

MODULE OVERVIEW CHART

| Module number and name | Lesson number and name | National curriculum links | Working scientifically links | Scientific enquiry type | Lesson summary |
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| Year 6 Our Changing World | 1: How do animals behave during different times of the year? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Grouping and classifying | During these lessons children build and expand on the work in other biology modules undertaken during Years 5 and 6. They visit a variety of different locations around the school grounds and in the wider environment, identifying examples of animals that they observe and describing what the animals are doing at different times of the year. |
| | 2: How can we observe animals when we are not there? | Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird; identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Pattern seeking | During these lesson children make direct and detailed observations of animals at various times of the year by creating and using observation stations, both around school and at a distance, using webcams. |
| | 3: How can we observe the life cycles of specific animals more closely? | Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird; recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Grouping and classifying | This lesson complements the work undertaken in Lesson 1. Children study in detail the life cycle of the butterfly, in a controlled environment, making regular observations and identifying and recording changes that take place within the reproductive cycle of butterflies. |
| | 4: How does the number, type and behaviour of birds found around our school change during the year? | Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird; identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Pattern seeking | During these lesson children observe the variety of bird life located around their school and within the local area throughout the year and identify patterns in the data they collect. |
| | 5: What happens to invertebrates during the year? | Describe how living things are classified into broad groups according to common observable characteristics, similarities and differences, including micro-organisms, plants and animals; identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Observing changes over different periods of time | Children monitor invertebrates found in the locality of the school during the year, identifying and recording the numbers of different types of invertebrate and their habitats. They conduct some simple investigations into the behaviour of invertebrates and examine ways in which these animals show adaptation to the environments in which they live. |
| Year 6 Module 1: The Nature Library | 1: Can you sort this mess? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Grouping and classifying | In this lesson children build on their knowledge from previous years about how living things can be grouped together in different ways according to the characteristics they have in common; this is classification. |
| | 2: Can you face the garden centre challenge? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter | Grouping and classifying | In this lesson children decide ways in which to group plants. They apply their classification skills to different types of plants, giving their reasons for the groups and justifying them to others. |

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| | | differences, including micro- organisms, plants and animals | graphs, and bar and line graphs | | |
| | 3: How are vertebrates grouped together? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including animals; to give reasons for classifying animals based on specific characteristics | Reporting and presenting findings from enquiries including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Grouping and classifying | In this lesson children consider the classification of animals. After revising their knowledge of different types of animals from previous years, they investigate in more detail the grouping and classification of vertebrates. |
| | 4: How are invertebrates grouped together? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including animals; to give reasons for classifying animals based on specific characteristics | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Grouping and classifying | This lesson follows on from Lesson 3 and deliberately adopts the same pattern and activities in order for children to explore the classification of invertebrates. |
| | 5: Where do things fit? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including animals; to give reasons for classifying animals based on specific characteristics | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Grouping and classifying | In this lesson children apply some of the things they have learned in the previous lessons in this module to living things in the school environment. They use their knowledge of classification and their identification skills to create a school log book. |
| | 6: What else is living besides plants and animals? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including animals; to give reasons for classifying animals based on specific characteristics | Identifying scientific evidence that has been used to support or refute ideas or arguments | Grouping and classifying | In this lesson children are introduced to the idea that plants and animals are only two types of living things and that there are three further kingdoms – fungi, bacteria and protista. Together they are often described as micro-organisms. |
| | 7: How can you grow your own micro-organisms? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro- organisms, plants and animals | Planning different types of enquiries to answer questions including recognising and controlling variables where necessary | Observing changes over different periods of time | In this lesson children plan and set up an investigation to observe how micro-organisms grow and multiply over time. The results of this investigation need to be recorded over time. Weekly opportunities to observe changes are needed during the enquire stage, ideally over four weeks. |
| | 8: Was it always this way? | Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro- organisms, plants and animals; give reasons for classifying plants and animals based on specific characteristics | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays or other presentations; identifying scientific evidence that has been used to support or refute ideas | Finding things out using a wide range of secondary sources of information | In this lesson children explore the history of classification and the scientists involved, including Aristotle and Carl Linnaeus. |
| | 9: What happens | Give reasons for classifying plants and animals | Identifying scientific evidence that has | Finding things out | In this lesson children consider how scientists can have different |

