

Switched on Science Year 5

Autumn 1 - Unit 1 - Out of this world

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes |
|------|-------------------------|----------------------------|--|---|--|
| 1 | 1.1 The Solar System | Earth and Space | What's in our Solar System? | Describe the movement of the Earth, and other planets, relative to the sun in the solar system. | Planning different scientific enquiry to answer questions – research using secondary data. |
| 2 | 1.1 The Solar System | Earth and Space | Let's make a model Solar System | Describe the movement of the Earth, and other planets, relative to the sun in the solar system. | Planning different scientific enquiry to answer questions – research using secondary data. |
| 3 | 1.2 Meet the scientists | Earth in Space | What is at the centre of the Solar System? | Describe the movement of the Earth, and other planets, relative to the sun in the solar system. | Identify scientific evidence that has been used to support or refute ideas or arguments. Know about the life and work of scientists – Aristotle, Ptolemy, Copernicus. |
| 4 | 1.2 Meet the scientists | Earth in Space | Galileo, Galileo! | Describe the movement of the Earth, and other planets, relative to the sun in the Solar System. | Identify scientific evidence that has been used to support or refute ideas or arguments. <i>To know about the life and work of a scientist – Galileo (not statutory)</i> |
| 5 | 1.3 Night and Day | Earth in Space | What makes a month? | Describe the movement of the Moon relative to the Earth. | Identify scientific evidence that has been used to support or refute ideas or arguments. |
| 6 | 1.3 Night and Day | Earth in Space | What is a time zone? | Use the idea of the Earth's rotation to explain day and night. | To use simple models to explain scientific ideas. <i>(not in Statutory Requirements)</i> |

Autumn 2 - Unit 2 - Material World

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes |
|------|--------------------------|-------------------------------------|-------------------------------|---|--|
| 1 | 2.1 Why materials matter | Properties and changes of materials | Why that material? | Compare and group together everyday materials on the basis of their properties. | Planning different types of enquiries to answer questions, including recognising and controlling variables where necessary. |
| 2 | 2.1 Why materials matter | Properties and changes of materials | Foamy fun | Compare and group together everyday materials on the basis of their properties. | Planning different types of enquiries to answer questions, including recognising and controlling variables where necessary. |
| 3 | 2.2 Solutions | Properties and changes of materials | Going, going, gone! | Know that some materials will dissolve in liquid to form a solution. | Planning different types of enquiries to answer questions, including recognising and controlling variables where necessary. |
| 4 | 2.2 Solutions | Properties and changes of materials | Mix it up | Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. | Planning different types of enquiries to answer questions, including recognising and controlling variables where necessary. |
| 5 | 2.3 Making changes | Properties and changes of materials | Signs of change | Explain that some changes result in the formation of new materials, and this kind of change is not usually reversible. | Recording data and results using a range of scientific equipment reporting and presenting findings, including conclusions, causal relationships. |
| 6 | 2.3 Making changes | Properties and changes of materials | Modern accidental discoveries | Explain that some changes result in the formation of new materials, and this kind of change is not usually reversible | <i>To know about the life and work of scientists –(not statutory)</i> |

Spring 1 - Unit 3 - Circle of life

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes |
|-------------|-------------------------|-----------------------------------|-----------------------|--|--|
| 1 | 3.1 Make new plants | Living things and their habitats | Making new plants | Describe the life processes of reproduction in some plants. | Planning different types of enquiries to answer questions, including recognising and controlling variables where necessary. |
| 2 | 3.1 Make new plants | Living things and their habitats | Taking plant cuttings | Describe the life processes of reproduction in some plants. | Recording data and results using a range of scientific equipment, reporting and presenting findings, including conclusions, causal relationships |
| 3 | 3.2 Animal behaviour | Living things and their habitats | Metamorphosis | Describe the differences in the life cycles of an insect and a frog. | Planning different types of enquiries to answer questions researching using secondary sources. |
| 4 | 3.2 Animal behaviour | Living things and their habitats | What came first? | Describe the differences in the life cycles of a bird and a mammal. | Planning different types of enquiries to answer questions researching using secondary sources. |
| 5 | 3.3 Making babies | Living things and their habitats | Finding a mate | Describe the process of reproduction in some animals. | Record data and results, report and present findings, including conclusions, causal relationships. |
| 6 | 3.3 Making babies | Living things and their habitats | Endangered animals | Describe the process of reproduction in some animals. | <i>To know about the life and work of a scientist – Jane Goodall (not statutory)</i> |

