Year 6 Science

ALL TOPICS will be taught using practical scientific methods

Space

Objectives	Notes and guidance	Activities/Experiments
-Describe the movement of the Earth relative to the Sun in the solar system. -Describe the movement of the Moon relative to the Earth. -Describe the Sun, Earth and Moon as approximately spherical bodies. -Use the idea of the Earth's rotation to explain day and night. To explain seasonal variation by the Earth's tilt.	-Introduce a model of the Sun and Earth that allows the explanation of day and night. **Note:** Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses. Pupils will have learnt about the planets in year 3.	-Work scientifically by: comparing the time of day atdifferent places on the Earth through internet links and direct communication; creating simple models of the solar system; constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day; working out how places such as Stonehenge were used as astronomical clocks. (C/C – Maths)

Materials - Changes

Objectives	Notes and guidance	Activities/Experiments
-Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. -Understand how some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. -Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. -Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. -Demonstrate that dissolving, mixing and changes of state are reversible changes.	-Build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials and relating these to what they learnt about magnetism and electricity in Year 5. -Experiment with reversible changes, including melting, dissolving, evaporating, filtering and sieving. **Note:** Pupils are not required to make quantitative measurements about conductivity and insulation at this stage. It is sufficient for them to observe that some conductors will produce a brighter bulb in a circuit than others and that some materials will feel hotter than others when a heat source is placed against them.	-Work scientifically by: investigating questions such as 'Which materials would be the most effective for making a warm jacket, or for wrapping ice cream to stop it melting?' They might compare materials in order to make a switch in a circuit. -Sugar experiment – create a saturated solution of sugar. Prop a pencil and piece of string over the top of the glass and leave to evaoprate.

The Body – Circulatory system

Objectives	Notes and guidance	Activities/Experiments
-Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood (including the pulse and clotting). -Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	-Build on what they have learnt in previous years about how the various body systems function. -Build on their learning from Years 3 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore how the circulatory system enables the body to function. -Find out how ideas about the circulatory system have changed through studying the work of scientists in the past, such as William Harvey, who described the circulatory system in the seventeenth century, and Galen, the Roman physician of the second century. -Learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.	-Work scientifically by: discussing and drawing what they think the circulatory system looks like and comparing this with images from other sources; discussing, drawing or creating models of how the main organs of the body fit together and function; comparing the effect of different types of activity on pulse rate and breathing rate. -Find out about the effects of things that might damage the body's systems. They might compare the organ systems of the human body with the organ systems of a variety of animals, asking pertinent questions and suggesting reasons for similarities and differences.

The Body – Reproduction

Objectives	Notes and guidance	Activities/Experiments
-Describe the changes as humans develop from birth to old age. -Learn about sexual reproduction in animals and humans.(C/C – PHSE) - To learn about the impact and effect of puberty		