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| | when scientists disagree? | based on specific characteristics | been used to support or refute ideas | using a wide range of secondary sources of information | views on the way things may be classified by using an example of how botanists developed different ways of classifying plants. They then try to reach agreement on their own classification systems for seeds. |
| | 10: What should we call it? | Give reasons for classifying plants and animals based on specific characteristics | Presenting findings from enquiries in oral and written forms such as displays or other presentations | Grouping and classifying | In this lesson children apply their learning from the module in an unfamiliar context. By the end of this lesson children have carried out a focused activity, using evidence and their own knowledge to classify and name an unknown organism. |
| | EL1: Can you make a nature guidebook for your school? | Describe how living things are classified into broad groups according to common observable characteristics based on similarities and differences; give reasons for classifying plants and animals based on specific characteristics | Reporting and presenting findings from enquiries including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays or other presentations | Grouping and classifying | In this lesson children apply their knowledge from the module to a real life context by looking at living things that they have in their home and their school environment. |
| | EL2: What happens when the last one leaves? | Describe how living things are classified into broad groups according to common observable characteristics based on similarities and differences; give reasons for classifying plants and animals based on specific characteristics | Identifying scientific evidence that has been used to support or refute ideas or arguments | Grouping and classifying | In this lesson children apply their classification skills to extinct or nearly extinct things. |
| Module 2: Body Pump | 1: What does my circulatory system do? | Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Finding things out using a wide range of secondary sources of information | In this lesson children begin their investigations of the human circulatory system, first revising knowledge of the digestive, muscular and skeletal systems |
| | 2: What is a heart and what does it do? | Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary sources of information | In this lesson children make a model of the heart to illustrate how the different parts fit and work together. |
| | 3: What is blood? | Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children pose and answer different types of questions to find out how blood transports oxygen and waste gases round the body. |
| | 4: What is in blood? | Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other | Finding things out using a wide range of secondary sources of information | In this lesson children make 'blood soup' as an illustrative practical activity to help them find out about how the different parts of blood enable it to carry oxygen, waste gases, nutrients and water, and compile a fact file. |

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| | | | presentations | | |
| | 5: What do valves and blood vessels do? | Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Finding things out using a wide range of secondary sources of information | In this lesson children use their learning from previous lessons in this module and secondary sources to explore valves and blood vessels. They create concept sentences and maps to present their findings about valves, veins, arteries and capillaries. |
| | 6: What happens to water in our bodies? | Describe the ways in which nutrients and water are transported within animals, including humans | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary sources of information | In this lesson children learn more about how water is transported through their bodies, building on their knowledge about how the blood transports nutrients and gases. |
| | 7: What does the road around our body look like? | Identify and name the main parts of the human circulatory system and explain the functions of the heart, blood vessels and blood; to describe the ways in which nutrients and water are transported within animals, including humans | Identifying evidence that has been used to support and refute ideas or arguments | n/a | In this lesson children reflect on what sources of evidence they have used to learn about the human circulatory system and demonstrate their understanding in a card sort and by making a game. |
| Module 3: Body Health | 1: What does being healthy mean? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary information | In this lesson children revise their learning about how humans obtain nutrition from the different types of food they eat. |
| | 2: How is food divided into different groups? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Identifying scientific evidence that has been used to support or refute ideas or arguments | Grouping and classifying | In this lesson children examine food packaging labels to identify the food groups that different types of food contain, using their existing knowledge of the four main food groups. |
| | 3: What makes a healthy snack or drink? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Recording data in a table and reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary sources of information | In this lesson children build on their learning from Lesson 2 to examine the nutritional content of certain snacks and drinks to decide whether they would contribute to a balanced, healthy diet. They examine different food packaging and look at how carefully worded food packaging can sometimes be misleading to the purchaser. |
| | 4: How have diets changed? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children look at how ideas have been tested scientifically to identify cause and effect and how the results have impacted our diet. They investigate historical cases of diet affecting health, including scurvy and the work of scientist James Lind. |
| | 5: How is pulse rate affected by | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Taking measurements, using a range of scientific equipment, with increasing | Carrying out comparative and | In this lesson children explore the impact of exercise on the body. They learn that they can measure their pulse rate to find out how |

