

# Year 3 – Science – Autumn 1

## Animals and Humans

### Key Questions:

What is nutrition?

Why is it important to have a balanced diet?

What is the importance of a skeleton?

What are the different types of skeleton?

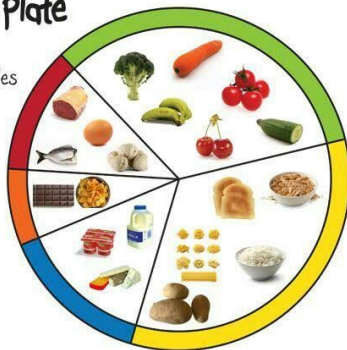
What are the functions of a skeleton and muscles?

### Key words:

healthy, nutrients, energy, saturated fats, unsaturated fats, carbohydrates, protein, fibre, fats, vitamins, minerals, water

### A Balanced Plate

- Fruit and vegetables
- Grains, cereals and potatoes
- Dairy products
- Meat, fish, nuts and eggs
- Fats and sugars

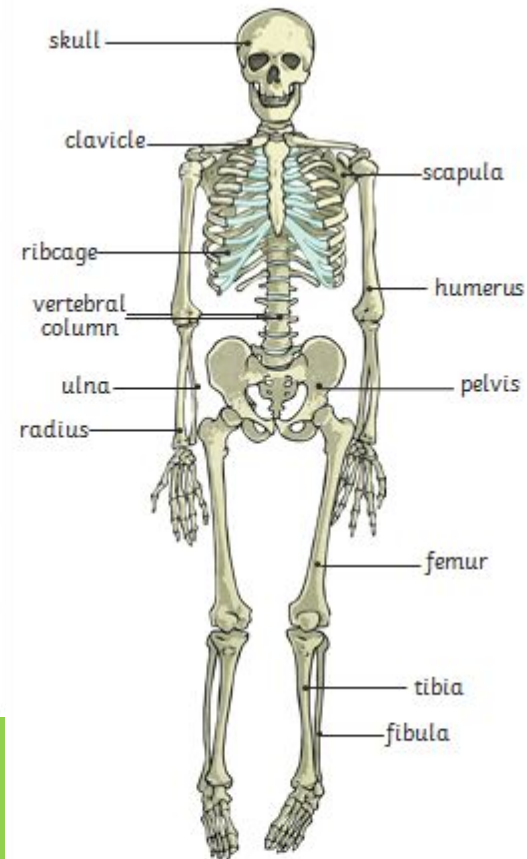


## What will I learn?

You will look at the different types of nutrition that animals and humans need to stay healthy.

You will look at skeletons and muscles and explore the importance of these.

Nutrient	Found in... (examples)	What it does/they do
carbohydrates		provide <b>energy</b>
protein		helps growth and repair
fibre		helps you to digest the food that you have eaten
fats		provide <b>energy</b>
vitamins		keep you <b>healthy</b>
minerals		keep you <b>healthy</b>
water		moves <b>nutrients</b> around your body and helps to get rid of waste



### INVERTEBRATES AND VERTEBRATES

**VERTEBRATES** are animals that have a backbone inside their body. The major groups include fish, amphibians, reptiles, birds and mammals.

**INVERTEBRATES** do not have a backbone. They have a soft body, like worms and jellyfish or a hard outer casing covering their body like spiders and crabs.

Activity – look at three different animals and find out what type of skeleton they have.

# Year 3 – Science – Autumn 2 - Rocks

## Key Questions:

Why are rocks important?

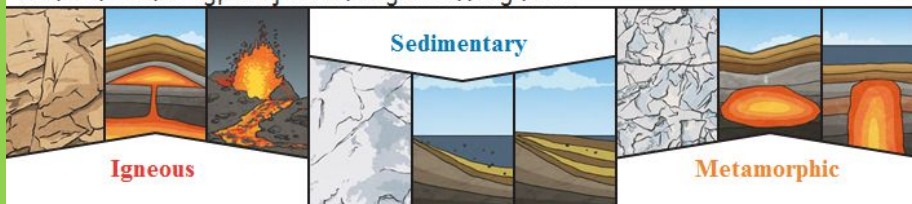
What are the different types of rocks?

How are rocks formed?

What are fossils?

How are fossils formed?

