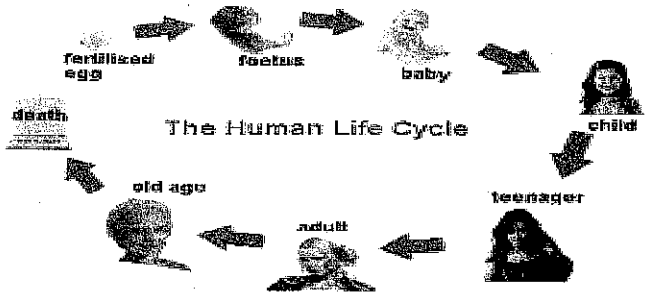


Biology - Animals and Humans

Key Vocabulary

Adolescent – The process of developing from a child into an adult (teenager)

Adult – A person who is fully grown or developed

Asexual reproduction – Offspring get genes from one parent so are clones of their parents

Child – A young human being below the age of puberty or below the legal age of majority

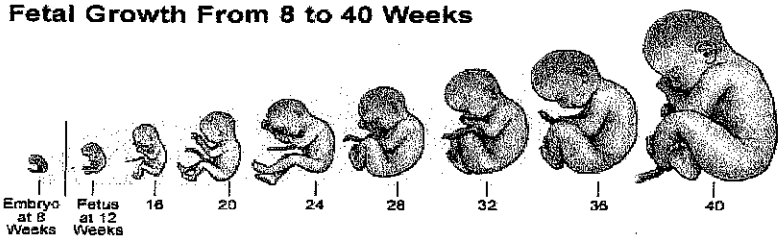
Foetus/ fetus – An unborn or unhatched offspring of a mammal, in particular an unborn human more than eight weeks after conception

Gestation – The process or period of developing inside the womb between conception and birth

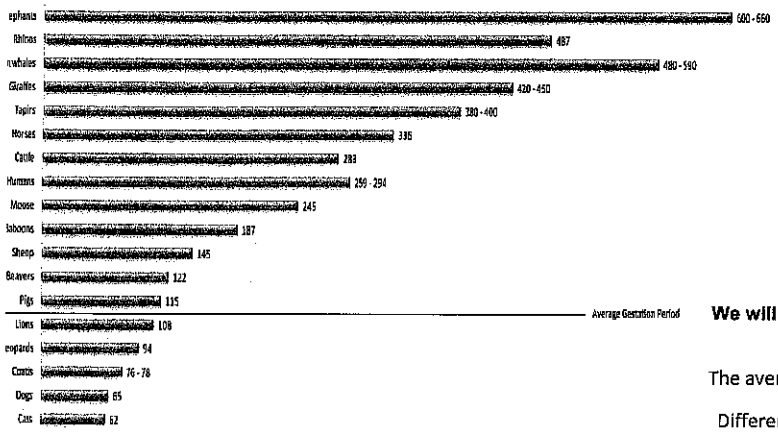
Life expectancy – The average period that you may expect to live

Reproduction – The production of offspring by a sexual or asexual process

Fetal Growth From 8 to 40 Weeks



Average gestation period by days



Working Scientifically

We will be gathering data and reporting about:

The averages of height in men and women

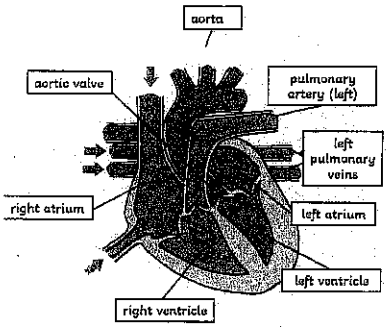
Differences between children and adults

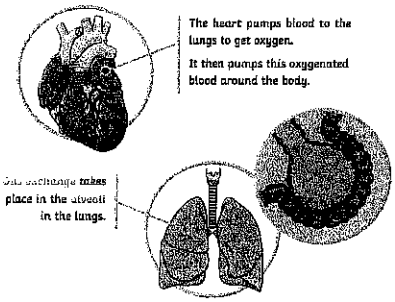
We will be enquiring about:

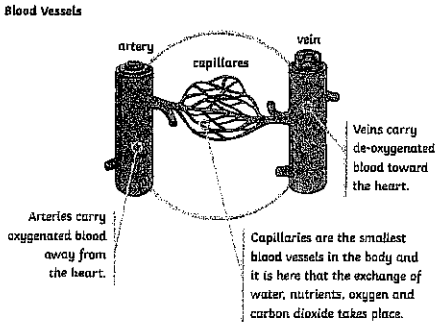
The changes in human develop

How our bodies differ from birth to old age

Biology – Circulatory System







Key Vocabulary

Arteries – Muscular-walled tubes that transport blood from the heart to other parts of the body

Blood – Red liquid that circulates in arteries and veins, carrying oxygen to and carbon dioxide from tissues of the body

Blood vessel – A tubular structure carrying blood through the tissues and organs

Circulatory system – The system that circulates blood through the body, including the heart, blood vessels and blood

Heart – A hollow muscular organ that pumps the blood through the circulatory system

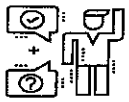
Lungs – Pair of organs situated within the ribcage where oxygen can pass into the blood and carbon dioxide be removed

Nutrients – A substance that provides nourishment essential for the maintenance of life and for growth

Organs – Part of an organism that is typically self-contained and has a specific vital function (e.g. the heart and lungs)

Veins – Tubes forming part of the blood circulation system of the body, carrying mainly oxygen-depleted blood towards the heart

Working Scientifically



We will be explaining:

The functions of the circulatory system

The different roles of the heart, blood vessels and blood

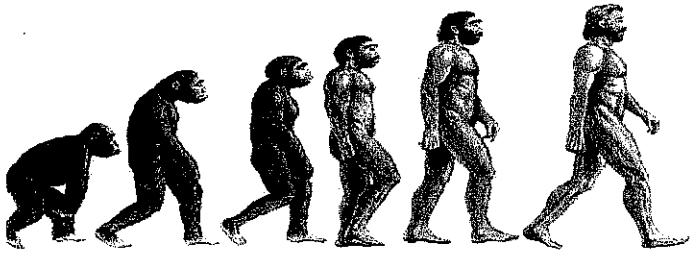
We will be reporting:

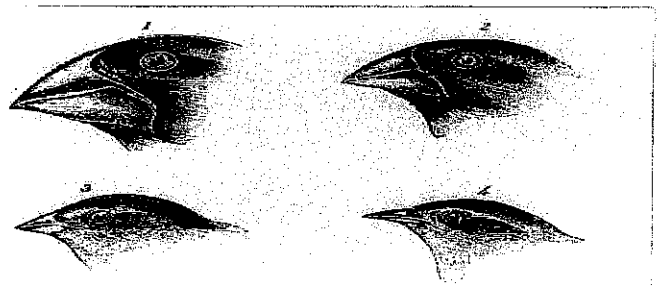
The effect of exercise

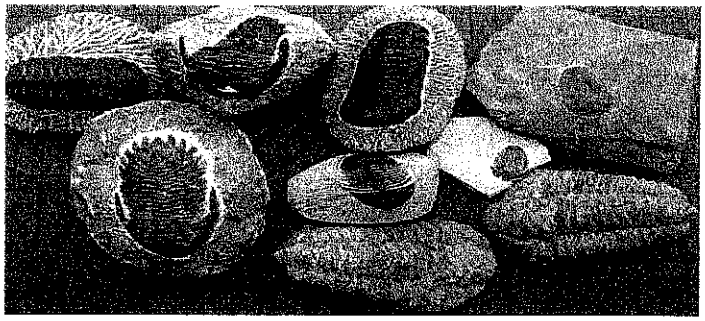
The relationship between diet and exercise

On why nutrients are important

Biology – Evolution and Inheritance







Key Vocabulary

Adaptation – The process of change so that an organism or species can become better suited to their environment

Environment – The surroundings or conditions in which a person, animal, or plant lives

Evolution – The process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth

Fossil – The remains or impression of a prehistoric plant or animal embedded in rock and preserved

Inherit – To gain a quality, characteristic or predisposition genetically from a parent or ancestor

Offspring – A person's child or children/ an animal's young

Working Scientifically

We will be reporting about:

How plants and animals have evolved over time

The theory of evolution

Inheritance of plants and animals

We will be making enquiries about:

How fossils are formed

Biology – Living Things

Photosynthesis

Word equation

Carbon dioxide + Water —(Light, Chlorophyll)→ Glucose + Oxygen

Symbol equation

$6CO_2 + 6H_2O \xrightarrow{\text{Light, Chlorophyll}} C_6H_{12}O_6 + 6O_2$

Key Vocabulary

Fertilise – The male part meeting the female part to produce a new living thing

Glucose – A sugar

Nectar – a sugary fluid within flowers to encourage pollination

Photosynthesis – How plants make their food. Turn sunlight into nutrients from carbon dioxide and water.

