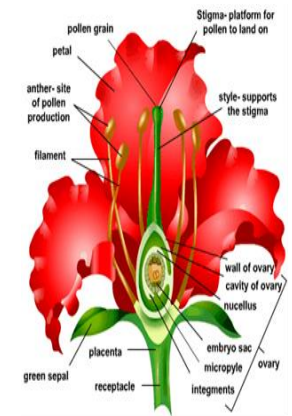


Living things and their habitats/Animals, including humans

Knowledge	Skills
The differences in life cycles of mammal, amphibians, insects and birds.	To compare and contrast these life cycles and report on these findings in a table, using scientific vocabulary .
The life process of reproduction in plants - asexual reproduction.	Observe and take part in a practical demonstration of how to take cuttings from a geranium plant and a spider plant to grow a new plant- asexual reproduction.
The life processes of reproduction in plants- sexual reproduction.	Dissect the parts of a flower, and present their knowledge of plant sexual reproduction in a cartoon which depicts the role of the different parts of a flower.
The changes as humans develop to old age.	Present a human timeline from birth to old age, that has details of the changes in the growth and development of humans.
That animals have different gestation times, depending on their size.	Compare data on the gestation period of other animals to humans, through a graph. Describe what this shows us about the gestation length of other animals depending on their size. Observe changes over a period of time in an animal as it grows from egg to hatching.
Famous scientist	Sir David Attenborough

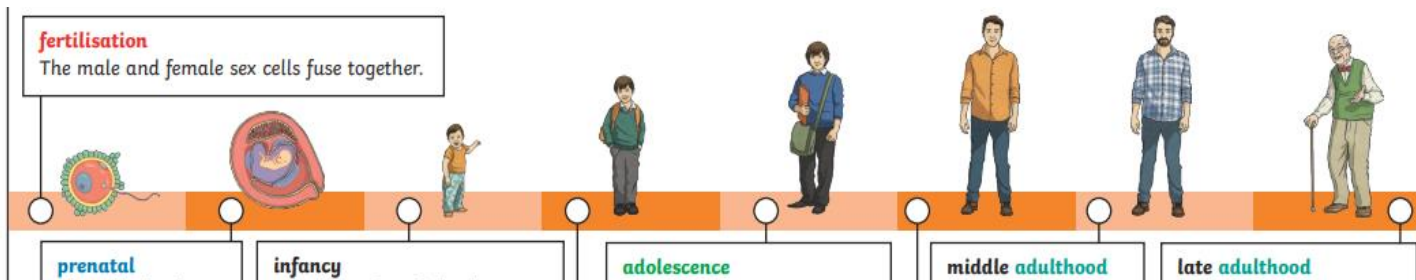
Some plants, such as strawberry plants, potatoes, spider plants and daffodils use **asexual reproduction** to create a new plant. They are identical to the parent plant.



Key Words

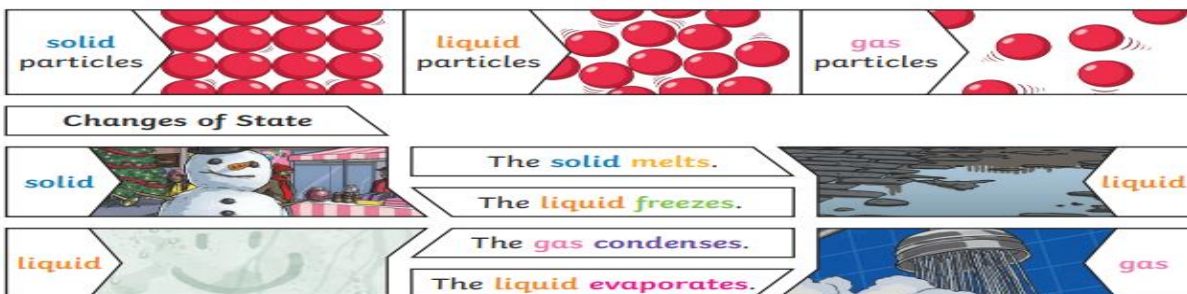
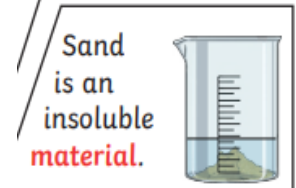
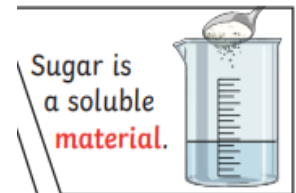
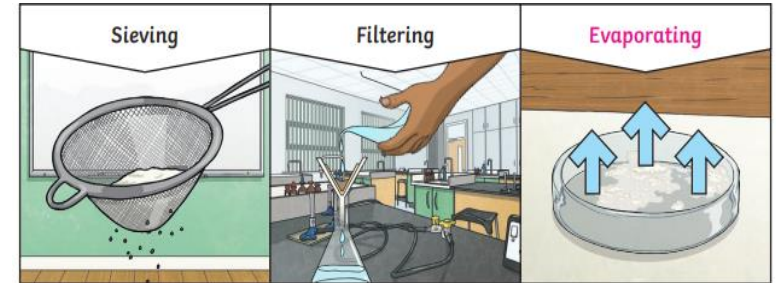
Bird fish amphibian reptile
 mammal invertebrate
 carnivore herbivore omnivore
 life cycle reproduction
 movement respiration
 sensitivity growth nutrition
 gestation birth fertilization
 germination pollination seed
 dispersal predator prey