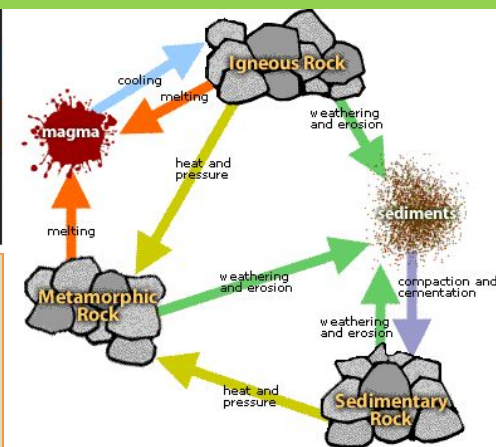
There are three types of naturally occurring rock.



## What will I learn?

You will look at different types of rocks and study their properties.

You will explore how fossils are formed and look at how soils are made.



## TYPES OF ROCKS

**IGNEOUS ROCKS** - are very hard, dark and heavy. They are formed when molten magma from a volcano cools down. They tend to have interlocking grains giving the rock a crystalline appearance. **EXAMPLES:** granite, basalt, obsidian.



**METAMORPHIC ROCKS** - are rocks which have been changed over time by pressure or heat. Fossils can be found in metamorphic rocks if plants and animals have been trapped in the rocks. They are hard but can be damaged by acids. **EXAMPLES:** slate, marble



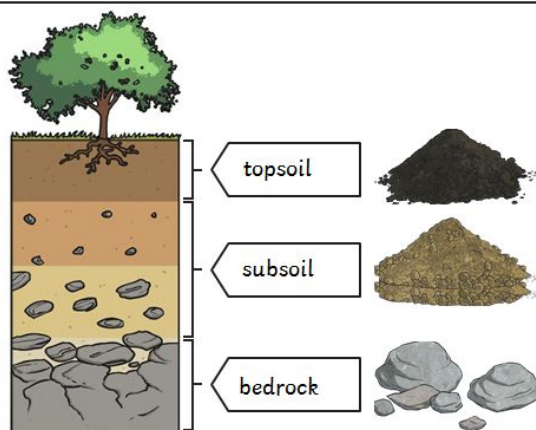
**SEDIMENTARY ROCKS** - are formed by sediment (which includes minerals, small pieces of plants and other organic matter) that is deposited over time. The sediment is compressed over a long period of time before it becomes solid layers of rock. **EXAMPLES:** sandstone, limestone, flint, chalk



## Soil

Soil is the uppermost layer of the Earth. It is a mixture of different things:

- minerals (the minerals in soil come from finely broken-down rock);
- air;
- water;
- organic matter (including living and dead plants and animals).



**Activity** – have a look at the rocks and soil you have in your garden/around where you live. What do you notice? Can you identify any different rocks?



# Year 3 – Science – Spring 1- Magnets and Forces

## Key Questions:

What is a force?

Why are forces important?

What is a north pole?

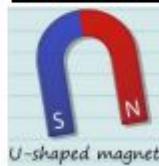
What is a south pole?

Why do different surfaces have different friction?

## What will I learn?

Compare how objects move differently on different surfaces. Compare and group objects based on whether they are magnetic or not. Explore and make predictions about which magnets will attract and repel.

### DIFFERENT TYPES OF MAGNETS



U-shaped magnet



Bar magnet



Ring magnet



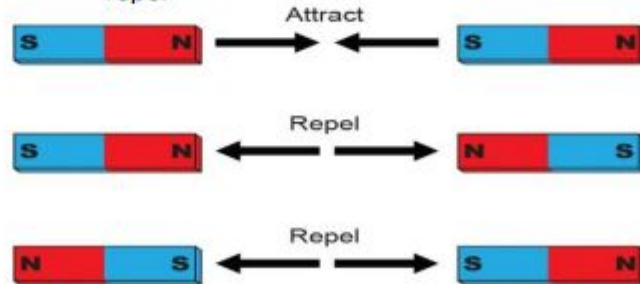
Horseshoe magnet

**MAGNETS** - are objects or materials that produce a magnetic field and attract or repel magnetic objects.

Magnets have 2 poles: north and south.

If you put magnets towards each other:

- 1 south pole and 1 north pole will attract
- 1 south pole and another south pole will repel
- 1 north pole and another north pole will repel



**Key words:** force, gravity, friction, magnetism, magnet, poles, attract, repel.

Different **surfaces** create different amounts of **friction**. The amount of **friction** created by an object moving over a **surface** depends on the roughness of the **surface** and the object, and the **force** between them.

The driving **force** pushes the bicycle, making it move.



**Friction** pushes on the bicycle, slowing it down.

**Activity** – What magnets can you find around your home? What are the uses of magnets? Why are they important?

# Year 3 – Science – Spring 2 - Light

## Key Questions:

What is light?

What sources of light are there?

Why do we need light?

What is dark?

