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|  | **Year 3** | **Year 4**  | **Year 5** | **Year 6** |
| **Scientific enquiry**  | raise their own relevant questions about the world around them and use different types of scientific enquiry to answer them should be given a range of scientific experiences including different types of science enquiries to answer questionsstart to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions set up simple practical enquiries, comparative and fair teststalk about criteria for grouping, sorting and classifying; and use simple keys recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations make systematic and careful observationshelp to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be usedbegin to look for patterns and decide what data to collect to identify them take accurate measurements using standard unitslearn how to use a range of (new) equipment, such as data loggers / thermometers appropriatelycollect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this datawith help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusionswith support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done, and raise further questions. Use straight forward scientific evidence to answer questions or to support their findings.  | raise their own relevant questions about the world around them and use different types of scientific enquiry to answer themshould be given a range of scientific experiences including different types of science enquiries to answer questionsstart to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions set up simple practical enquiries, comparative and fair teststalk about criteria for grouping, sorting and classifying; and use simple keys recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations make systematic and careful observations help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be usedbegin to look for patterns and decide what data to collect to identify them take accurate 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forward scientific evidence to answer questions or to support their findings. | use their science experiences to explore ideas and raise different kinds of questionstalk about how scientific ideas have developed over timeselect and plan the most appropriate type of scientific enquiry to use to answer scientific questions recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environmentrecognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact make their own decisions about what observations to make, what measurements to use and how long to make them forlook for different causal relationships in their data and identify evidence that refutes or supports their ideas choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accuratelydecide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, and bar and line graphs identify scientific evidence that has been used to support or refute ideas or arguments use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas,use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of resultsuse simple models to describe scientific ideasdescribe and evaluate their own and other peoples scientific ideas (using topics related to the National Curriculum) using evidence from a range of sources. use their results to make predictions and identify when further observations, comparative and fair tests might be needed  | use their science experiences to explore ideas and raise different kinds of questionstalk about how scientific ideas have developed over timeselect and plan the most appropriate type of scientific enquiry to use to answer scientific questions recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environmentrecognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact make their own decisions about what observations to make, what measurements to use and how long to make them forlook for different causal relationships in their data and identify evidence that refutes or supports their ideas choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accuratelydecide how to record data and results of 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| **Physics** |
| **Sound**  |  | Sound To understand that sound is made by vibrationsTo know how the properties of an object affects pitchTo understand how vibrations change the volume of a soundFind patterns between the volume of a sound and the strength of the vibrations that produced it.Recognise that sounds get fainter as the distance from the sound source increases |  |  |
| **Light**  | LightTo understand how light is used for sightTo understand that light is reflected off surfacesTo understand how light can be dangerousTo know how shadows are formed and how they change |  |  | Light To understand and explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyesTo recognise that light travels in straight linesTo use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them(Extension into KS3 ideas) To begin to understand colours, white light and prisms (qualitative only) and refraction of light because of the varying speed of light waves as they as pass through a medium |
| **Forces and magnets**  | Forces and magnetsTo compare how objects move on different surfacesTo know how forces act upon objectsTo understand how magnets work To be able to classify magnetic materials |  | Forces To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling objectTo use and understand the terms: force, weight and mass.To identify the effects of air resistance, water resistance and friction, that act between moving surfacesTo recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. |  |
| **Electricity**  |  | Electricity To discuss the use of electricity in the worldTo be able to construct a series circuitTo investigate the use of switches in a circuitTo understand the difference in properties in electrical conductors and insulators |  | Electricity To recognise the link between the number and the voltage of cells used in a circuit and the brightness of a lamp or the volume of a buzzer.To compare and give reasons for variations in how components function within a circuit including thebrightness of bulbs, the loudness of buzzers and the on/off position of switchesTo use recognised symbols when representing a simple circuit in a diagram. |
| **Earth and Space**  |  |  | Earth and SpaceTo describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

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| To describe the movement of the Moon relative to the Earth. To describe the Sun, Earth and Moon as approximately spherical bodies.To use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky. |

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| **Chemistry** |
| **States of matter**  |  | States of matterTo know the terminology associated with states of matterTo be able to compare and group materials according to their state of matterTo know how heating and cooling changes state of matterTo begin to understand the water cycleTo know the role of evaporation and condensation and understand the link to temperatureTo use scientific reasoning to make decisions To understand that matter has the same mass whatever form it is in |  |  |
| **Properties of materials and how they change**  |  |  | MaterialsTo compare and group together everyday materials on the basis of their propertiesTo classify materials according to hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

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| To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution |

To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporatingTo give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plasticTo demonstrate that dissolving, mixing and changes of state are reversible changesTo explain that some changes result in the formation of new materialsTo recognise this kind of change is not usually reversible |  |
| **Rocks**  | Rocks and soils To compare and group different kinds of rocks To describe how fossils are formed To know how soils is madeTo identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. |  |  |  |
| **Biology** |
| **Animals including humans**  | Animals including humansTo identify the nutritional needs of animals and humans  To understand the nutritional needs of a human  To understand the purpose of a skeleton and muscles  To understand the difference between socket and hinge joints to enable movement.  To understand the purpose of large muscle groups and main organs in the body  To understand the difference between animal dietary requirements and a human  To identify animal skeletons and how they relate to each species  | Animals including humansTo know how the human digestive system works. To identify the role and function of teeth.To understand the process of a food chainTo construct and interpret a variety of food chains, including produces, predators and preyTo identify herbivores, carnivores and omnivores in the context of teeth, digestion and the food chain. | Animals including humans**Combine unit with Living things and Habitats**To describe the changes as humans develop to old age**(Covered in Life Bus)**To recognise the differences and similarities between animals and humans | Animals including humansTo identify and name the main parts of the human circulatory systemTo describe the functions of the heart, blood vessels and bloodTo recognise the impact of diet, exercise, drugs and lifestyle on the way bodies functionTo explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.To describe the ways in which animals (including humans) and plants gain nutrition and water |
| **Plants**  | PlantsTo identify and describe the functions of different parts of flowering plants To explore the requirements of growth for different plantsTo investigate the way in which water is transported within plantsTo explore the part that flowers play in the life cycle of flowering plants |  |  |  |
| **Living things and their habitats**  |  | Living things and their habitatsTo be able to classify living things To classify and identify living things in a local environment To identify and classify living things around the globe  To understand how habitats and environments can change and the dangers this can pose  To understand that environments can change and the benefits this can bring about. | Living things and their habitats 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. To understand types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals To observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world  | Living things and their habitats To find similarities and differences within living thingsTo identify and describe the groups that pertain to living thingsTo classify living things into groups |
| **Evolution and inheritance**  |  |  |  | Evolution and inheritance To recognise that fossils provide information about living things from millions of years agoTo recognise how living things have changed over timeTo identify how animals and plants adapt to suit their environmentTo explore how habitat change affects how animals evolveTo recognise that living things produce offspring of the same kind but variations can occur |