Pollen – a fine powdery substance, discharged from the male part of the flower that fetilises the female part

Pollination – transferring pollen to allow fertilisation

Carbon dioxide – Carbon dioxide is a colorless gas with a density about 60% higher than that of dry air.

Chlorophyll – a green photosynthetic pigment found in plants and algae.

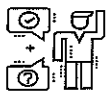
Types of pollination:

1. Self pollination
2. Wind pollination
3. Insect pollination

Life Processes:

1. Movement
2. Respiration
3. Sensitivity
4. Growth
5. Reproduction
6. Excretion
7. Nutrition

Working Scientifically



We will be explaining:

Why the life processes are important for living things

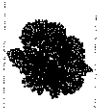
Similarities and differences of the processes between plants and living things

We will be making enquiries about:

Why pollination may differ in living things

How pollination may differ in living things

Biology – Classification and Life Cycles

Domain	Bacteria	Archaea	Eukarya			
Kingdom	Bacteria	Archaea	Protista	Fungi	Plantae	Animalia
Example						
Characteristics	Bacteria are simple unicellular organisms.	Archaea are simple unicellular organisms that often live in extreme environments.	Protists are unicellular and are more complex than bacteria or archaea.	Fungi are unicellular or multicellular and absorb food.	Plants are multicellular and make their own food.	Animals are multicellular and take in their food.

Key Vocabulary

Amphibian – A cold-blooded vertebrate animal that compromises frogs, toads, newts, salamanders and caecilians

Arachnid – An animal that has eight legs and a body formed of two parts

Habitat – The natural home or environment of an animal, plant or other organism

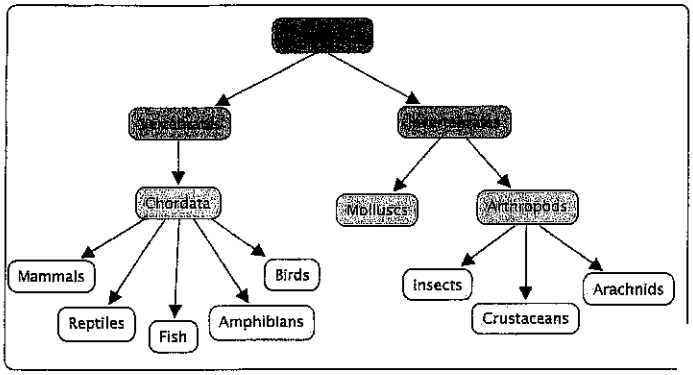
Invertebrate – An animal lacking a backbone

Microorganism – A microscopic organism, especially a bacteria, virus or fungus

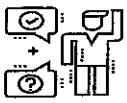
Reptile – A vertebrate animal that has dry scaly skin and typically lay soft-shelled eggs on land

Vertebrate – An animal with possession of a backbone/ spinal column

Classification



Working Scientifically



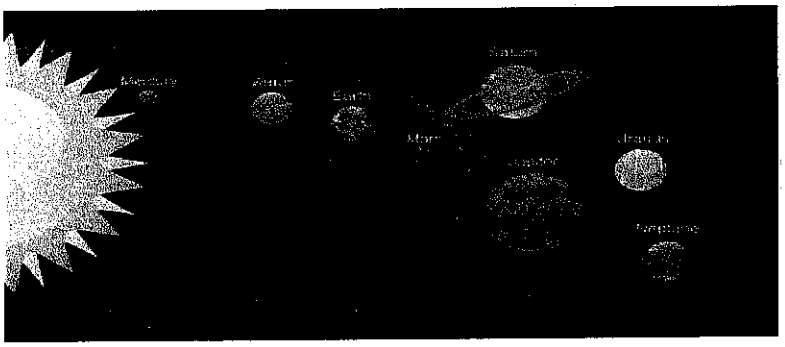
We will be explaining:

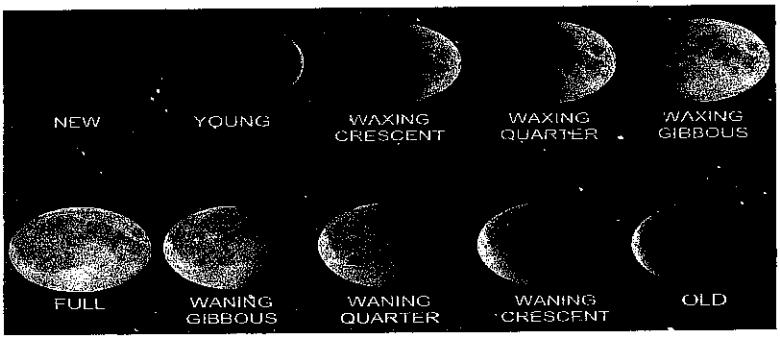
Similarities and differences between life cycles

And using different classification keys

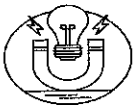
We will be recording:

Different ways to classify animals and plants





Physics – Earth and Space



Key Vocabulary

Axis – An imaginary line about which a body rotates

Dwarf planet – A celestial body resembling a small planet but lacking certain technical criteria to be classed as a planet e.g. Pluto

Geocentric – Where people believed the earth was at the centre of the solar system

Heliocentric – Representing the sun as the centre of the solar system, the modern view of the solar system

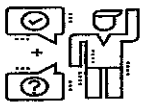
Orbit – The regularly repeated oval course of a celestial object around a star or planet

Planet – A celestial body moving in orbit round a star

Rotation – The action of rotating about an axis or centre

Solar system – The collection of eight planets and their moons in orbit round the sun

Working Scientifically



We will be explaining:

Scientific evidence and using it to support or refute ideas

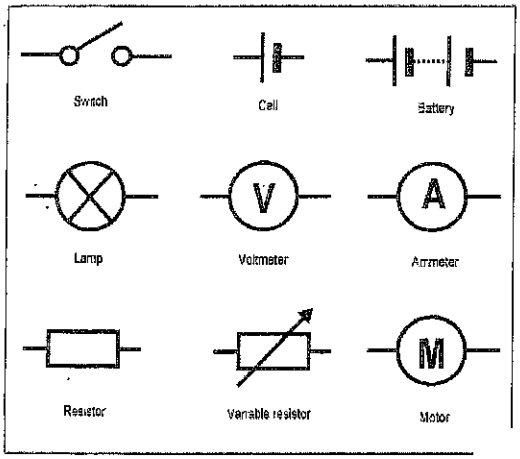
Movements of the earth, moon and sun

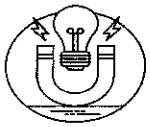
We will be gathering data:

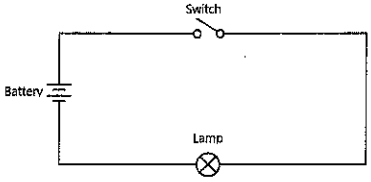
On the phases of the moon

On how we get the calendar year, months, seasons

Physics - Electricity







Key Vocabulary

Battery – the power source in a circuit made up of two or more cells

Break – an interruption in the flow of electricity

Lamp – an electrical component which lights up in a circuit

Buzzer – an electrical component that changes electrical energy into sound

Current – a flow of electricity around a circuit

Electrical conductor – a material that allows electricity to flow through it e.g. metals

Electrical insulator – a material which does not allow electricity to flow through it

Fuse – an electrical component which will burn out in order to break a circuit in an emergency

Motor – an electrical component which rotates causing something to turn

Resistor – an electrical conductor that makes it difficult for electricity to flow in a circuit

