New Science Curriculum – Year 5

Key: Biology Physics Chemistry

Living things and their habitats

- I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- I can describe the life process of reproduction in some plants and animals.

Ideas for working scientifically:
Observe & compare life cycles of plants and animals in local environment with those from around world(in rainforest, oceans, desert); grow new plants from different parts of the parent plant e.g. seeds, stem & root cuttings, tubers, bulbs; observe changes in animal over period of time e.g. hatching chicks, comparing how different animals reproduce.

Animals, including humans

- I can describe the changes as humans develop to old age.

Ideas for working scientifically:
Research gestation periods of other animals and compare with humans; find out and record length and mass of a baby as it grows.

Properties and changes of materials

- I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- I can demonstrate that dissolving, mixing and changes of state are reversible changes
- I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Ideas for working scientifically:
Carry out tests to answer q's e.g.'Which material would be most effective for a warm jacket, for wrapping ice-cream to stop it melting or making blackout curtains?'Compare materials in order to make a switch in a circuit; observe & compare changes when burning different materials or baking bread or cakes; research & discuss impact of chemical changes on our lives e.g. cooking; discuss creative us of new materials e.g. polymers, super-sticky & super-thin materials.

Earth and Space

- I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- I can describe the movement of the Moon relative to the Earth
- I can describe the Sun, Earth and Moon as approximately spherical bodies
- I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Ideas for working scientifically:
Compare the time of day at different places on Earth through internet links & direct communication; create simplre models of solar system; construct simple shadow clocks & sundials, calibrated to show midday & start/end of school day; find out why some people think structures such as Stonehenge might have been used as astronomical clocks.

Forces

- I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- I can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Ideas for working scientifically:
Explore falling paper cones or cup-cake cases, design & make variety of parachutes & carry out fair tests to find most effective design; explore resistance in water by making and testing boats of different shapes; design and make products that use levers, pulleys, gears and/or springs and explore their effects.