Science

Medium Term Planning Year 6

	Autumn	Spring	Summer
Year 6	Module 4 - **Everything changes** Module 6 – **Light up your world**	Module 2 - **Body pump** Module 5 - **Danger! low voltage**	Module 1 - **Nature library** Module 3 - **Body health**
Our Changing World	Lessons 1 and 2 (more than once)	Lesson 4 (more than once)	Lesson 5 (more than once)

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Our Changing World

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
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 maylead to evolution	Recording data and results of increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Grouping andclassifying
2: How can we observe animals when we are notthere?	Describe the differences in the life cycles of a mammal, an amphibian, an insect anda bird; identify how animals and plants are adapted to suit their environment indifferent ways and that adaptation maylead to evolution	Recording data and results of increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Pattern seeking
3: How can we observe the life cycles of specificanimals more closely?	Describe the differences in the life cycles ofa 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 increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Grouping andclassifying
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 anda bird; identify how animals and plants are adapted to suit their environment indifferent ways and that adaptation maylead 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
5: What happensto invertebrates during the year?	Describe how living things are classified into broad groups according to commonobservable characteristics, similarities anddifferences, including micro-organisms, plants and animals; identify how animalsand 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 periodsof time

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Module 1: The nature library

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
1: Can you sortthis 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 increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Grouping andclassifying
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 differences, including micro-organisms, plants and animals	Recording data and results of increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Grouping andclassifying
3: How are vertebrates grouped together?	Describe how living things are classified into broad groups according to commonobservable 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 andclassifying
4: How are invertebrates grouped together?	Describe how living things are classified into broad groups according to commonobservable 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 andclassifying
5: Where dothings fit?	Describe how living things are classified into broad groups according to commonobservable characteristics and based on similarities and differences, including animals; to give reasons for classifying animals based on specific characteristics	Recording data and results of increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Grouping andclassifying
6: What else isliving besides plants and animals?	Describe how living things are classified into broad groups according to commonobservable characteristics and based on similarities and differences, including animals; to give reasons for classifying animals based on specific characteristics	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Grouping andclassifying
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	Planning different types of enquiries to answer questions including recognising and controlling variables where necessary	Observing changes over different periodsof time

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	on similarities and differences, including micro-organisms, plants and animals		
8: Was it alwaysthis 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 reasonsfor 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 orrefute ideas	Finding thingsout using a wide range of secondary sources of information
9: What happens when scientists disagree?	Give reasons for classifying plants and animals based on specific characteristics	Identifying scientific evidence that hasbeen used to support or refute ideas	Finding thingsout using a wide range of secondarysources of information
10: What shouldwe call it?	Give reasons for classifying plants and animals based on specific characteristics	Presenting findings from enquiries in oraland written forms such as displays or other presentations	Grouping andclassifying
EL1: Can you make a natureguidebook 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 onspecific characteristics	Reporting and presenting findings fromenquiries 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 andclassifying
EL2: What happens when thelast 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 onspecific characteristics	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Grouping andclassifying

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Module 2: Body pump

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
1: What does my circulatory system do?	Identify and name the main parts of the human circulatory system and describe thefunctions 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 thingsout using a wide range of secondarysources of information
2: What is a heartand what does it do?	Identify and name the main parts of the human circulatory system and describe thefunctions 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 otherpresentations	Finding thingsout using a wide range of secondarysources of information
3: What is blood?	Identify and name the main parts of the human circulatory system and describe thefunctions of the heart, blood vessels and blood	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondarysources of information
4: What is inblood?	Identify and name the main parts of the human circulatory system and describe thefunctions 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 otherpresentations	Finding thingsout using a wide range of secondarysources of information
5: What do valvesand blood vessels do?	Identify and name the main parts of the human circulatory system and describe thefunctions 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 thingsout using a wide range of secondarysources of information
6: What happensto water in our bodies?	Describe the ways in which nutrients andwater 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 otherpresentations	Finding thingsout using a wide range of secondarysources of information
7: What does theroad around ourbody 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 withinanimals, including humans	Identifying evidence that has been used to support and refute ideas or arguments	n/a

