

UKS2 – Forces
Autumn 1

| Substantive Knowledge | | Disciplinary Knowledge | |
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| What will pupils know? | Vocabulary | Techniques the pupils will learn and apply. | |
| <ul style="list-style-type: none"> that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. Describe, in terms of drag forces, why moving objects that are not driven tend to slow down. that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs. that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect. | <ul style="list-style-type: none"> streamlined surface grip drag motion centre resistance friction gravity transferred pulley gear lever | <p>I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> | |
| | | Skills | |
| | | Year 5 | Year 6 |
| | | <p>I can plan different types of scientific enquiries to answer questions.</p> <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can report and present my findings from enquiries.</p> | <p>I can plan and evaluate different types of scientific enquiries to answer questions.</p> <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can reach informed conclusions from the findings of my enquiries.</p> |
| Prior Learning- What should they already know? | | | |
| <p>KS1</p> <ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. | | <p>LKS2</p> <ul style="list-style-type: none"> Compare how things move on different surfaces. | |

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| | <ul style="list-style-type: none"> • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. |
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| UKS2 - Earth and space Autumn 2 | | | |
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| Substantive Knowledge | | Disciplinary Knowledge | |
| What will pupils know? | Vocabulary | Techniques the pupils will learn and apply. | |
| <ul style="list-style-type: none"> • Describe the movement of the Earth 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. | <ul style="list-style-type: none"> • solar • orbit • axis • rotating • gravitational | I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. | |
| | | I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. | |
| | | Skills | |
| | | Year 5 | Year 6 |
| | | I can plan different types of scientific enquiries to answer questions. | I can plan and evaluate different types of scientific enquiries to answer questions. |
| | | I can use test results to make predictions to set up further comparative and fair tests. | I can use test results to make predictions to set up further comparative and fair tests. |

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| | | I can report and present my findings from enquiries. I can evaluate scientific evidence that has been used to support or refute ideas or arguments | I can reach informed conclusions from the findings of my enquiries. I can critique scientific evidence that has been used to support or refute ideas or arguments |
| Prior Learning- What should they already know? | | | |
| KS1 | | LKS2 | |
| <ul style="list-style-type: none"> Observe the apparent movement of the Sun during the day. Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. | | | |

| UKS2- Living things Spring 1 | | | |
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| Substantive Knowledge | | Disciplinary Knowledge | |
| What will pupils know? | Vocabulary | Techniques the pupils will learn and apply. | |
| <ul style="list-style-type: none"> the differences in the life cycles of a mammal, an amphibian, an insect and a bird. the life process of reproduction in some plants and animals. | <ul style="list-style-type: none"> life cycle reproduction two parent reproduction one parent reproduction transformation chimpanzee | I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. | |
| | | I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. | |
| | | Skills | |
| | | Year 5 | Year 6 |
| | | I can plan different types of scientific enquiries to answer questions. | I can plan and evaluate different types of scientific enquiries to answer questions. |

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| | | <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can report and present my findings from enquiries.</p> <p>I can evaluate scientific evidence that has been used to support or refute ideas or arguments</p> | <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can reach informed conclusions from the findings of my enquiries.</p> <p>I can critique scientific evidence that has been used to support or refute ideas or arguments</p> |
| Prior Learning- What should they already know? | | | |
| KS1 | LKS2 | | |
| <ul style="list-style-type: none"> Notice that animals, including humans, have offspring which grow into adults | | | |

| UKS2 - Animals including humans Spring 2 | | | |
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| Substantive Knowledge | | Disciplinary Knowledge | |
| What will pupils know? | Vocabulary | Techniques the pupils will learn and apply. | |
| <ul style="list-style-type: none"> Describe the changes as humans develop to old age. | <ul style="list-style-type: none"> fertilised egg foetus old age death life expectancy puberty periods testicles sperm | <p>I can take measurements, using a range of scientific equipment, with increasing accuracy and precision.</p> <p>I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> | |
| | | Skills | |
| | | Year 5 | Year 6 |
| | | <p>I can plan different types of scientific enquiries to answer questions.</p> | <p>I can plan and evaluate different types of scientific enquiries to answer questions.</p> |

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| | | <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can report and present my findings from enquiries.</p> <p>I can evaluate scientific evidence that has been used to support or refute ideas or arguments</p> | <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can reach informed conclusions from the findings of my enquiries.</p> <p>I can critique scientific evidence that has been used to support or refute ideas or arguments</p> |
| Prior Learning- What should they already know? | | | |
| KS1 | | LKS2 | |
| <ul style="list-style-type: none"> Notice that animals, including humans, have offspring which grow into adults | | | |

| UKS2 - Light | | | |
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| Substantive Knowledge | | Disciplinary Knowledge | |
| What will pupils know? | Vocabulary | Techniques the pupils will learn and apply. | |
| <ul style="list-style-type: none"> that light appears to travel in straight lines. how to 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. | <ul style="list-style-type: none"> source refraction shadow | <p>I can take measurements, using a range of scientific equipment, with increasing accuracy and precision.</p> <p>I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> | |
| | | Skills | |
| | | Year 5 | Year 6 |

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| <ul style="list-style-type: none"> • how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. • that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. | | <p>I can plan different types of scientific enquiries to answer questions. I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can report and present my findings from enquiries.</p> <p>I can evaluate scientific evidence that has been used to support or refute ideas or arguments</p> | <p>I can plan and evaluate different types of scientific enquiries to answer questions.</p> <p>I can use test results to make predictions to set up further comparative and fair tests.</p> <p>I can reach informed conclusions from the findings of my enquiries.</p> <p>I can critique scientific evidence that has been used to support or refute ideas or arguments</p> |
| <p>Prior Learning- What should they already know?</p> | | | |
| <p style="text-align: center;">KS1</p> <ul style="list-style-type: none"> • say which part of the body is associated with each sense. | | <p style="text-align: center;">LKS2</p> <ul style="list-style-type: none"> • recognise that they need light in order to see things and that dark is the absence of light. • notice that light is reflected from surfaces. • recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • recognise that shadows are formed when the light from a light source is blocked by a solid object. • find patterns in the way that the size of shadows change. | |