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| | exercise? | | accuracy and precision, taking repeat readings where appropriate; reporting and presenting findings from enquires, including degree of trust in results | fair tests | hard their heart is working. They measure their resting heart rate and collect data to investigate what happens when they exercise. |
| | 6: What are the benefits of sports and exercise? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Reporting and presenting findings from enquiries, including conclusions, causal relationships, in oral and written forms such as displays and other presentations and explanations of and degree of trust in results | Finding things out using a wide range of secondary sources of information | In this lesson children survey the range of sports played by their classmates, consider the importance of exercise for a healthy lifestyle and develop ways to encourage more people to take up a new sport. |
| | 7: How do drugs affect the body over time? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Presenting findings including causal relationships in oral and written forms | Finding things out using a wide range of secondary sources of information | In this lesson children explore the impact of drugs on the way the body functions. |
| | 8: How does smoking affect the body? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary sources of information | In this lesson children investigate the risks posed to health by smoking. They explore the laws associated with smoking and the short- and long-term health risks associated with smoking. |
| | 9: Can you spread the healthy word? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Reporting and presenting findings from enquiries, conclusions, including causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | n/a | In this lesson children produce a school booklet about the benefits of a healthy lifestyle. Children are required to reflect on their learning and present their findings to an audience. |
| | EL1: How do athletes keep fit? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Reporting and presenting findings from enquiries, conclusions, including causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary sources of information | In this lesson children look in detail at the diet and training regimes of a range of athletes. |
| | EL2: What happens when athletes cheat? | Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and presentations | Finding things out using a wide range of secondary sources of information | In this lesson children explore why and how athletes use performance-enhancing drugs to enhance their performance, looking at some high-profile cases of the use of banned substances. |
| Module 4: Everything Changes | 1: Why do living things vary? | Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter | Grouping and classifying | In this lesson children investigate and discuss how characteristics of living things, for example, height, size or colour, vary from individual to individual. |

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| | | | graphs, and/or bar and line graphs | | |
| | 2: Can you breed a dog for a specific purpose? | Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children develop their understanding of inheritance and explore how characteristics are passed on from parents to offspring. They sort dogs into breeding pairs in order to produce offspring with particular characteristics. Some children extend these ideas to plants. |
| | 3: How can we make our food better? | Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children build on the selective breeding activities in Lesson 2 and extend their learning to the subject of selective breeding for food, and its advantages and disadvantages. |
| | 4: How does the environment affect plants? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables | Carrying out comparative and fair tests | In this lesson children begin to investigate ways in which the environment can affect how plants grow. They make observations, and plan and set up a fair test to investigate a demonstrable effect that the environment has on plants. |
| | 5: How do environmental variables affect plants? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables | Carrying out comparative and fair tests | In this lesson children continue to develop their knowledge and understanding of how environmental variables affect plant populations by carrying out and analysing the results of the investigations they planned in Lesson 4. |
| | 6: How do living things survive? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations | Finding things out using a wide range of secondary sources of information | In this lesson children continue to develop their understanding of the idea that changes in the environment can impact on living things. They examine ways in which the physical features and behaviour of living things make them more suited to the particular habit in which they live, and how adaptations of living things help them to survive in their environment. |
| | 7: Why do living things become extinct? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children apply their knowledge of how changes in an environment can cause living things to become extinct. |
| | 8: What does it take to survive? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | n/a | In this lesson children explore further what living things need in order to survive by designing imaginary animals that have adapted to suit a specific environment. It provides a good opportunity for children to reflect on their learning so far in this module about variation and adaptation. |
| | 9: What evidence is there that living things have | Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary | In this lesson children use fossils to examine how plants and animals may have looked in the past and, based on their features, suggest the environment in which they may have lived. |

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| | changed over time? | years ago | | sources of information | |
| | 10: How does natural selection work? | Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children explore how natural selection works. |
| | EL1: How can one type of animal become two? | Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using a wide range of secondary sources of information | In this lesson children apply their knowledge of natural selection to the more complex process of speciation. |
| Module 5: Danger: Low Voltage! | 1: How many simple circuits can you make? | Use recognised symbols when representing a simple circuit in a diagram | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs | Carrying out simple comparative and fair tests | In this lesson children revise and build on their work from Year 4 on how to construct simple circuits. |
| | 2: What does a switch do? | Compare the functions of different components, giving reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off positions of switches, and use recognised symbols when representing a simple circuit in a diagram | Recording data and results of increasing complexity using scientific diagrams and labels | Carrying out simple comparative and fair tests | In this lesson children make and control simple circuits using purchased switches and classroom-made switches. |
| | 3: How strong is your resistance? | 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, and use recognised symbols when representing a simple circuit in a diagram | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | Carrying out simple comparative and fair tests | In this lesson children add different components to electrical circuits and role play the flow of electrons in a circuit to explain the idea of resistance. |
| | 4: Do you know your circuit diagrams and can you construct working circuits from them? | 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, and use recognised symbols when representing a simple circuit in a diagram | Recording data and results of increasing complexity using scientific diagrams, classification keys, tables, scatter graphs, bar and line graphs | Carrying out simple comparative and fair tests | In this lesson children consolidate their learning on circuits and recognised electrical symbols from the previous three lessons. |
| | 5: Will the lights | There are no direct links to the three statements | Reporting and presenting findings from | Finding things out | In these two lessons children research how electricity is generated |