Puberty life cycle gestation
 infant womb growth baby
 birth toddler teenager adult old
 age adolescence



Properties and changes of materials

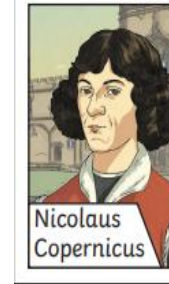
Knowledge	Skills
The physical properties of everyday materials and how to group them.	To test, explore and compare the physical properties of everyday materials. To group everyday materials. Record data in a table.
Give reasons, based on evidence from comparative tests, for the particular uses of everyday materials, including metals, wood and plastic.	Using a range of familiar household equipment carrying out simple practical tests that help demonstrate the suitability of the materials for their use.
The property of a thermal insulator can change with the type of material.	To perform a fair test to discover the best insulator for a cup of tea. Make a prediction and be able to explain the need to control variables . Collect results by taking measurements of temperature with increasing accuracy and precision and take repeat readings . Draw a graph to show the pattern and interpret the insulating properties of the various materials. Concluding investigation and relating this back to original question.
A solution is formed and know how to recover a substance from a solution.	Demonstrate in a labelled scientific diagram how sugar in a cup of tea makes a solution. Take part in a practical exploration to recover salt from muddy water from the bottom of the sea.
How to separate a mixture.	Record through simple scientific diagrams , how to separate mixtures of solids through sieving and filtering a mud sample from the bottom of the sea.
Dissolving, mixing and changes of state are reversible changes.	Use relevant scientific language and simple diagrams to discuss, communicate and justify their scientific ideas which explain reversible changes.
Some changes result in the formation of a new material- irreversible change.	To observe and discuss how new materials are formed when we cook and when we mix some kitchen products. Discuss how chemists discover new materials e.g. Ruth Benerito who discovered wrinkle-free cotton. Discuss the creative use of new materials such as polymers eg nylon, super-sticky eg post-it notes and super-thin materials eg in electronic devices.
Famous scientist	Joseph Priestly – the man who is responsible for fizzy drinks.



Key Words		
Property	transparent	opaque
soluble	insoluble	solute
solution	solvent	conduct
insulate	thermal	magnetic
filter	filtrate	evaporate
gas	solid	liquid
distillation	chromatography	state
burning	oxygen	particles