Terminal – the end of a cell or battery – each cell has a positive (+) and a negative (-) terminal

Working Scientifically

We will be testing and predicting:

How to make a motor and buzzer work

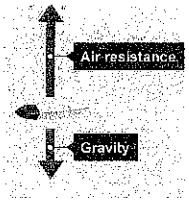
How to make bulbs brighter

Patterns of voltage and various components

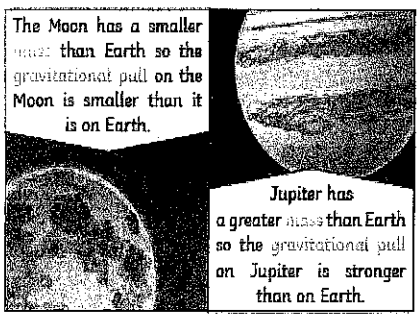
We will be using:

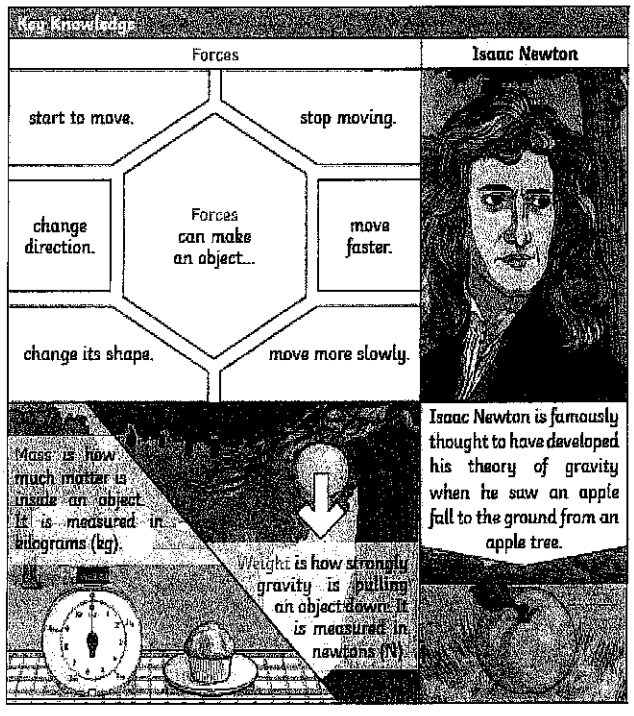
Symbols to represents components in circuits

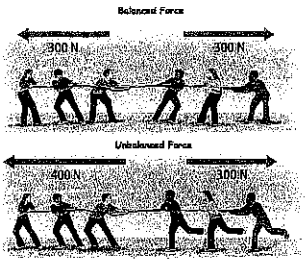
Physics - Forces



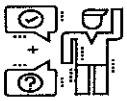
Key Vocabulary	
forces	Pushes or pulls.
gravity	A pulling force exerted by the Earth (or anything else which has mass).
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground.
weight	The measure of the force of gravity on an object.
mass	A measure of how much matter (or 'stuff') is inside an object.







Working Scientifically



We will be explaining:

Scientific evidence and using it to support or refute ideas.

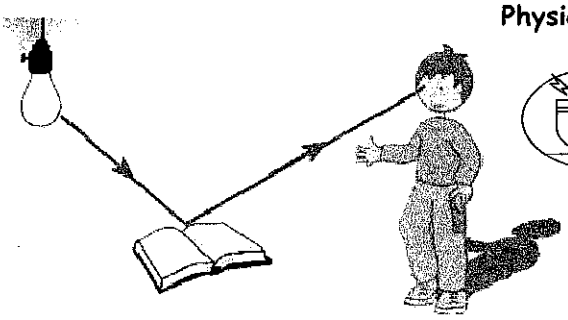
We will be making observations and describing the effects of:

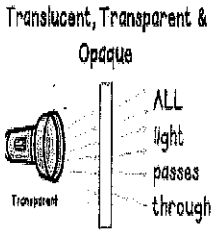
Gravity

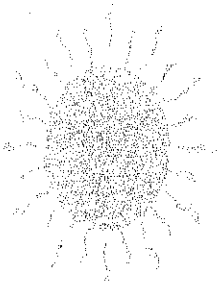
Air and water resistance

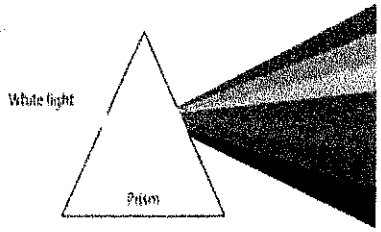
Drag forces

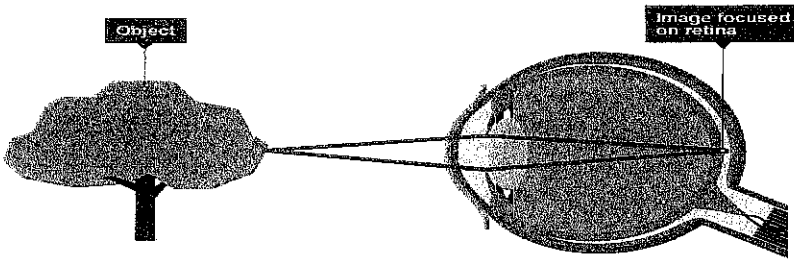
Physics - Light











Key Vocabulary

Periscope - An apparatus consisting of a tube of attached to a set of mirrors or prisms through which an observer can see things that are otherwise out of sight

Reflection - The throwing back by a body or surface of light, heat or sound without absorbing it

Refraction - The bending of light as it passes from one substance to another with the bending caused by the difference in density between two substances

Shadow - A dark area or shape produced by a body coming between rays of light and a surface

Spectrum - A band of colours, as seen in rainbows, produced by separation of the components of light by their different degrees of refraction

Working Scientifically

We will be measuring and recording:

How shadows are formed

How light travels

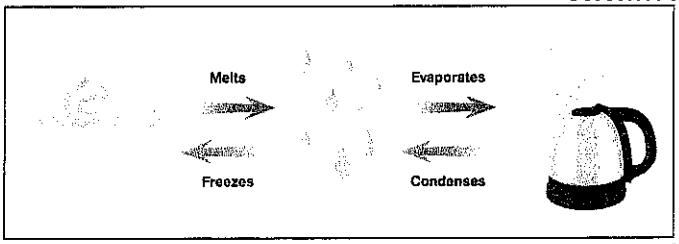
What materials are opaque, transparent or translucent

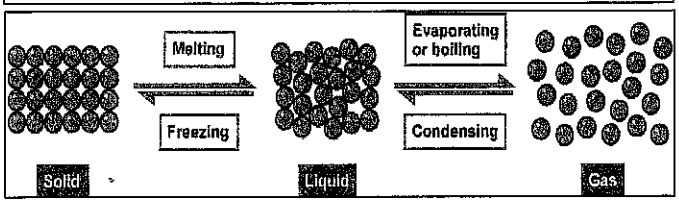
We will be observing:

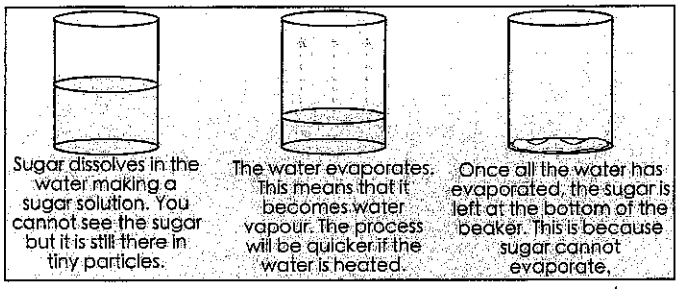
What the difference between reflection and refraction is

How light travels around corners

Chemistry - Materials







Working Scientifically

We will be making enquiries about:

How to recover a substance from a solution.