Spring 2 - Unit 4 - Let's get moving

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes |
|------|--------------------------|----------------------------|------------------|--|--|
| 1 | 4.1 Forces of nature | Forces | Down we go | Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. | Take measurements (Newton Metres) with increasing accuracy and precision, record data and results. Report and present findings, including conclusions. <i>To know about the life and work of scientists – Galileo and Isaac Newton (not statutory).</i> |
| 2 | 4.1 Forces of nature | Forces | Falling objects | Identify the effects of air resistance that act between moving surfaces. | Plan a fair test recognising and controlling variables where necessary, taking measurements, recording data and results, reporting and presenting findings, including conclusions. |
| 3 | 4.2 It's a drag! | Forces | Rubbing together | Identify the effects of friction that acts between moving surfaces. | Plan a fair test recognising and controlling variables where necessary, taking measurements, recording data and results reporting and presenting findings, including conclusions. |
| 4 | 4.2 It's a drag! | Forces | Water resistance | Identify the effects of water resistance that acts between moving surfaces. | Plan a fair test recognising and controlling variables where necessary, taking measurements, recording data and results reporting and presenting findings, including conclusions. |
| 5 | 4.3 Magnificent machines | Forces | Simple machines | Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. | Record using diagrams. |
| 6 | 4.3 Magnificent machines | Forces | Make a machine | Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. | <i>To know about the life and work of an inventor and engineer – Rube Goldberg (not statutory).</i> |

Summer 1 – Unit 5 - Growing up and growing old

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes |
|-------------|--------------------|-----------------------------------|-----------------------|---|---|
| 1 | 5.1 Human timeline | Animals, including humans | Cradle to grave | Describe the changes humans develop to old age. | |
| 2 | 5.1 Human timeline | Animals, including humans | Baby boom | Describe the changes humans develop to old age. | Record data, report and present findings. |
| 3 | 5.2 Growing pains | Animals, including humans | Growing up | Describe the changes humans develop to old age. | Plan different types of scientific enquiry – survey and record data using graphs. |
| 4 | 5.2 Growing pains | Animals, including humans | Terrible teenagers | Describe the changes humans develop to old age. | Plan different types of scientific enquiry to answer questions – research using secondary sources |
| 5 | 5.3 Getting old | Animals, including humans | Act your age | Describe the changes humans develop to old age. | Plan different types of scientific enquiry to answer questions – research using secondary sources |
| 6 | 5.3 Getting old | Animals, including humans | Live forever | Describe the changes humans develop to old age. | Plan different types of scientific enquiry to answer questions – research using secondary sources |

Summer 2 - Unit 6 – Super scientists

**** This topic is an additional creative topic and goes beyond National Curriculum requirements.**

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes |
|------|-----------------------------|----------------------------|----------------------|--|---|
| 1 | 6.1 How do scientists work? | Working scientifically | What is a scientist? | Compare everyday materials on the basis of their properties. | Planning different types of scientific enquiry to answer questions. |
| 2 | 6.1 How do scientists work? | Working scientifically | Discoveries | <i>To know about the life and work of a forensic scientist – (not statutory).</i> | Plan different types of scientific enquiry to answer questions – research using secondary sources. |
| 3 | 6.2 Crime solvers | Working scientifically | Forensic techniques | <i>To know about the life and work of a forensic scientist – (not statutory).</i> | Identify scientific evidence that has been used to support or refute ideas or arguments. |
| 4 | 6.2 Crime solvers | Working scientifically | A crime at school | <i>To know about the life and work of a forensic scientist – (not statutory).</i> | Record data and results, report and present findings, including conclusions, causal relationships and explanations. |
| 5 | 6.3 Spread the word | Working scientifically | Science in the news | <i>To know about the life and work of a scientist – (not statutory).</i> | Report and present findings in oral and written forms such as displays and other presentations. |
| 6 | 6.3 Spread the word | Working scientifically | Science for all | Be able to research different kinds of science activities and share them with other people. <i>(not – statutory)</i> | Plan different types of scientific enquiry |