes into our lungs and then into the blood and around the body.

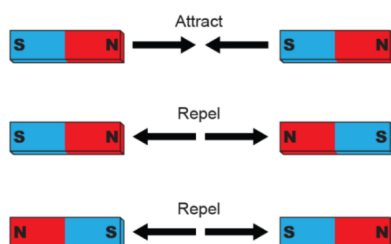


What should I already know?

The shape of some materials can be changed when they are stretched, twisted, bent or squashed.

What should I know by the end of this unit?

What are forces?	Forces are pushes and pulls. These forces can change the motion of an object. They can make it start moving, stop moving, speed up or slow down.
How do objects move on different surfaces?	Forces act in opposite directions to each other. When an object moves across a surface, friction acts as an opposite force. Friction slows down the motion of the object. Some surfaces create more friction than others which means objects move more slowly.  carpet sandpaper plastic wood On a ramp the force that cause the object to move down is gravity. Some forces, like friction need contact. Some forces, like gravity, act at a distance.
How do magnets work?	Magnets produce an area of force around them called a magnetic field. When objects enter the magnetic field, they will be attracted to or repelled from the magnet if they are magnetic. When magnets repel they push each other away. When magnets attract they pull together.
Which materials are magnetic?	Objects that are magnetic are attracted to magnets. Iron and steel are magnetic, Aluminium and copper are not magnetic
How do magnets work?	The ends of magnets are called poles. One end is called the North Pole and the other the South Pole. Opposite poles attract, similar poles repel.



Vocabulary

Attract	To make something come near
Contact	To touch
Friction	The resistance of motion when there is contact between two surfaces
Force	Pulling or pushing
Gravity	The force which causes things to drop to the ground
Magnet	Something which attracts magnetic materials
Magnetic field	An area around a magnet in which the magnet's power to attract things is felt
Non magnetic	An object that is not magnetic
Pull	Use force to move something toward you, or away from its previous position
Push	Use force to move something away from you or away from from its previous position.
Repel	A force that pushes something away
Surface	The flat part or outside of something

# Stephenson Memorial Primary School - Science

Topic: Light

Year: 3

Strand: Physics

What should I already know?

That the eyes are used to see  
Describe a material as reflective or non-reflective

What should I know by the end of this unit?

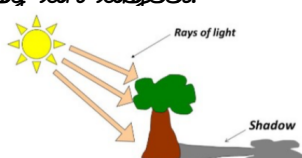
What is a light source?  
A light source is something that emits light by burning, electricity or chemical reactions.  
Burning light sources include the sun, flames and the stars.  
Electric light sources include torches, light bulbs and street lights.  
Chemical reactions can produce light. For example in glow sticks and fireflies

What is dark?  
Dark is the absence of light. We cannot see in total darkness

What is reflection?  
Reflection is when light bounces back off a surface.  
All objects reflect some light, but shiny objects reflect a lot of light.  
The moon is not a source of light - it reflects the light of the sun.

Light can be dangerous.  
The light from the sun can be dangerous.  
We shouldn't look directly at the sun.  
We can wear sunglasses to protect our eyes from the sun.

How are shadows formed?  
Shadows are formed when light is blocked by an object.



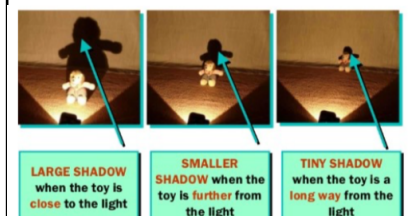
Opaque materials block light and form a dark shadow.  
Transparent materials let light through and form a very faint/no shadow.  
Translucent objects let some light through and make a medium dark shadow.

Vocabulary

Absence	Not here.
Dark	The absence of light
Light	A brightness that lets you see things
Opaque	You cannot see through it
Reflects	To bounce back from the surface and not go through it
Shadow	A dark shape on a surface that is made when something stands between a light and a surface
Source	Where something comes from
Surface	The flat top part of something or the outside of it
Translucent	Some light can pass through it. Nearly see through.
Transparent	See through - light can pass through it.

How do shadows change size?

As the light source gets further away from the object the shadow gets smaller.  
As the light source gets closer to the object the shadow gets larger.





# Stephenson Memorial Primary School - Science

Topic: Plants

Year: 3

Strand: Biology

## What should I already know?

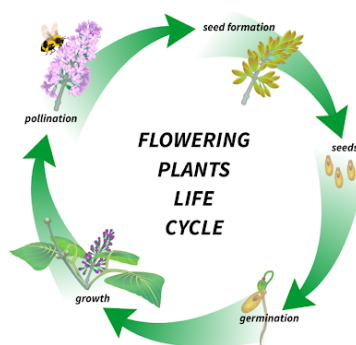
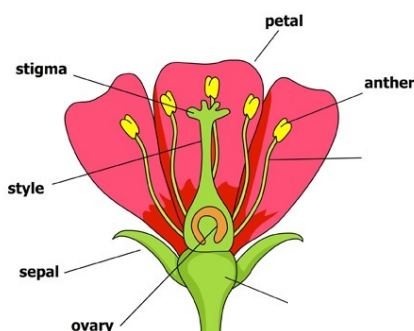
Which things are living and which are not  
The basic structure of trees and plants  
Seeds and bulbs germinate and grow into plants  
Plants need water, light and the right temperature to grow  
Plants and animals depend on each other to survive

## What should I know by the end of this unit?

The functions of the different parts of flowering plants	The petals on a flower are usually bright to attract insects so they can collect pollen to make seeds. The seeds germinate and grow into new plants. Leaves use sunlight to make food The stem carries water and nutrients to the rest of the plant and keeps the plant upright. The roots anchor the plant in the soil and absorb water and nutrients from the soil.
What do different plants need to grow?	All plants need water, air, sunlight, nutrients from the soil, a suitable temperature and space to grow. Different plants need different amounts of each thing.
How is water transported in plants?	Water is absorbed from the soil by the roots. It is then transported to the stem and the rest of the plant
How do flowers help in the life cycle of flowering plants?	The flower creates seeds Pollination occurs when pollen from the anther is moved to the stigma by insects The pollen then travels down and meets the ovule. This is called fertilisation and is when seeds are made. Seeds are dispersed so that germination can begin again.