How to separate mixtures

Whether changes to materials can be reversible

We will make observations and describe the changes in the following processes:

Evaporation,

Dissolving,

Sieving and filtering

Key Vocabulary

Conductor - A material or device which allows heat or electricity to carry through

Dissolve - When something solid mixes with a liquid and becomes part of the liquid

Flexible - Capable of bending easily without breaking

Gas - An air-like fluid substance which expands freely to fill any space available

Insulator - A substance which does not readily allow the passage of heat or sound

Irreversible - Cannot be reversed back to its original state

Liquid - A substance that flows freely but can be measured by volume e.g. water or oil

Magnetic - Capable of being magnetised or attracted by a magnet

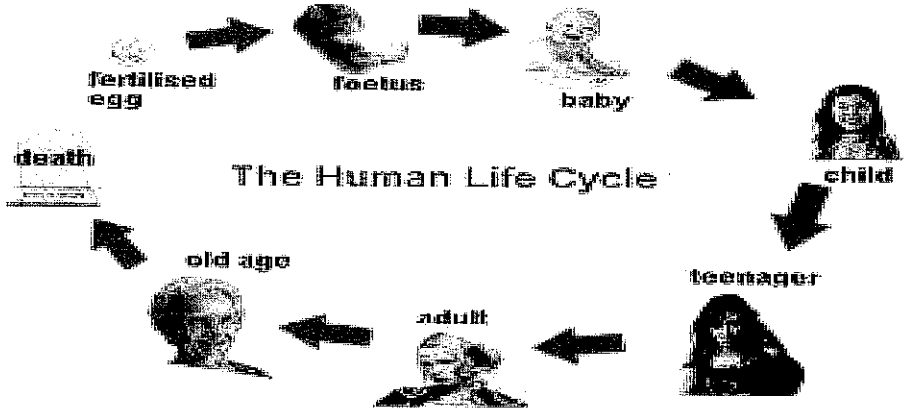
Opaque - Not able to be seen through, not transparent

Reversible - Able to be reversed back to its original state

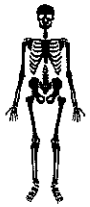
Solid - Firm and stable in shape, not a liquid or fluid

Soluble - Able to be dissolved, especially in water

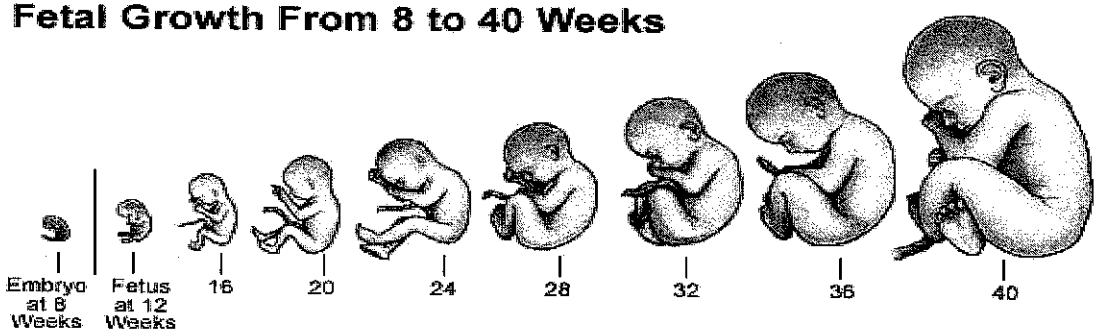
Transparent - Allows light to pass through so that objects behind can be seen



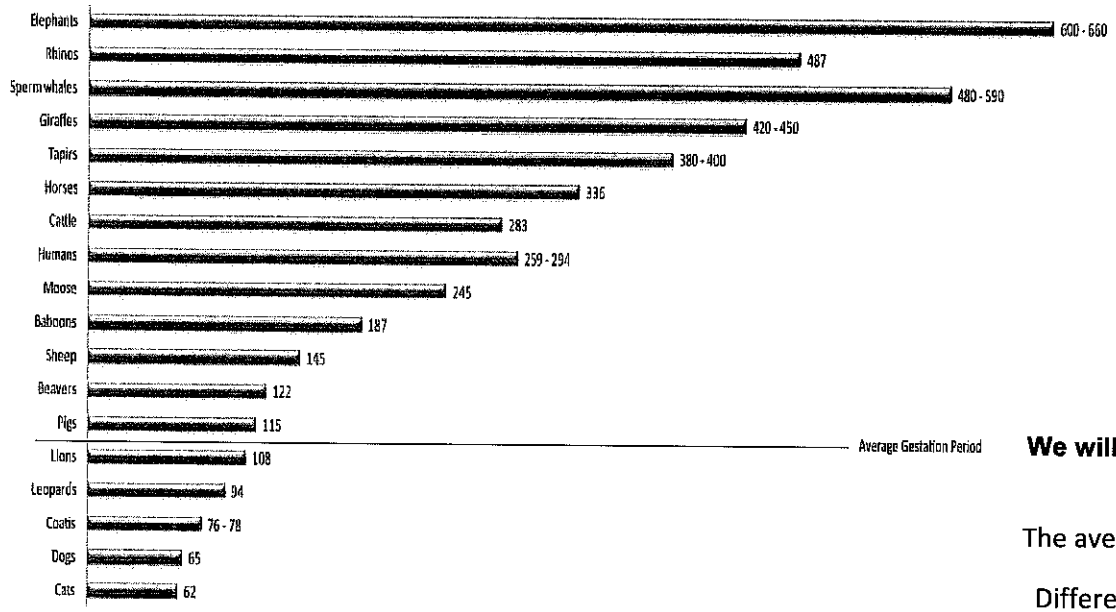
Biology - Animals and Humans



Fetal Growth From 8 to 40 Weeks



Average gestation period by days



Key Vocabulary

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Adult - A person who is fully grown or developed

Asexual reproduction - Offspring get genes from one parent so are clones of their parents

Child - A young human being below the age of puberty or below the legal age of majority

Foetus/ fetus - An unborn or unhatched offspring of a mammal, in particular an unborn human more than eight weeks after conception

Gestation - The process or period of developing inside the womb between conception and birth

Life expectancy - The average period that you may expect to live

Reproduction - The production of offspring by a sexual or asexual process

Working Scientifically

We will be gathering data and reporting about:

The averages of height in men and women

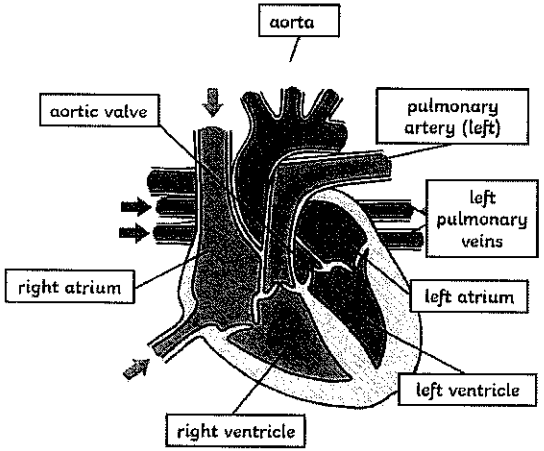
Differences between children and adults

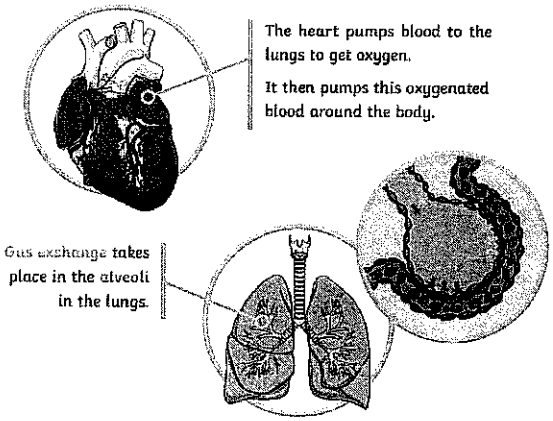
We will be enquiring about:

The changes in human develop

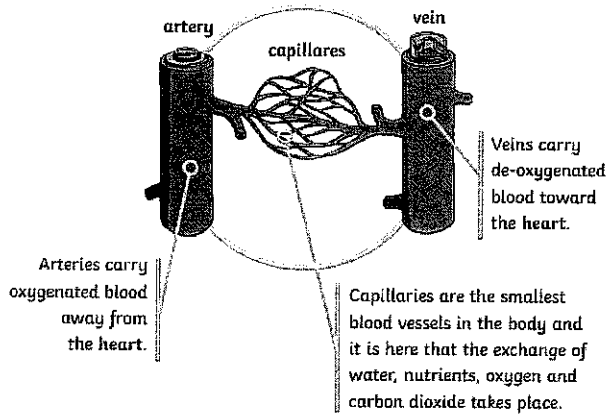
How our bodies differ from birth to old age

