



Milestone 2b & 3

Science – Upper School (Cycle A)

| | Basic: | Expected: | Deep: |
|--|--------|-----------|-------|
| Working scientifically (Y4) | | | |
| Ask relevant questions. | | | |
| Set up simple, practical enquiries, comparative and fair tests. | | | |
| Make systematic and careful observations. | | | |
| Take accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers. | | | |
| Gather data in a variety of ways to help answer questions. | | | |
| Record data in a variety of ways to help answer questions. | | | |
| Classify data in a variety of ways to help answer questions. | | | |
| Present data in a variety of ways to help answer questions. | | | |
| Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. | | | |
| Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. | | | |
| Use results to draw simple conclusions. | | | |
| Use results to make predictions for new values. | | | |
| Use results to suggest improvements. | | | |
| Use results to raise further questions. | | | |
| Identify differences, similarities or changes related to simple, scientific ideas and processes. | | | |
| Use straightforward, scientific evidence to answer questions or to support their findings. | | | |
| Working scientifically (Y5 & Y6) | | | |
| Plan enquiries, including recognising 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, scatter graphs, bar and line graphs, and models. | | | |
| Report findings from enquiries, including conclusions, causal relationships, and explanations of and degree of trust in results, in oral and written forms. | | | |
| Present findings in written form, displays and other presentations. | | | |
| Use test results to make predictions to set up further comparative and fair tests. | | | |
| Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments. | | | |
| Animals, including humans - Light: The Eye and Light | | | |
| 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 eyes. | | | |



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| 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. | | | |
| 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. | | | |
| Observe and explain the apparent movement of the sun across the sky. | | | |
| Properties and changes of materials: Solutions & Separations | | | |
| Understand how some materials will dissolve in liquid to form a solution. | | | |
| 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. | | | |
| Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through sieving. | | | |
| Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through evaporating. | | | |
| Living things and their habitats - Plants: Classification | | | |
| Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms and plants. | | | |
| Give reasons for classifying plants based on specific characteristics. | | | |
| States of Matter | | | |
| Compare and group materials together, according to whether they are solids, liquids or gases. | | | |
| Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. | | | |
| Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. | | | |
| Living things and their habitats: Coasts | | | |
| Recognise that living things, including plants, micro-organisms and animals can be grouped in a variety of ways. | | | |
| Explore classification keys to help group, identify and name a variety of living things (according to common observable characteristics and based on similarities and differences) in their local and wider environment. | | | |



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| Use classification keys to help group, identify and name a variety of living things in their local and wider environment. | | | |
| Recognise that environments can change. | | | |
| Recognise that a change in environment can sometimes pose dangers to living things. | | | |
| Animals, including humans - Light: The Eye and Light | | | |
| 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 eyes. | | | |
| 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. | | | |
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| Earth and space | | | |
| Describe the movement of the Earth and other planets relative to the Sun in the solar system. | | | |
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| Understand how some materials will dissolve in liquid to form a solution. | | | |
| 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. | | | |
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| Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms and plants. | | | |
| Give reasons for classifying plants based on specific characteristics. | | | |
| States of Matter | | | |
| Compare and group materials together, according to whether they are solids, liquids or gases. | | | |
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