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| | stay on? (Part 1) | in the science national curriculum, as these two lessons involve carrying out research and constructing reports about electricity in everyday use | enquiries in oral and written forms | using secondary sources of information | in different ways. During this first part children prepare debates about different methods of electricity generation, transmission and the siting of generating plants, which they present to the class in Lesson 6. They learn to recognise which secondary sources are most useful to research their ideas and to use relevant scientific language in their debates. |
| | 6: Will the lights stay on? (Part 2) | There are no direct links to the three statements in the science national curriculum, as these two lessons involve carrying out research and constructing reports about electricity in everyday use | Identifying scientific evidence that has been used to support or refute ideas or arguments | Finding things out using secondary sources of information | In these two lessons children are researching how electricity is generated in different ways. In the previous lesson children prepared debates about different methods of electricity generation and transmission, and the siting of generating plants. |
| | EL1: Are you all wired up? (Part 1) | 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, and use recognised symbols when representing a simple circuit in a diagram | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graph and/or bar and line graphs | Carrying out simple comparative and fair tests | In this lesson children use their knowledge of electrical circuits and circuit diagrams to construct circuits of different complexity. |
| | EL2: Are you all wired up? (Part 2) | 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, and use recognised symbols when representing a simple circuit in a diagram | Reporting and presenting findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results in oral and written forms such as displays and other presentations | Carrying out simple comparative and fair tests | In this lesson children complete their discussions as design engineers, build technicians and PR departments, using information from Enrichment Lesson 1. In their challenge groups children select and present information about their circuits. |
| | EL3: Can you protect the crown jewels? (Part 1) | 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, and use recognised symbols when representing a simple circuit in a diagram | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graph and/or bar and line graphs | Carrying out simple comparative and fair tests | In this lesson children use their knowledge of circuits to construct burglar alarms. |
| | EL4: Can you protect the crown jewels? (Part 2) | 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, and use recognised symbols when representing a simple | Reporting and presenting findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results in oral and written forms such as displays and other presentations | Carrying out simple comparative and fair tests | In this lesson children complete the construction of their burglar alarm circuits and the PR departments present their combined brochure for the burglar alarm to the class. |

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| | | circuit in a diagram | | | |
| Module 6: Light Up Your World | 1: What is light and what does it do? | 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 | Identifying scientific evidence that has been used to support or refute ideas or arguments | n/a | In this lesson children carry out illustrative practical activities to review their knowledge and understanding about the behaviour of light, including light sources and shadows from Year 3. |
| | 2: Can you see more than just your face in a mirror? | Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye | Using test results to make predictions to set up further comparative and fair tests | Noticing patterns | In this lesson children carry out illustrative practical activities to review and develop their knowledge and understanding of how mirrors work from Year 3, Module 3. |
| | 3: Can light go round corners? | 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 eye | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | n/a | In this lesson children develop their understanding of mirrors from Lesson 2 and use this to develop a model of how light travels. |
| | 4: Can you make a camera with a box, paper and a pin? | 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 eye; 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 | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs; identifying scientific evidence that has been used to support or refute ideas or arguments | n/a | In this lesson the idea that light travels in straight lines is reinforced through an illustrative practical activity where children investigate how a pinhole camera works |
| | 5: How can you measure a shadow? | Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary | Carrying out comparative and fair tests | In this lesson children will build on their learning about shadows from Year 3, and about the movement of the Earth in space in Year 5, to plan fair tests to investigate how different variables affect the size of a shadow. |
| | 6: What do we know about changing shadow sizes? | Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | Carrying out comparative and fair tests | In this lesson children carry out the fair test to investigate shadow size that they planned in Lesson 5. |
| | 7: Can light change direction without a mirror? | Recognise that light appears to travel in straight lines | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs; using test results to make predictions to set up further comparative and fair tests | Exploration | In this lesson children explore the refraction of light and some of the phenomena it creates. |
| | 8: How many ways can you make a rainbow? | Recognise that light appears to travel in straight lines | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs | n/a | In this lesson children carry out illustrative practical activities to investigate how rainbows are made, together with other light and colour effects |

| Module number and name | Lesson number and name | National curriculum links | Working scientifically links | Scientific enquiry type | Lesson summary |
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| | 9: How much do you know about 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 eye; 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 | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations | n/a | In this lesson children summarise and consolidate all of the work on light done in Year 6, and assess what they have learned. |
| | EL1: How can you make a good shadow puppet? | Recognise that light appears to travel in straight lines; use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results in oral and written forms such as displays and other presentations | n/a | In this lesson children plan, test and make puppets for a shadow theatre. Extension lesson 2 that follows has the performance and evaluation of the activity. |
| | EL2: What makes a good shadow puppet theatre show? | Recognise that light appears to travel in straight lines; use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results in oral and written forms such as displays and other presentations | Noticing patterns | In this lesson children perform a story using shadow puppets, applying their knowledge about how puppets are made to create different effects. |