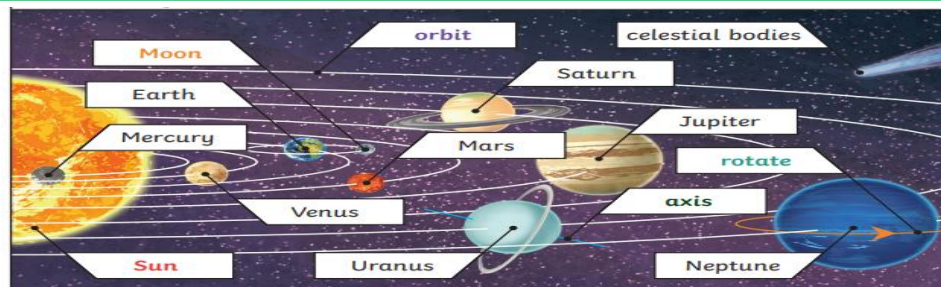
Earth and Space

Knowledge	Skills
The movement of Earth and other planets relative to the Sun.	Using scientific diagrams and a physical model to demonstrate the arrangement of the solar system, and the movement of the planets around the Sun.
The movement of the moon relative to the Earth.	Using scientific diagrams and a physical model, to show how the moon moves relative to the Earth.
The Earth, Sun and Moon as approximately spherical bodies.	Identifying scientific evidence that has been used to support or refute ideas or arguments (flat Earth argument).
The Earth's rotation brings about day and night.	To demonstrate through a physical model how Earth and night occur. Comparing the time of day at different places on the Earth. Constructing a model of a simple shadow clocks and sundials. Research why some people think that structures such as Stonehenge might have been used as astronomical clocks.
To relate the size/weight of a meteor to the crater it causes on impact.	To perform a fair test to investigate the size of craters formed by meteors of different sizes/weights. Make a prediction , collect results in a table, and understand why it is important to take repeat recordings and to control variables . Interpret the result and report their conclusion to the investigation in written form.
Famous scientist	May Jamieson



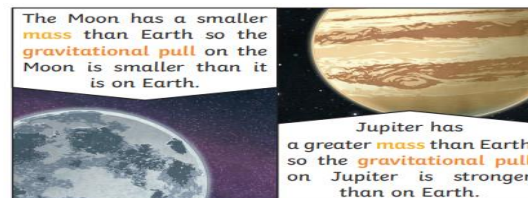
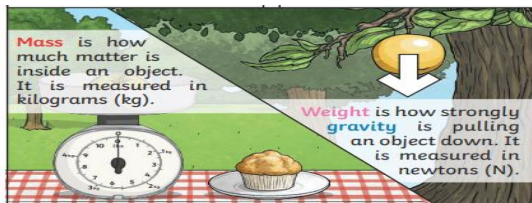
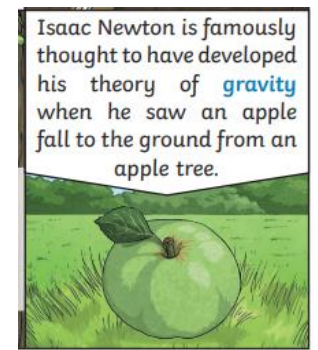
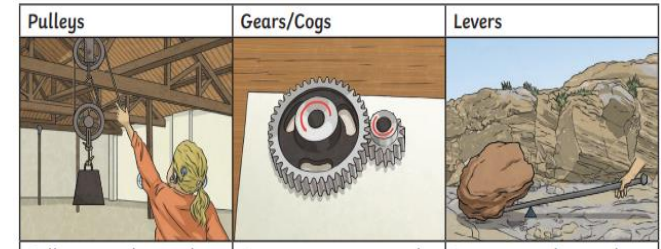
Key Words

Gravity star planet
 hemisphere attract
 attraction weight moon
 orbit revolve rotation
 axis equator season
 winter autumn mass
 solar system geocentric
 heliocentric sphere ellipse
 phases shadow
 temperature distance



Forces

Knowledge	Skills
The force of gravity acts between the Earth and falling objects.	To use scientific diagrams to show how objects fall towards the centre of the Earth, due to the force of gravity.
Air resistance is a force acting between moving surfaces.	To perform a fair test to discover the best size/material for a parachute to drop instruments safely that will research a crater on a planet. Make a prediction , control variables and collect repeat recordings using a stopwatch. Interpret results to say which size/material makes the safest parachute. Using test results to make predictions to set up further comparative and fair tests once they have evaluated their investigation.
Water resistance is a force acting between moving surfaces.	Explore resistance in water by making and testing of different shapes/sizes/weights of plasticine plankton falling through a water column. Relate this back to the concept of gravity.
Friction is a force acting between moving surfaces.	Using test results from Year 3 investigation into surfaces on a ramp and distance travelled by a toy car to make predictions and suggest further comparative and fair tests .
Levers, pulleys and gears allow a smaller force to have a greater effect.	Explore through practical investigation , the effect a lever can have on the amount of effort needed to lift a load using simple classroom equipment. Report findings orally. Explore through practical investigation , the effect pulleys can have on the amount of effort needed to lift a load using simple scientific equipment . Report findings orally. Using a forcemeter to make comparisons between the amount of effort needed to lift a load. Report findings orally.
Famous scientist	Isaac Newton



Key Words	
Force	newtons gravity
friction	air resistance
upthrust	balanced
unbalanced	Gear lever
pulley	planet contact
non-contact	drag thrust
lift	opposite weight mass
acceleration	deceleration