Biology – Circulatory System

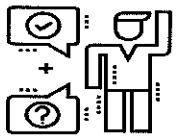




Blood Vessels



Working Scientifically



We will be explaining:

The functions of the circulatory system

The different roles of the heart, blood vessels and blood

We will be reporting:

The effect of exercise

The relationship between diet and exercise

On why nutrients are important

Key Vocabulary

Arteries - Muscular-walled tubes that transport blood from the heart to other parts of the body

Blood - Red liquid that circulates in arteries and veins, carrying oxygen to and carbon dioxide from tissues of the body

Blood vessel - A tubular structure carrying blood through the tissues and organs

Circulatory system - The system that circulates blood through the body, including the heart, blood vessels and blood

Heart - A hollow muscular organ that pumps the blood through the circulatory system

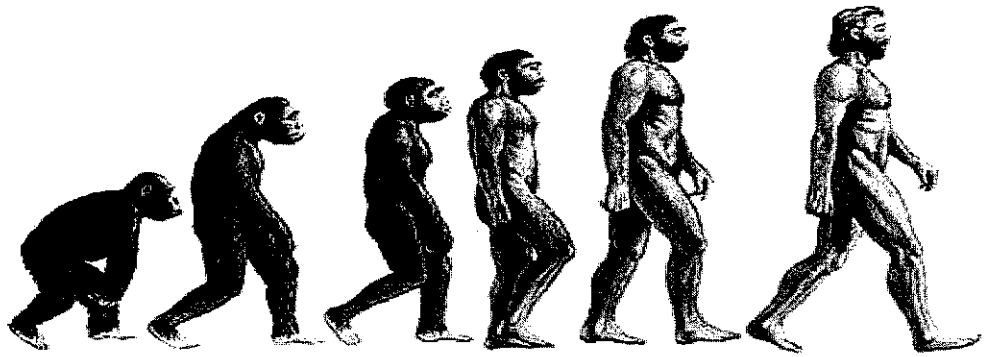
Lungs - Pair of organs situated within the ribcage where oxygen can pass into the blood and carbon dioxide be removed

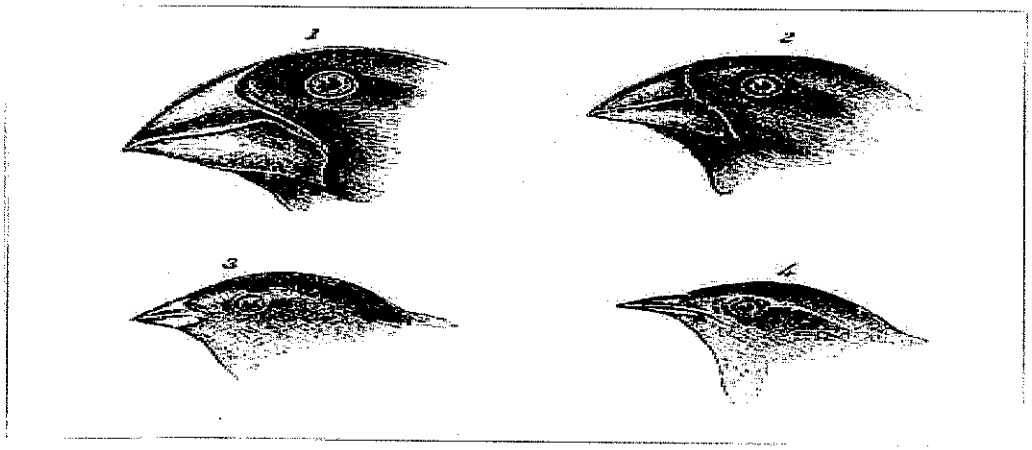
Nutrients - A substance that provides nourishment essential for the maintenance of life and for growth

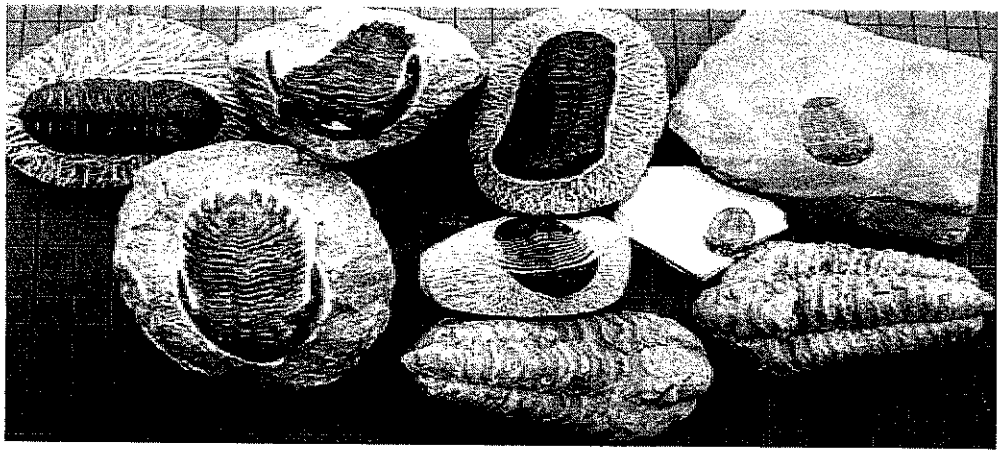
Organs - Part of an organism that is typically self-contained and has a specific vital function (e.g. the heart and lungs)

Veins - Tubes forming part of the blood circulation system of the body, carrying mainly oxygen-depleted blood towards the heart

Biology – Evolution and Inheritance







Key Vocabulary

Adaptation – The process of change so that an organism or species can become better suited to their environment

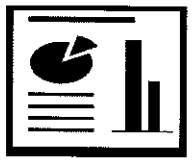
Environment – The surroundings or conditions in which a person, animal, or plant lives

Evolution – The process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth

Fossil – The remains or impression of a prehistoric plant or animal embedded in rock and preserved

Inherit – To gain a quality, characteristic or predisposition genetically from a parent or ancestor

Offspring – A person's child or children/ an animal's young



Working Scientifically

We will be reporting about:

How plants and animals have evolved over time

The theory of evolution

Inheritance of plants and animals

We will be making enquiries about:

How fossils are formed

Biology - Living Things

Photosynthesis

Word equation

Carbon dioxide + Water —(Light, Chlorophyll)→ Glucose + Oxygen

Symbol equation

$6CO_2 + 6H_2O \xrightarrow{\text{Light, Chlorophyll}} C_6H_{12}O_6 + 6O_2$

Key Vocabulary

Fertilise - The male part meeting the female part to produce a new living thing

Glucose - A sugar

Nectar - a sugary fluid within flowers to encourage pollination

Photosynthesis - How plants make their food. Turn sunlight into nutrients from carbon dioxide and water.

Pollen - a fine powdery substance, discharged from the male part of the flower that fetilises the female part

Pollination - transferring pollen to allow fertilisation

Carbon dioxide - Carbon dioxide is a colorless gas with a density about 60% higher than that of dry air.

Chlorophyll - a green photosynthetic pigment found in plants and algae.