## Vocabulary

Absorb	Soak up or take in
Anther	The part of a flower that makes pollen
Dispersed	Scattered or spread out
Dissect	To cut open and examine
Fertilisation	In plants, where pollen meets the ovule to form a seed
Fruit	The part of a plant that has seeds and flesh.
Germination	A seed starts to grow
Insect pollinated	An insect carries the pollen to the stigma
Life cycle	The series of changes that an animal or plant goes through from the beginning of its life to the end
Mature	Fully grown
Nutrients	Substances to help plants and animals grow
Ovule	A small egg
Pollen	A fine powder made by flowers to produce seeds
Pollination	Pollen from the anther moves to the stigma
Reproduction	To make more of the same plant or animal
Stigma	The top centre part of the flower which takes in pollen
Wind pollinated	The wind carries the pollen to the stigma



What should I already know?

Identify, describe and compare a variety of everyday materials including rock.  
Compare the suitability of a variety of everyday materials for different purposes.

What should I know by the end of this unit?

What are the different types of rocks?

1. Igneous rocks are made when magma cools and goes solid. Examples: obsidian and granite. Properties: strong, hard wearing and non-porous.
2. Metamorphic rocks are made when rocks are heated and squeezed within the earth. Examples: slate and marble. Properties: strong
3. Sedimentary rocks are formed when sediment is deposited in layers over time and is then compressed. Examples: limestone, sandstone and chalk. Properties: porous and easily worn down

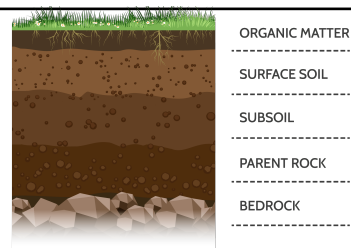
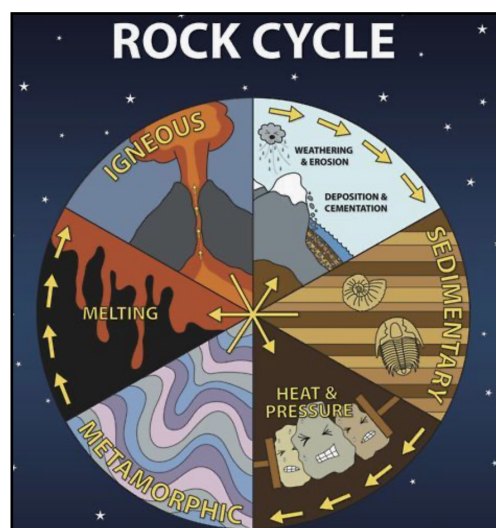
What is the rock cycle?

Rocks can change from one type to another in a process known as the rock cycle.

What is soil?

Soil is made from weathered rock. Soil contains organic matter such as small pieces of rock, decaying plants and water. Soil has different layers.

#### Natural Rocks

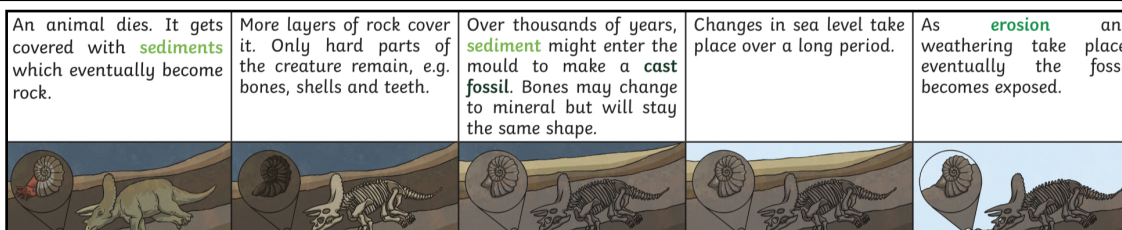


What are fossils?

Fossils are the remains of prehistoric life. There are three different types of fossil:

1. Trace fossils e.g. footprints, poo
2. Whole body fossils e.g. insects in amber
3. Mould and cast fossils

How are mould and cast fossils made?



Vocabulary		
Bedrock	The solid rock in the ground which supports the soil above	
Brick	A man made rock	
Fossil	The remains or trace of a living animal or plant from a long time ago.	
Igneous	Rocks formed by intense heat	
Magma	Molten/liquid rock	
Metamorphic	Rocks made by pressure and heat	
Molten	Very hot and becomes liquid	
Organic matter	A mix of plant roots, insects, minerals and decomposing plants and animals in the soil	
Palaeontology	The study of fossils to learn about the past	
Permeable	Allows water or gas to pass through	
Porous	Has tiny holes in which allow water or gas to pass through	
Prehistoric	The time in history before anything was written down	
Pressure	Force produced when you squeeze something	
Pumice	Hardened lava. Light and porous.	
Sediment	Very small pieces of rock	
Sedimentary	Rocks formed by pressing together layers of sediment	
Soil	Substance on the surface of the earth where plants grow	
Weathered	Affected/broken down by the weather	