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Module 3: Body health

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
1: What doesbeing healthymean?	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 thingsout using a wide range of secondaryinformation
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 hasbeen used to support or refute ideas orarguments	Grouping andclassifying
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 relationshipsand explanations of and degree of trust inresults, in oral and written forms such as displays and other presentations	Finding thingsout using a wide range of secondarysources of information
4: How have diets changed?	Recognise the impact of diet, exercise,drugs and lifestyle on the way bodies function	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondary sourcesof information
5: How is pulserate affected byexercise?	Recognise the impact of diet, exercise,drugs and lifestyle on the way bodies function	Taking measurements, using a rangeof scientific equipment, with increasingaccuracy and precision, taking repeat readings where appropriate; reporting and presenting findings from enquires, including degree of trust in results	Carrying out comparative andfair tests
6: What are the benefits of sportsand 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 presentationsand explanations of and degree of trustin results	Finding thingsout using a wide range of secondary sourcesof information

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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 thingsout using a wide range of secondary sourcesof information
8: How does smoking affect thebody?	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 thingsout using a wide range of secondarysources of information
9: Can you spreadthe healthy word?	Recognise the impact of diet, exercise,drugs and lifestyle on the way bodies function	Reporting and presenting findings from enquires, 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
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 enquires, 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 thingsout using a wide range of secondary sourcesof information
EL2: What happens whenathletes 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 oraland written forms such as displays andpresentations	Finding thingsout using a wide range of secondary sourcesof information

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Module 4: Everything changes

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
1: Why do living things vary?	Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identicalto their parents	Recording data and results of increasing complexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and/or bar and line graphs	Grouping andclassifying
2: Can you breed a dog for aspecific purpose?	Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identicalto their parents	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondary sourcesof information
3: How can wemake our foodbetter?	Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identicalto their parents	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondarysources of information
4: How does the environmentaffect plants?	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation maylead to evolution	Planning different types of scientific enquiries to answer questions, includingrecognising and controlling variables	Carrying out comparative andfair tests
5: How do environmental variables affectplants?	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation maylead to evolution	Planning different types of scientific enquiries to answer questions, includingrecognising and controlling variables	Carrying out comparative andfair tests
6: How do living things survive?	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation maylead to evolution	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results,in oral and written forms such as displaysand other presentations	Finding thingsout using a wide range of secondary sourcesof information
7: Why do living things become extinct?	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation maylead to evolution	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondary sourcesof information
8: What does ittake to survive?	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation maylead 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 otherpresentations	n/a

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9: What evidenceis there that living things havechanged over time?	Recognise that living things have changedover time and that fossils provide information about living things that inhabited the Earth millions of years ago	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondarysources of information
10: How does natural selectionwork?	Recognise that living things have changedover time and that fossils provide information about living things that inhabited the Earth millions of years ago	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondarysources of information
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 maylead to evolution	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using a wide range of secondarysources of information

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Module 5: Danger: Low voltage!

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
1: How many simple circuits canyou make?	Use recognised symbols when representinga simple circuit in a diagram	Recording data and results of increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, bar and line graphs	Carrying out simple comparative andfair tests
2: What does aswitch do?	Compare the functions of different components, giving reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzersand the on/off positions of switches, and use recognised symbols when representing a simple circuit in a diagram	Recording data and results of increasingcomplexity using scientific diagrams andlabels	Carrying out simple comparative andfair tests
3: How strong isyour resistance?	Associate the brightness of a lamp or the volume of a buzzer with the numberand 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 buzzersand the on/off position of switches, and userecognised 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 andfair tests
4: Do you know your circuit diagrams and canyou construct working circuits from them?	Associate the brightness of a lamp or the volume of a buzzer with the numberand 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 buzzersand the on/off position of switches, and userecognised 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 andfair tests
5: Will the lightsstay on? (Part 1)	There are no direct links to the three statements in the science national curriculum, as these two lessons involvecarrying out research and constructing reports about electricity in everyday use	Reporting and presenting findings fromenquiries in oral and written forms	Finding thingsout using secondary sources of information
6: Will the lightsstay on? (Part 2)	There are no direct links to the three statements in the science national curriculum, as these two lessons involvecarrying out research and constructing reports about electricity in everyday use	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	Finding thingsout using secondary sources of information
EL1: Are you all wired up? (Part 1)	Associate the brightness of a lamp or the volume of a buzzer with the numberand voltage of cells used in the circuit,	Recording data and results of increasingcomplexity using scientific	Carrying out simple comparative andfair tests