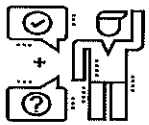
Types of pollination:

1. Self pollination
2. Wind pollination
3. Insect pollination

Life Processes:

1. Movement
2. Respiration
3. Sensitivity
4. Growth
5. Reproduction
6. Excretion
7. Nutrition

Working Scientifically



We will be explaining:

Why the life processes are important for living things

Similarities and differences of the processes between plants and living things

We will be making enquiries about:

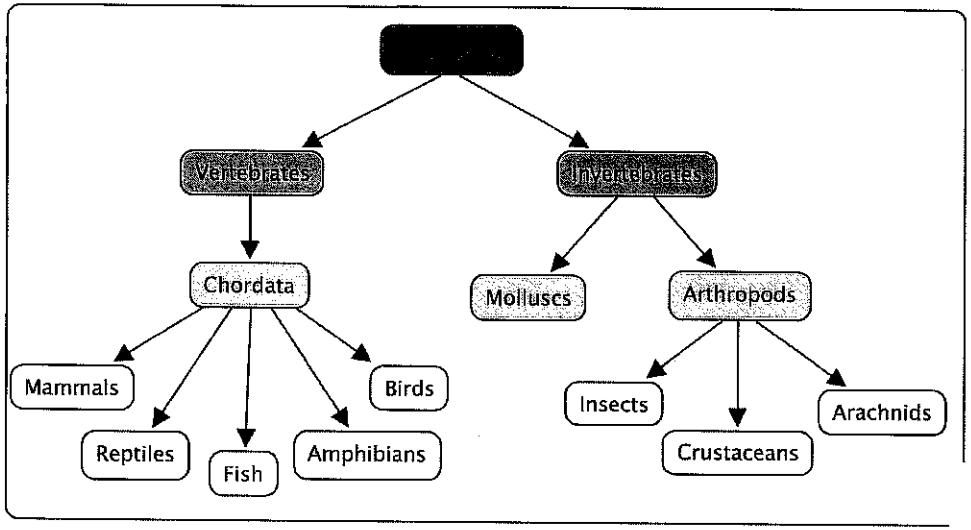
Why pollination may differ in living things

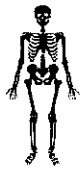
How pollination may differ in living things

Biology – Classification and Life Cycles

Domain	Bacteria	Archaea	Eukarya			
Kingdom	Bacteria	Archaea	Protista	Fungi	Plantae	Animalia
Example						
Characteristics	Bacteria are simple unicellular organisms.	Archaea are simple unicellular organisms that often live in extreme environments.	Protists are unicellular and are more complex than bacteria or archaea.	Fungi are unicellular or multicellular and absorb food.	Plants are multicellular and make their own food.	Animals are multicellular and take in their food.

Classification





Key Vocabulary

Amphibian – A cold-blooded vertebrate animal that compromises frogs, toads, newts, salamanders and caecilians

Arachnid – An animal that has eight legs and a body formed of two parts

Habitat – The natural home or environment of an animal, plant or other organism

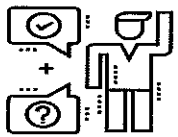
Invertebrate – An animal lacking a backbone

Microorganism – A microscopic organism, especially a bacteria, virus or fungus

Reptile – A vertebrate animal that has dry scaly skin and typically lay soft-shelled eggs on land

Vertebrate – An animal with possession of a backbone/ spinal column

Working Scientifically



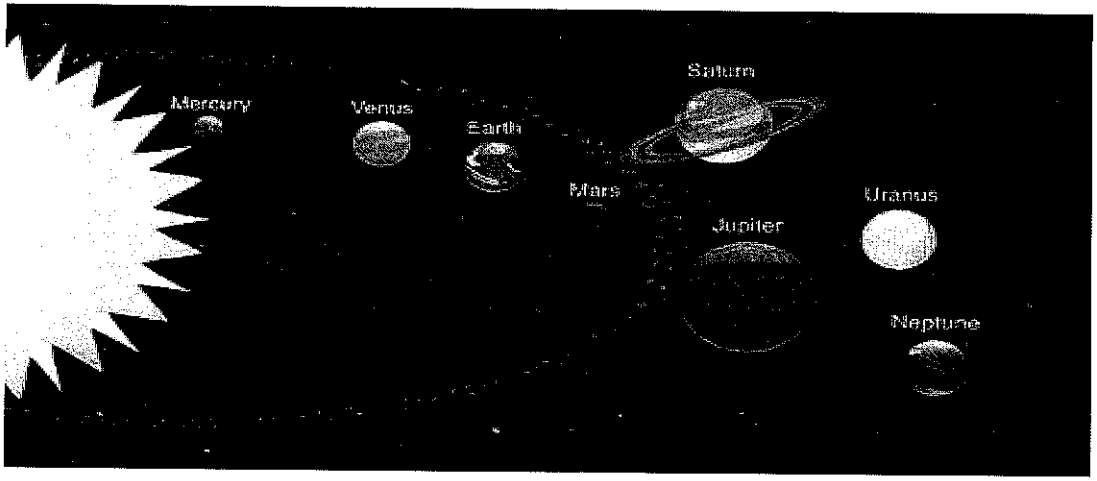
We will be explaining:

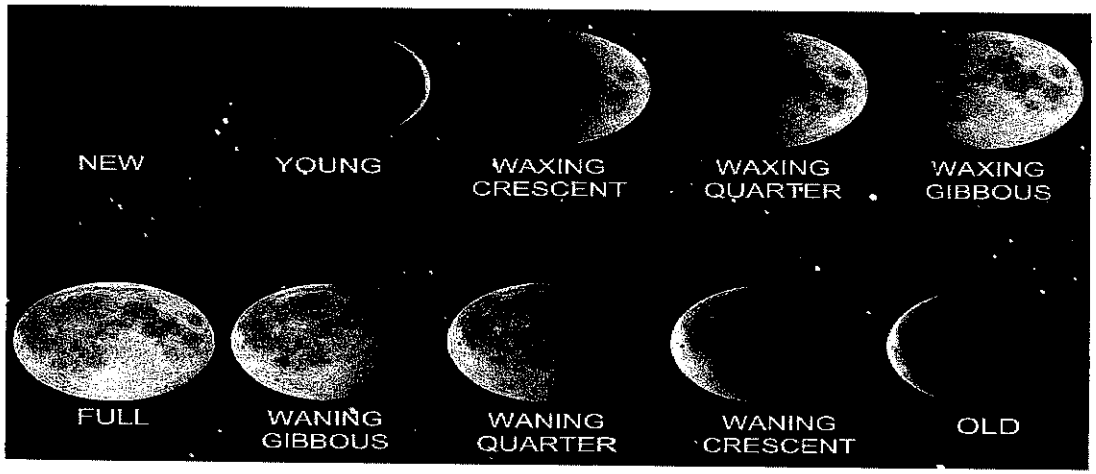
Similarities and differences between life cycles

And using different classification keys

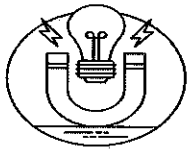
We will be recording:

Different ways to classify animals and plants





Physics - Earth and Space



Key Vocabulary

Axis - An imaginary line about which a body rotates

Dwarf planet - A celestial body resembling a small planet but lacking certain technical criteria to be classed as a planet e.g. Pluto

Geocentric - Where people believed the earth was at the centre of the solar system

Heliocentric - Representing the sun as the centre of the solar system, the modern view of the solar system

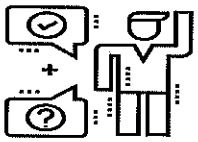
Orbit - The regularly repeated oval course of a celestial object around a star or planet

Planet - A celestial body moving in orbit round a star

Rotation - The action of rotating about an axis or centre

Solar system - The collection of eight planets and their moons in orbit round the sun

Working Scientifically



We will be explaining:

Scientific evidence and using it to support or refute ideas

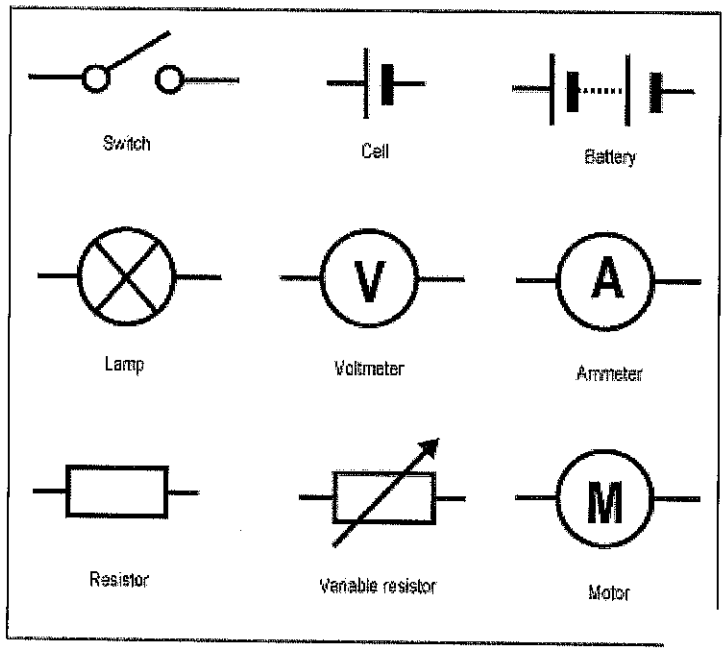
Movements of the earth, moon and sun

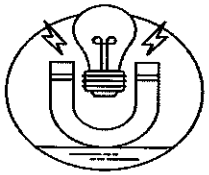
We will be gathering data:

