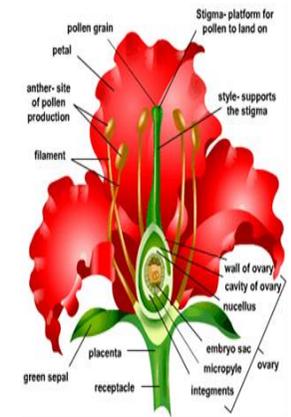
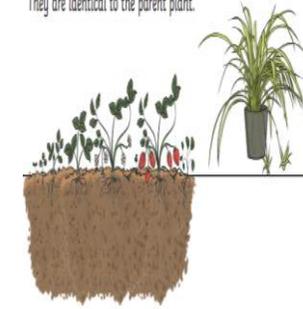


**Living things and their habitats/Animals, including humans**

Knowledge	Skills
The differences in life cycles of mammal, amphibians, insects and birds.	To <b>compare</b> and contrast these life cycles and <b>report</b> on these findings in a table, using <b>scientific vocabulary</b> .
The life process of reproduction in plants - asexual reproduction.	<b>Observe</b> and take part in a <b>practical demonstration</b> 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.	<b>Dissect</b> the parts of a flower, and <b>present</b> 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.	<b>Present</b> 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.	<b>Compare</b> 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**

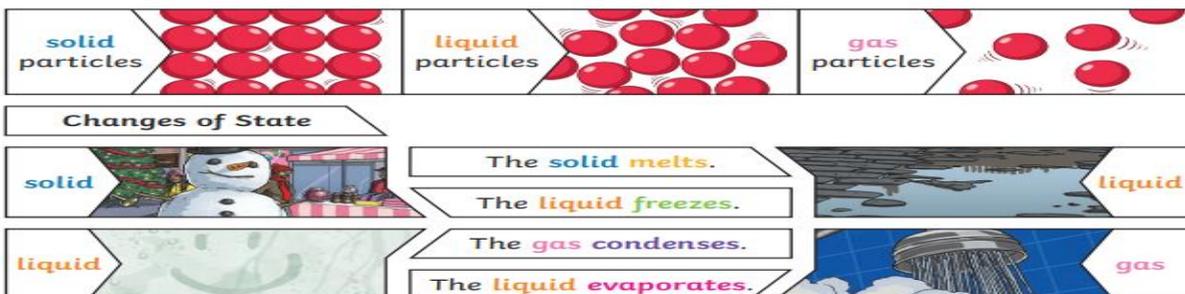
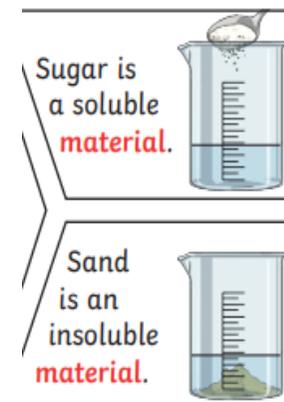
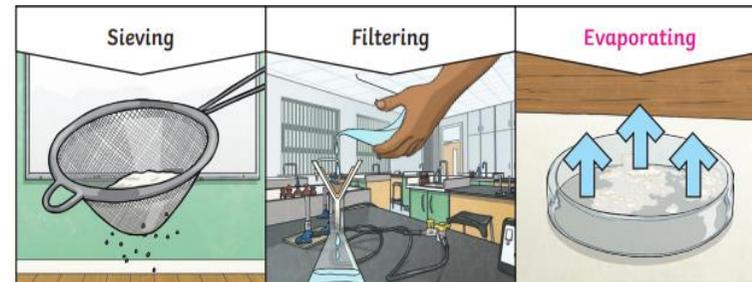
Bird fish amphibian reptile  
 mammal invertebrate  
 carnivore herbivore omnivore  
 life cycle reproduction  
 movement respiration  
 sensitivity growth nutrition  
 gestation birth fertilization  
 germination pollination seed  
 dispersal predator prey

