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| **Science 2022-23** | **Year 5** |
| **Autumn term** | **Chemistry** |
| Pupils will have the opportunity to develop the following skills: | Pupils will have the opportunity to develop their knowledge about: | Pupils will learn the following key vocabulary: |
| **Working scientifically:*** Plan enquiries, including identifying and controlling variables where necessary
* Take measurements, using a range of scientific equipment, with increasing accuracy and precision
* Record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs
* Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.
* Present findings in written form, displays and presentations.
* Use test results to make predictions to set up further comparative and fair tests.
* Use simple models to describe scientific ideas
* Identify scientific evidence to support or refute ideas or arguments.
 | **Simple separation*** Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

**Materials*** 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

**Reversible/ irreversible processes*** 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.
 | accuracy, analysis, evaluation, evidence, graph, justify, precision, variablesproperties, hardness, solubility, transparency, electrical conductivity, thermal conductivity, magnetism, dissolve, solution, substance, separating, mixing, filtering, sieving, reversible change, burning, rusting, reactions, irreversible change |
| **Spring term** | **Physics** |
| Pupils will have the opportunity to develop the following skills: | Pupils will have the opportunity to develop their knowledge about: | Pupils will learn the following key vocabulary: |
| **Working scientifically:*** Plan enquiries, including identifying and controlling variables where necessary
* Take measurements, using a range of scientific equipment, with increasing accuracy and precision
* Record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs
* Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.
* Present findings in written form, displays and presentations.
* Use test results to make predictions to set up further comparative and fair tests.
* Use simple models to describe scientific ideas
* Identify scientific evidence to support or refute ideas or arguments.
 | **Earth and space*** Describe the movement of the Earth, and other planets, 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 and the apparent movement of the sun across the sky.
* Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

**Simple electricity*** 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
 | accuracy, analysis, evaluation, evidence, graph, justify, precision, variablessolar system, planets: Mercury, Venus, earth, Mars, Jupiter, Saturn, Neptune, Uranus, moon, stars, spherical bodies, rotation, orbit, satellite, voltage, components, symbols, circuit, diagram |
| **Summer term** | **Biology** |
| Pupils will have the opportunity to develop the following skills: | Pupils will have the opportunity to develop their knowledge about: | Pupils will learn the following key vocabulary: |
| **Working scientifically:*** Plan enquiries, including identifying and controlling variables where necessary
* Take measurements, using a range of scientific equipment, with increasing accuracy and precision
* Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs
* Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.
* Present findings in written form, displays and presentations.
* Use test results to make predictions to set up further comparative and fair tests.
* Use simple models to describe scientific ideas
* Identify scientific evidence to support or refute ideas or arguments.
 | **Life cycles*** Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
* Describe the changes as humans develop to old age

**Living things and habitats*** Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
* Identify and name a variety of plants and animals in their habitats

**Animal Classification*** Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals
* Give reasons for classifying plants and animals based on specific characteristics.

**Food webs*** Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain
* The interdependence of organisms in an ecosystem, including food webs and pyramid of numbers
* The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
* How organisms affect, and are affected by, their environment, including the accumulation of toxic materials.
 | accuracy, analysis, evaluation, evidence, graph, justify, precision, variableslife cycles, reproduction, life processes, sexual and asexual reproduction (plants), root cuttings, classification, microorganisms, organisms  |