**Science Objectives: Oak Class Year A**

Working Scientifically

* plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
* take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
* record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
* use test results to make predictions to set up further comparative and fair tests
* report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
* identify scientific evidence that has been used to support or refute ideas or arguments.

**Autumn Term**

* describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
* describe the life process of reproduction in some plants and animals.
* describe the changes as humans develop to old age.
* identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
* describe the ways in which nutrients and water are transported within animals, including humans.

**Spring Term**

* 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
* know that 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
* 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.

**Summer Term**

* recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
* recognise that light appears to travel in straight lines
* use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
* explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
* use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
* associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
* compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
* use recognised symbols when representing a simple circuit in a diagram.