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



Properties and changes of materials

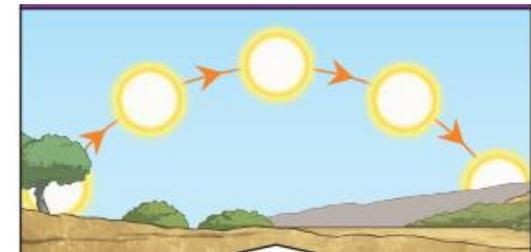
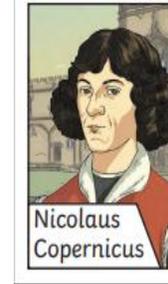
Knowledge	Skills
The physical properties of everyday materials and how to group them.	To <b>test, explore</b> and <b>compare</b> the physical properties of everyday materials. To <b>group</b> everyday materials. <b>Record</b> data in a table.
Give reasons, based on evidence from comparative tests, for the particular uses of everyday materials, including metals, wood and plastic.	Using a range of familiar household equipment carrying out <b>simple practical tests</b> 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 <b>fair test</b> to discover the best insulator for a cup of tea. Make a <b>prediction</b> and be able to explain the need to <b>control variables</b> . <b>Collect results</b> by taking measurements of temperature with increasing accuracy and precision and <b>take repeat readings</b> . Draw a graph to show the pattern and interpret the insulating properties of the various materials. <b>Concluding</b> investigation and relating this back to original question.
A solution is formed and know how to recover a substance from a solution.	<b>Demonstrate</b> in a labelled scientific diagram how sugar in a cup of tea makes a solution. Take part in a <b>practical</b> exploration to recover salt from muddy water from the bottom of the sea.
How to separate a mixture.	Record through simple <b>scientific diagrams</b> , 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 <b>scientific language</b> 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 <b>observe</b> and <b>discuss</b> how new materials are formed when we cook and when we mix some kitchen products. <b>Discuss</b> 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

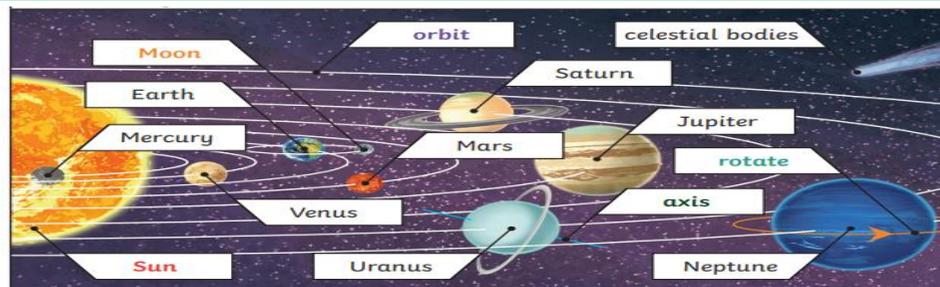
**Earth and Space**

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



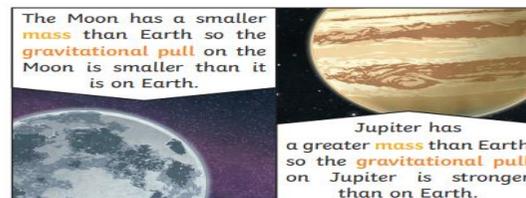
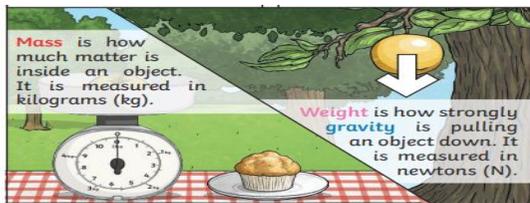
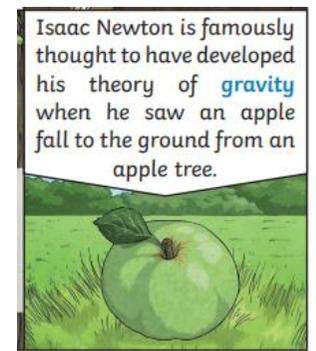
**Key Words**

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 <b>scientific diagrams</b> 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 <b>fair test</b> to discover the best size/material for a parachute to drop instruments safely that will research a crater on a planet. Make a <b>prediction</b> , <b>control variables</b> and <b>collect repeat recordings</b> using a stopwatch. <b>Interpret</b> results to say which size/material makes the safest parachute. Using test results to make <b>predictions</b> to set up further <b>comparative and fair tests</b> once they have evaluated their investigation.
Water resistance is a force acting between moving surfaces.	<b>Explore</b> 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 <b>predictions</b> and suggest further <b>comparative and fair tests</b> .
Levers, pulleys and gears allow a smaller force to have a greater effect.	Explore through <b>practical investigation</b> , the effect a lever can have on the amount of effort needed to lift a load using simple classroom equipment. <b>Report</b> findings orally. Explore through <b>practical investigation</b> , the effect pulleys can have on the amount of effort needed to lift a load using simple <b>scientific equipment</b> . <b>Report</b> findings orally. Using a forcemeter to <b>make comparisons</b> between the amount of effort needed to lift a load. <b>Report</b> 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