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	compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzersand the on/off position of switches, and userecognised symbols when representing a simple circuit in a diagram	diagrams andlabels, classification keys, tables, scatter graph and/or bar and line graphs	
EL2: Are you all wired up? (Part 2)	Associate the brightness of a lamp or the volume of a buzzer with the numberand 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 buzzersand the on/off position of switches, and userecognised 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 otherpresentations	Carrying out simple comparative andfair tests
EL3: Can you protect the crownjewels? (Part 1)	Associate the brightness of a lamp or the volume of a buzzer with the numberand 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 buzzersand the on/off position of switches, and userecognised symbols when representing a simple circuit in a diagram	Recording data and results of increasingcomplexity using scientific diagrams andlabels, classification keys, tables, scatter graph and/or bar and line graphs	Carrying out simple comparative andfair tests
EL4: Can you protect the crownjewels? (Part 2)	Associate the brightness of a lamp or the volume of a buzzer with the numberand 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 buzzersand the on/off position of switches, and userecognised 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 otherpresentations	Carrying out simple comparative andfair tests

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Module 6: Light up your world

Lesson number and name	National Curriculum Links	Working Scientifically Links	Scientific Enquiry Type
1: What is lightand what doesit do?	Explain that we see things because lighttravels from light sources to our eyes or from light sources to objects and then toour eyes	Identifying scientific evidence that hasbeen used to support or refute ideas orarguments	n/a
2: Can you seemore than justyour face in a mirror?	Use the idea that light travels in straightlines to explain that objects are seen because they give out or reflect light intothe eye	Using test results to make predictions toset up further comparative and fair tests	Noticing patterns
3: Can light goround corners?	Recognise that light appears to travel in straight lines; use the idea that light travelsin straight lines to explain that objects are seen because they give out or reflect lightinto the eye	Recording data and results of increasing complexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	n/a
4: Can you makea camera with a box, paper and a pin?	Recognise that light appears to travel in straight lines; use the idea that light travelsin straight lines to explain that objects are seen because they give out or reflect lightinto 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
5: How can you measure ashadow?	Use the idea that light travels in straight lines to explain why shadows have the sameshape as the objects that cast them	Planning different types of scientific enquiries to answer questions, includingrecognising and controlling variables where necessary	Carrying out comparative and fair tests
6: What do we know about changing shadowsizes?	Use the idea that light travels in straight lines to explain why shadows have the sameshape as the objects that cast them	Recording data and results of increasing complexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs	Carrying out comparative and fair tests
7: Can light change direction without a mirror?	Recognise that light appears to travel instraight lines	Recording data and results of increasing complexity using scientific diagrams andlabels, classification keys, tables, scatter graphs, and bar and line graphs; using test results to make predictions to set upfurther comparative and fair tests	Exploration
8: How many ways can you make a rainbow?	Recognise that light appears to travel instraight lines	Recording data and results of increasing complexity using scientific diagrams andlabels,	n/a

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		classification keys, tables, scatter graphs, and bar and line graphs	
9: How much doyou know aboutlight?	Recognise that light appears to travel in straight lines; use the idea that light travelsin straight lines to explain that objects areseen because they give out or reflect lightinto 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 theobjects 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
EL1: How can you make a goodshadow puppet?	Recognise that light appears to travel in straight lines; use the idea that light travelsin straight lines to explain why shadows have the same shape as the objects that cast them	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	n/a
EL2: What makesa good shadow puppet theatre show?	Recognise that light appears to travel in straight lines; use the idea that light travelsin straight lines to explain why shadows have the same shape as the objects that cast them	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	Noticing patterns