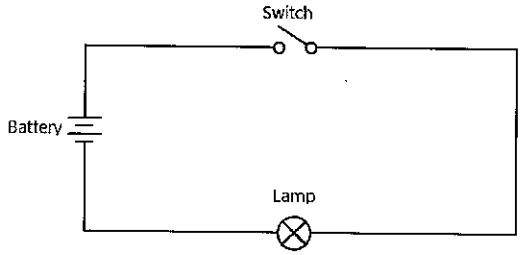
On the phases of the moon

On how we get the calendar year, months, seasons

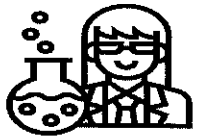
Physics - Electricity







Working Scientifically



We will be testing and predicting:

How to make a motor and buzzer work

How to make bulbs brighter

Patterns of voltage and various components

We will be using:

Symbols to represents components in circuits

Key Vocabulary

Battery - the power source in a circuit made up of two or more cells

Break - an interruption in the flow of electricity

Lamp - an electrical component which lights up in a circuit

Buzzer - an electrical component that changes electrical energy into sound

Current - a flow of electricity around a circuit

Electrical conductor - a material that allows electricity to flow through it e.g. metals

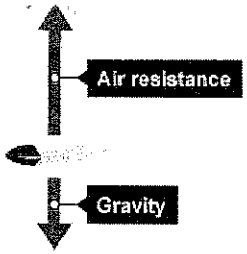
Electrical insulator - a material which does not allow electricity to flow through it

Fuse - an electrical component which will burn out in order to break a circuit in an emergency

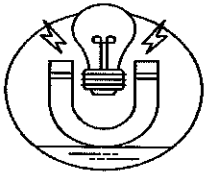
Motor - an electrical component which rotates causing something to turn

Resistor - an electrical conductor that makes it difficult for electricity to flow in a circuit

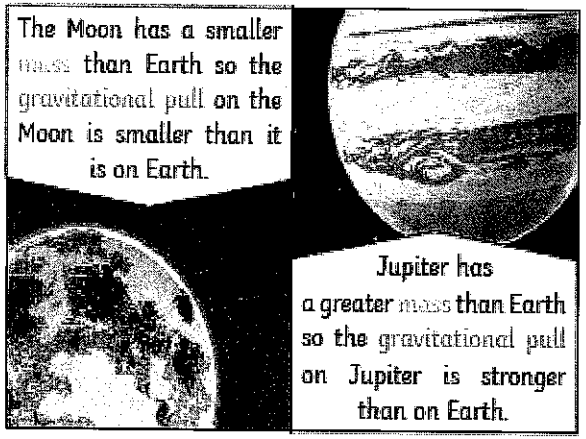
Terminal - the end of a cell or battery - each cell has a positive (+) and a negative (-) terminal



Physics - Forces

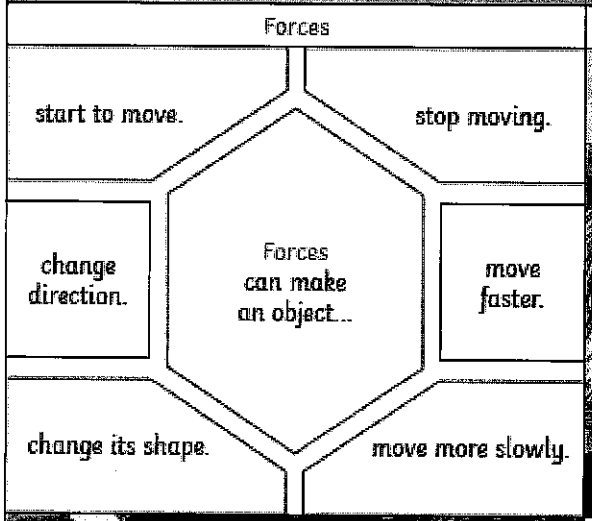


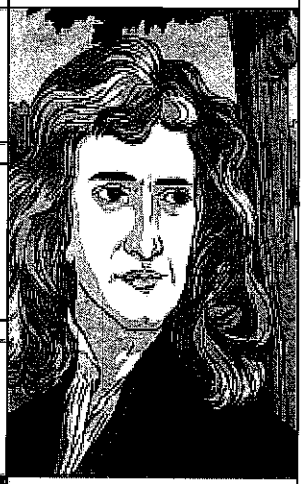
Key Vocabulary	
forces	Pushes or pulls.
gravity	A pulling force exerted by the Earth (or anything else which has mass).
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground.
weight	The measure of the force of gravity on an object.
mass	A measure of how much matter (or 'stuff') is inside an object.

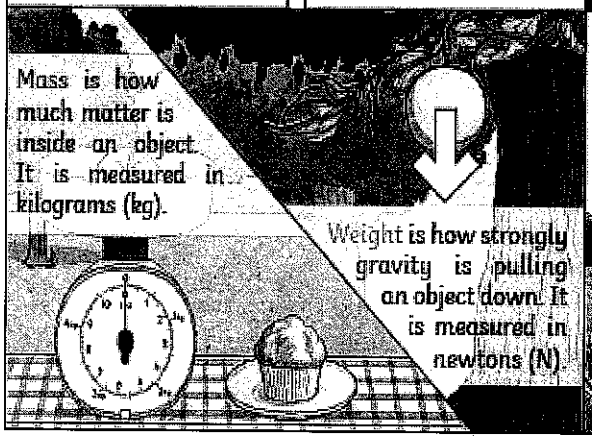


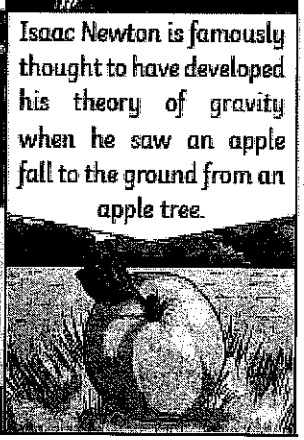
To look at all the planning resources linked to the Forces unit

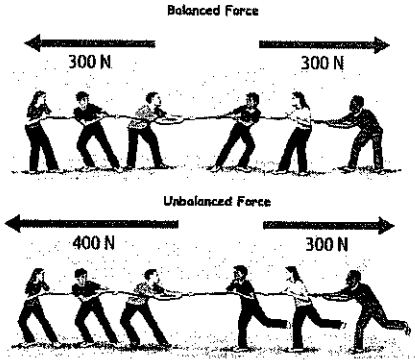
Key Knowledge



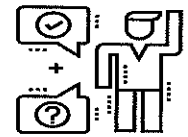








Working Scientifically



We will be explaining:

Scientific evidence and using it to support or refute ideas.

