SCIENCE NATIONAL CURRICULUM: KEY STAGE 1

During Key Stage 1 pupils observe, explore and ask questions about living things, materials and phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables.

SC1: SCIENTIFIC ENQUIRY

Scientific enquiry should be taught through contexts derived from Life processes and living things, Materials and their properties and Physical processes

Ideas and evidence in science

1. Pupils should be taught that it is important to collect evidence by making observations and measurements when trying to answer a question.

Investigative skills

2. Pupils should be taught to:

Planning

a. ask questions (e.g. 'How?,' 'Why?', What will happen if ..?') and decide how they might find answers to them (builds on work in En1/3a)
b. use first-hand experience and simple information sources to answer questions (builds on work in En2/2)
c. think about what might happen before deciding what to do
d. recognise when a test or comparison is unfair

Obtaining and presenting evidence

e. follow simple instructions to control the risks to themselves and to others
f. explore, using the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements. (builds on work in Ma1/1a&1c)
g. communicate what happened in a variety of ways including using ICT (e.g. in speech and writing, by drawings, tables, block graphs and pictograms) (builds on work in Ma1/4a&4b)(ICT opportunity: pupils could use graphics packages to assemble sentences and pictures

Considering evidence and evaluating

h. make simple comparisons (e.g. hand span, shoe size) and identify simple patterns or associations
i. compare what happened to what they expected would happen, and try to explain it, drawing on their knowledge and understanding(builds on work in Ma1/4a&4b and En1/1c&3c and En3/1d)
j. review their work and explain it to others (builds on work in En1/1c&3c and En3/1d).

SC2: LIFE PROCESSES & LIVING THINGS

Life processes

1. Pupils should be taught:
   a. the differences between things that are living and things that have never been alive
   b. that animals, including humans, move, feed, grow, use their senses and reproduce
   c. to relate life processes to animals and plants found in the local environment.

Humans and other animals

2. Pupils should be taught:
   a. to recognise and compare the main external parts of the bodies of humans and other animals (ICT opportunity: pupils could use multimedia sources to make comparisons)
   b. that humans and other animals need food and water to stay alive
   c. that taking exercise and eating the right types and amount of food help humans to keep healthy
   d. about the role of drugs as medicines
   e. how to treat animals with care and sensitivity
   f. that humans and other animals can produce offspring and that these offspring grow into adults
   g. about the senses that enable humans and other animals to be aware of the world around them.

Green Plants

3. Pupils should be taught:
   a. to recognise that plants need light and water to grow
   b. to recognise and name the leaf, flower, stem and root of flowering plants
   c. that seeds grow into flowering plants.

Variation and classification

4. Pupils should be taught to:
   a. recognise similarities and differences between themselves and others, and to treat others with sensitivity (ICT opportunity: pupils could use data collected to compile a class database)
   b. group living things according to observable similarities and differences.

Living things in their environment

5. Pupils should be taught to:
   a. find out about the different kinds of plants and animals in the local environment
   b. identify similarities and differences between local environments and ways in which these affect animals and plants that are found there
   c. care for the environment.

SC3: MATERIALS AND THEIR PROPERTIES

Grouping materials

1. Pupils should be taught to:
   a. use their senses to explore and recognise the similarities and differences between materials
   b. sort objects into groups on the basis of simple material properties (e.g. roughness, hardness, shininess, ability to float, transparency and whether they are magnetic or non-magnetic) (ICT opportunity: pupils could use a software package to combine words and pictures about materials and objects)
   c. recognise and name common types of material (e.g. metal, plastic, wood, paper, rock) and recognise that some of them are found naturally
   d. find out about the uses of a variety of materials (e.g. glass, wood, wool) and how these are chosen for specific uses on the basis of their simple properties.

Changing materials

2. Pupils should be taught to:
   a. find out how the shapes of objects made from some materials can be changed by squashing, bending, twisting and stretching
   b. explore and describe the way some everyday materials (e.g. water, chocolate, bread, clay) change when they are heated or cooled.

SC4: PHYSICAL PROCESSES

Electricity

1. Pupils should be taught:
   a. about everyday appliances that use electricity
   b. about simple series circuits involving batteries, wires, bulbs and other components (e.g. buzzers or motors)
   c. how a switch can be used to break a circuit.

Forces and motion

2. Pupils should be taught:
   a. to find out about, and describe the movement of, familiar things (e.g. cars going faster, slowing down, changing direction) (builds on work in Ma2/3a & 3b)
   b. that both pushes and pulls are examples of forces
   c. to recognise that when things speed up, slow down or change direction, there is a cause (e.g. a push or a pull).

Light and sound

3. Pupils should be taught:

Light and dark

   a. to identify different light sources, including the Sun
   b. that darkness is the absence of light

Making and detecting sounds

   c. that there are many kinds of sound and sources of sound (ICT opportunity: pupils could use ICT to detect and compare sounds)
   d. that sounds travel away from sources, getting fainter as they do so, and that they are heard when they enter the ear.

BREADTH OF STUDY

1. During the key stage, pupils should be taught the knowledge, skills and understanding through:
   a. a range of domestic and environmental contexts that are familiar and of interest to them.
   b. looking at the part science has played in the development of many useful things.
   c. using a range of sources of information and data, including ICT based sources.
   d. using first-hand and secondary data to carry out a range of scientific investigations, including complete investigations.

Communication

Pupils should be taught to use simple scientific language to communicate ideas and to name and describe living things, materials, phenomena and processes.

Health and Safety

Pupils should be taught to recognise that there are hazards in living things, materials and physical processes, and assess risks and take action to reduce risks to themselves and others.