How does reflection happen?

## What will I learn?

That we need light in order to be able to see things. Know that light is reflected from surfaces and think about safety jackets and how these reflect light more effectively. Know that light from the sun can be dangerous and how we can protect ourselves.

**REFLECTION** - When light from an object is reflected by a surface, it changes direction. It bounces off at the same angle it hits it.

Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull and dark surfaces such as dark fabrics do not reflect light well.

Example: light travelling and reflecting from a smooth surface.



Example: light travelling and reflecting from a rough surface.



**Key words:** light source, emits, opaque, transparent, translucent, reflects, shadow.

**TRANSPARENT** – a material through which light can pass completely. They are also called see-through objects.

**EXAMPLES:** window, fish tank, glass



**TRANSLUCENT** – a material through which light can pass partially, we can partly see through these objects.

**EXAMPLES:** coloured plastic bottle, jelly, tracing paper, coloured balloon.

**OPAQUE** – a material which light cannot pass through at all.

**EXAMPLES:** cardboard, metal, telephone, flower pot.



## 5 Sun Safe Tips

BETWEEN 10AM to 4PM

1  
APPLY  
SUNSCREEN



2  
PUT ON A  
HAT



3  
WEAR  
SUNGLASSES



4  
PROTECTIVE  
CLOTHING



5  
SEEK  
SHADE



Activity – Look around your home – what items do you have to keep you safe in the sun? Why is this important?



# Year 3 – Science – Summer 1 – Plants

## Key Questions:

What do plants need to grow?

How does water travel around the plant?

Why do plants need leaves?

How do seeds get dispersed?

Do all plants need the same conditions to grow?

## What will I learn?

You will learn about different functions of flowering plants. Explore how water is transported around plants. Study the life cycle of flowering plants and look at seed dispersal.



germination



pollination



fertilisation



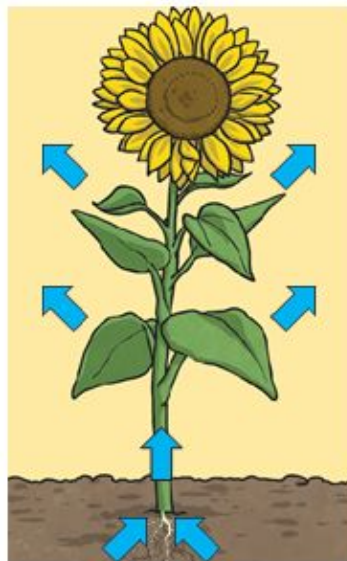
seed dispersal

What can you see the differences between deciduous and evergreen leaves?

**Key words:** deciduous, dispersal, evergreen, pollination, pollen, photosynthesis, life cycle, wild.

## How Water Moves through a Plant

1. The **roots** absorb water from the soil.
2. The **stem** transports water to the **leaves**.
3. Water evaporates from the **leaves**.
4. This evaporation causes more water to be sucked up the **stem**.



The water is sucked up the **stem** like water being sucked up through a straw.

Activity – see if you can find some deciduous and evergreen trees around where you live. What can you notice about them – what is the same and what is different?

# Year 3 – Science – Summer 2 – Investigations/Scientists

## Key Questions:

Why are Scientists important?

What does a botanist do?

What does a seismologist do?

What does a paleontologist?

**Key words:** seismologist, palaeontologist, botanist, investigation, cause, effect, variables, prediction, fair test.

## What will I learn?

You will explore investigations further and look at using tables and charts to show what you have found. You will research various different Scientists and look at their importance for the world today.

<b>David Douglas</b>	The Douglas fir tree is named after this <b>botanist</b> . He also introduced pines and the flowering currant to Britain.
<b>Jeanne Baret</b>	<u>Baret</u> introduced 70 plants to Europe, including the bougainvillea.
<b>Tom Hart Dyke</b>	This plant hunter hunts rare plants such as orchids.
<b>Marie Curie</b>	Marie Curie was a famous scientist who developed the use of x-rays, which meant that a lot more patients could be correctly diagnosed and treated.
<b>George Washington Carver</b>	George came up with more than 100 uses of a peanut so farmers could sell these plants at a higher price. The uses of peanuts included paints, face creams, plastics and medicines.
<b>William Smith</b>	William studied <b>geology</b> and would study the pattern of fossils. He realised that he could tell the age of a rock by looking at fossils.
<b>Inge Lehmann</b>	Inge was a <b>seismologist</b> and looked at the waves of energy caused by earthquakes. She concluded that the earth has a solid core at the centre.

Activity – research a chosen Scientist and find out what they invented or discovered to make them important.