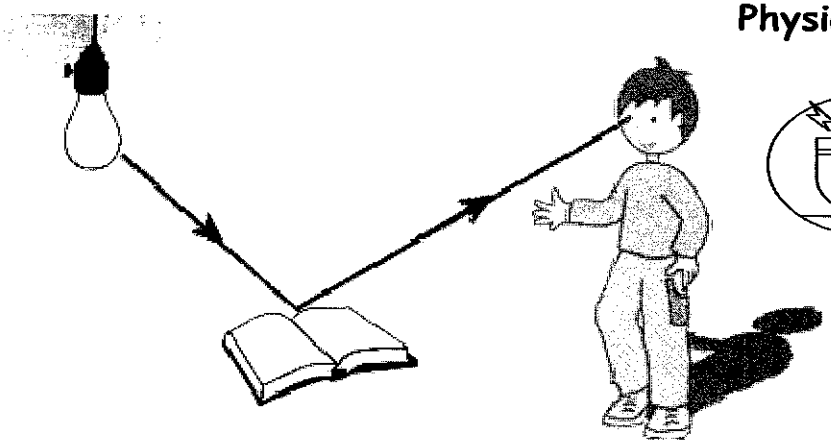
We will be making observations and describing the effects of:

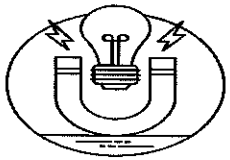
Gravity

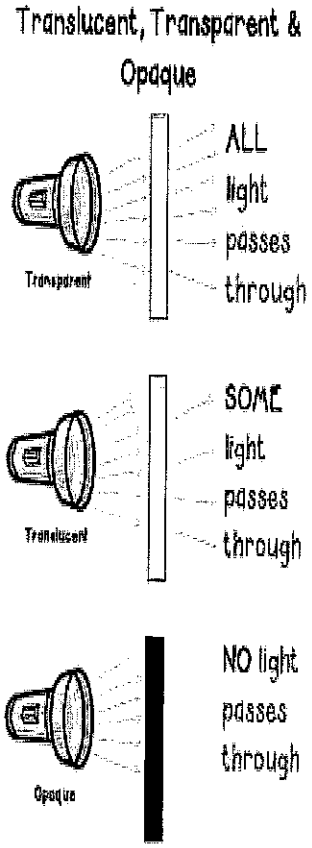
Air and water resistance

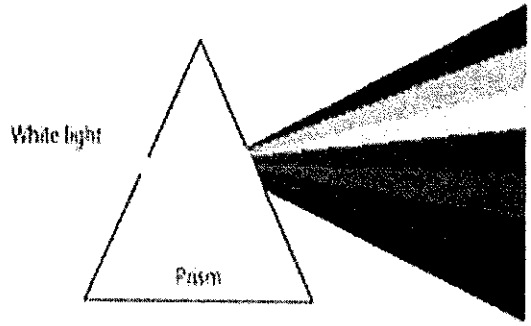
Drag forces

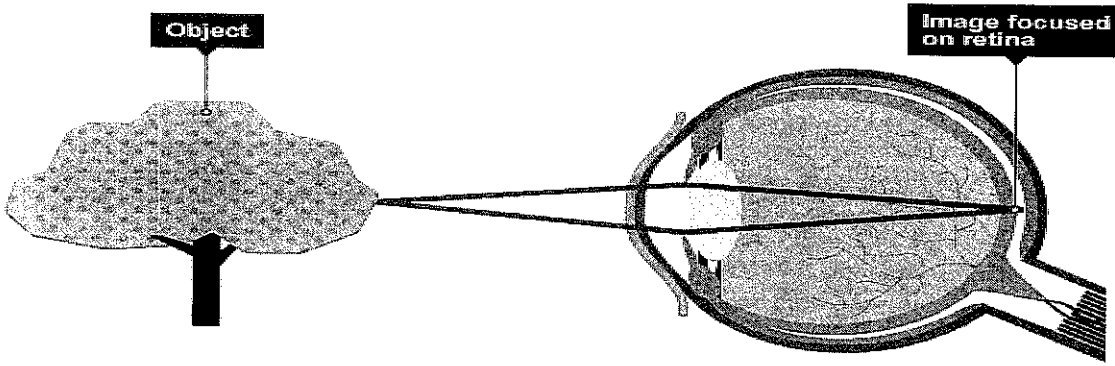
Physics - Light











Key Vocabulary

Periscope – An apparatus consisting of a tube of attached to a set of mirrors or prisms through which an observer can see things that are otherwise out of sight

Reflection – The throwing back by a body or surface of light, heat or sound without absorbing it

Refraction – The bending of light as it passes from one substance to another with the bending caused by the difference in density between two substances

Shadow – A dark area or shape produced by a body coming between rays of light and a surface

Spectrum – A band of colours, as seen in rainbows, produced by separation of the components of light by their different degrees of refraction

Working Scientifically

We will be measuring and recording:

How shadows are formed

How light travels

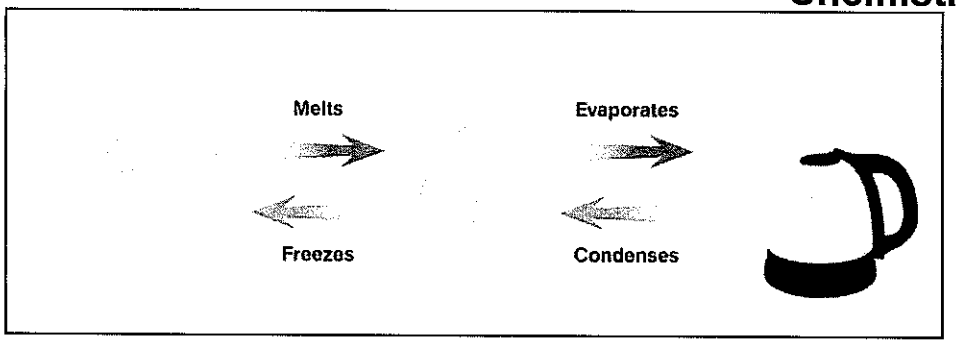
What materials are opaque, transparent or translucent

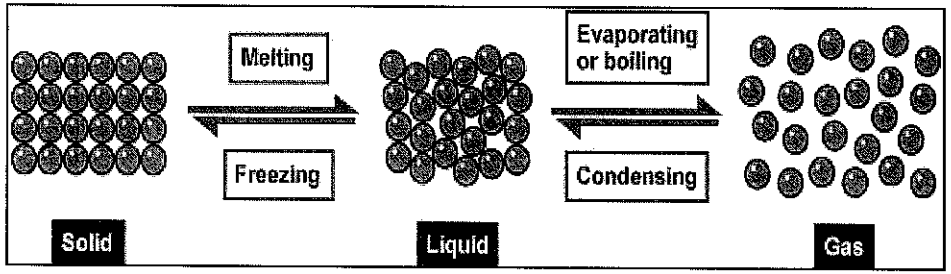
We will be observing:

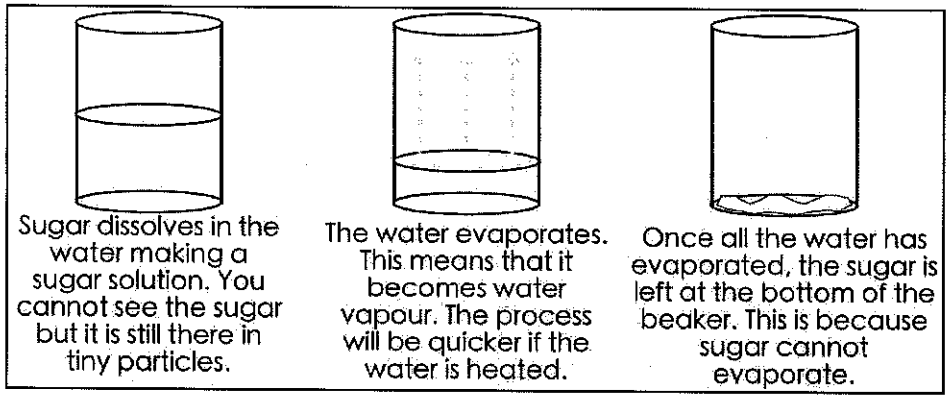
What the difference between reflection and refraction is

How light travels around corners

Chemistry - Materials







Working Scientifically

We will be making enquiries about:

How to recover a substance from a solution.

How to separate mixtures

Whether changes to materials can be reversible

We will make observations and describe the changes in the following processes:

Evaporation,

Dissolving,

Sieving and filtering

Key Vocabulary

Conductor – A material or device which allows heat or electricity to carry through

Dissolve – When something solid mixes with a liquid and becomes part of the liquid

Flexible – Capable of bending easily without breaking

Gas – An air-like fluid substance which expands freely to fill any space available

Insulator – A substance which does not readily allow the passage of heat or sound

Irreversible – Cannot be reversed back to its original state

Liquid – A substance that flows freely but can be measured by volume e.g. water or oil

Magnetic – Capable of being magnetised or attracted by a magnet

Opaque – Not able to be seen through, not transparent

Reversible – Able to be reversed back to its original state

Solid – Firm and stable in shape, not a liquid or fluid

Soluble – Able to be dissolved, especially in water

Transparent – Allows light to pass through so that objects behind can be seen