

Year 3 Science

ALL TOPICS will be taught using practical scientific methods

Animals including Humans – Teeth, Digestion and Nutrition.

Objectives	Notes and guidance	Activities/Experiments
<ul style="list-style-type: none">- Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.- Describe the ways in which nutrients and water are transported within animals, including humans.- Describe the simple functions of the basic parts of the digestive system in humans.- Identify the different types of teeth in humans and their simple functions.	<ul style="list-style-type: none">- Learn about the importance of nutrition (including a balanced diet) finding out how different parts of the body have special functions.- Introduce the main body parts associated with the digestive system, such as mouth, tongue, teeth, oesophagus, stomach and intestine and their special functions.	<ul style="list-style-type: none">- Compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat.- Research different food groups and how they keep us healthy and design meals base on what they find out.- Work scientifically by: comparing the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after them.- Draw and discuss their ideas about the digestive system an compare them with models or images.- Make a 3D model of the digestive system.- Tight experiment – Put cold porridge into a leg of a pair of tights. Demonstrate the peristaltis movement and how the liquid and the small solids come out, but the rest stays in.

Animals including Humans - Skeleton

Objectives	Notes and guidance	Activities/Experiments
<ul style="list-style-type: none">- Identify that humans and some animals have skeletons and muscles for support, protection and movement.- Look at the different joints that allow movement.	<ul style="list-style-type: none">- Introduce the main body parts associated with the skeletal and muscular system, finding out how different parts of the body have special functions.	<ul style="list-style-type: none">- Work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons.- Make a paper model of the skeleton.

Space

Objectives	Notes and guidance	Activities/Experiments
<ul style="list-style-type: none">- To know that the Earth, Sun and Moon are spheres.- To know the 8 planets of our Solar System.	<ul style="list-style-type: none">- Lear that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was re-classified as a 'dwarf planet' in 2006).- They should understand that the moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).	<ul style="list-style-type: none">- Make a mobile of the Solar System with a fact file about the planets.

Forces - Magnets

Objectives	Notes and guidance	Activities/Experiments
<ul style="list-style-type: none">- To identify that some forces need contact between two objects and some forces act at a distance.- Observe how magnets attract or repel each other and attract some materials and not others.- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.	<ul style="list-style-type: none">- Observe that magnetic forces can be transmitted without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). <p>Note: Pupils do not need to be introduced to 'like' and 'unlike' magnetic poles until Year 5.</p>	<ul style="list-style-type: none">- Work scientifically by: investigating the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not.

Materials – States of Matter

Objectives	Notes and guidance	Activities/Experiments
<ul style="list-style-type: none"> - Compare and group materials together according to whether they are solids, liquids or gases. - Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. - Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (C/C – Geog – Climate and Weather). - To know the water cycle and different states of water. 	<ul style="list-style-type: none"> - Explore a variety of everyday materials and develop simple descriptions of the states of matter (solids can be held in your hands; liquids form a pool not a pile; gases escape from an unsealed container). - Observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled. <p>Note: Do not use materials where heating is associated with chemical change, for example, through baking or burning as this is in Year 6.</p>	<ul style="list-style-type: none"> - Group and classifying a variety of different materials into 3 hoops (Venn Diagram). How could the materials be sorted? How would they be sorted by state? - Exploring the effect of temperature on substances such as chocolate, butter, cream, crayons (for example, to make food such as biscuits and ice-cream for a party). - Observe and record evaporation over a period of time, such as leaving water in various size containers, or different liquids in the same size containers. - Cloud bottle: light a candle, put an upside down glass bottle over it, seal with the mouth a blow into it to create a cloud – Teacher demonstration only. - Demonstrate a kettle boiling, hold over a cold mirror to see the evaporation and condensation. - Create the water cycle in a bag – water in sealed plastic bag on the windowsill.

Electricity – Circuits and Conductors

Objectives	Notes and guidance	Activities/Experiments
<ul style="list-style-type: none">- Identify common appliances that run on electricity.- Construct a simple series electrical circuit.- Identify whether or not a lamp will light in a simple series circuit based on whether or not the lamp is part of a complete loop with a battery.- Recognise that switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.- Recognise some common conductors and insulators, and associate metals with being good conductors.	<ul style="list-style-type: none">- Construct simple series circuits, trying different components, such as bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices.- Pupils should be taught about precautions for working safely with electricity.- Current and voltage should be introduced informally at this stage. <p>Note: Pupils should draw the circuit as a pictorial representation, not using conventional circuit symbols at this stage; these will be introduced in Year 5.</p>	<ul style="list-style-type: none">- Work scientifically by: observing patterns, for example that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.