

# SCIENCE CURRICULUM ENGLAND

**PRIMARY: GRADE 1 - 6**

**SECONDARY: BIOLOGY, CHEMISTRY, PHYSICS**



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Module Name	Grade	Standard	Description
<b>Measurement of Weather</b>	1	<b>Y1.SC.2</b>	observe and describe weather associated with the seasons and how day length varies
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y1.WS.5</b>	using their observations and ideas to suggest answers to questions
		<b>Y1.WS.6</b>	gathering and recording data to help in answering questions
<b>Properties and States of Matter</b>	1	<b>Y1.EM.1</b>	distinguish between an object and the material from which it is made
		<b>Y1.EM.2</b>	identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
		<b>Y1.EM.3</b>	describe the simple physical properties of a variety of everyday materials
		<b>Y1.EM.4</b>	compare and group together a variety of everyday materials on the basis of their simple physical properties
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y1.WS.2</b>	observing closely, using simple equipment
		<b>Y1.WS.3</b>	performing simple tests
		<b>Y1.WS.4</b>	identifying and classifying
		<b>Y1.SC.1</b>	observe changes across the 4 seasons
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
<b>Seasonal Patterns</b>	1	<b>Y1.WS.3</b>	performing simple tests
		<b>Y1.WS.5</b>	using their observations and ideas to suggest answers to questions
		<b>Y1.WS.6</b>	gathering and recording data to help in answering questions
		<b>Y1.WS.6</b>	gathering and recording data to help in answering questions
<b>Weather Conditions</b>	1	<b>Y1.SC.2</b>	observe and describe weather associated with the seasons and how day length varies
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y1.WS.3</b>	performing simple tests
		<b>Y1.WS.5</b>	using their observations and ideas to suggest answers to questions
		<b>Y1.WS.6</b>	gathering and recording data to help in answering questions

<b>Classifying Animals</b>	1	<b>Y1.AH.1</b>	identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
		<b>Y1.AH.2</b>	identify and name a variety of common animals that are carnivores, herbivores and omnivores
		<b>Y1.AH.3</b>	describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y1.WS.3</b>	performing simple tests
		<b>Y1.WS.4</b>	identifying and classifying
		<b>Y1.WS.5</b>	using their observations and ideas to suggest answers to questions
<b>Five Senses</b>	1	<b>Y1.AH.4</b>	identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y1.WS.3</b>	performing simple tests
		<b>Y1.WS.5</b>	using their observations and ideas to suggest answers to questions
		<b>Y1.WS.6</b>	gathering and recording data to help in answering questions
<b>Parts of Plants</b>	1	<b>Y1.PL.1</b>	identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
		<b>Y1.PL.2</b>	identify and describe the basic structure of a variety of common flowering plants, including trees
		<b>Y1.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y1.WS.2</b>	observing closely, using simple equipment
		<b>Y1.WS.3</b>	performing simple tests
		<b>Y1.WS.4</b>	identifying and classifying
		<b>MOK.1.f.</b>	Sequence or group objects and materials according to one or more student-selected criteria .
		<b>MOK.1.g.</b>	Discuss how familiar objects are designed to meet human needs.
		<b>MOK.1.h.</b>	Identify and explore ways to use appropriate tools safely to help carry out a variety of useful tasks such as stapling, measuring, hammering, gluing, and cooking.
		<b>MOK.1.i.</b>	Explain how tools and other objects are designed to meet human needs.

Module Name	Grade	Standard	Description
<b>Animal and Plant Dependence</b>	2	<b>Y2.LH.3</b>	identify and name a variety of plants and animals in their habitats, including microhabitats
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y2.WS.4</b>	identifying and classifying
		<b>Y2.WS.5</b>	using their observations and ideas to suggest answers to questions
<b>Animal Needs</b>	2	<b>Y2.AH.2</b>	find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y2.WS.4</b>	identifying and classifying
		<b>Y2.WS.5</b>	using their observations and ideas to suggest answers to questions
<b>Animal Survival</b>	2	<b>Y2.AH.2</b>	find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y2.WS.4</b>	identifying and classifying
		<b>Y2.WS.5</b>	using their observations and ideas to suggest answers to questions
<b>Animal Trait Inheritance and Variation</b>	2	<b>Y2.AH.1</b>	notice that animals, including humans, have offspring which grow into adults
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y2.WS.3</b>	performing simple tests
		<b>Y2.WS.4</b>	identifying and classifying
		<b>Y2.WS.5</b>	using their observations and ideas to suggest answers to questions
		<b>Y2.WS.6</b>	gathering and recording data to help in answering questions
<b>Habitats</b>	2	<b>Y2.LH.2</b>	identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways

		Y2.WS.4	identifying and classifying
		Y2.WS.5	using their observations and ideas to suggest answers to questions
		Y2.WS.6	gathering and recording data to help in answering questions
<b>Human Health and Hygiene</b>	2	Y2.AH.3	describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene
		Y2.WS.1	asking simple questions and recognising that they can be answered in different ways
		Y2.WS.2	observing closely, using simple equipment
<b>Living and Nonliving Things</b>	2	Y2.LH.1	explore and compare the differences between things that are living, dead, and things that have never been alive
		Y2.WS.1	asking simple questions and recognising that they can be answered in different ways
		Y2.WS.2	observing closely, using simple equipment
		Y2.WS.4	identifying and classifying
		Y2.WS.5	using their observations and ideas to suggest answers to questions
		Y2.WS.6	gathering and recording data to help in answering questions
<b>Plant Structures and Functions</b>	2	Y2.PL.1	observe and describe how seeds and bulbs grow into mature plants
		Y2.PL.2	find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
		Y2.WS.1	asking simple questions and recognising that they can be answered in different ways
		Y2.WS.2	observing closely, using simple equipment
		Y2.WS.3	performing simple tests
		Y2.WS.4	identifying and classifying
		Y2.WS.5	using their observations and ideas to suggest answers to questions
		Y2.WS.6	gathering and recording data to help in answering questions
<b>Protecting the Young</b>	2	Y2.AH.1	notice that animals, including humans, have offspring which grow into adults
		Y2.WS.1	asking simple questions and recognising that they can be answered in different ways
		Y2.WS.5	using their observations and ideas to suggest answers to questions



		<b>Y2.WS.6</b>	gathering and recording data to help in answering questions
<b>Building Blocks of Matter</b>	2	<b>Y2.UM.1</b>	identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
		<b>Y2.UM.2</b>	find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y2.WS.2</b>	observing closely, using simple equipment
		<b>Y2.WS.3</b>	performing simple tests
		<b>Y2.WS.4</b>	identifying and classifying
		<b>Y2.WS.5</b>	using their observations and ideas to suggest answers to questions
<b>Plant Survival</b>	2	<b>Y2.PL.1</b>	observe and describe how seeds and bulbs grow into mature plants
		<b>Y2.PL.2</b>	find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
		<b>Y2.WS.1</b>	asking simple questions and recognising that they can be answered in different ways
		<b>Y2.WS.2</b>	observing closely, using simple equipment
		<b>Y2.WS.3</b>	performing simple tests
		<b>Y2.WS.4</b>	identifying and classifying
		<b>Y2.WS.5</b>	using their observations and ideas to suggest answers to questions
		<b>Y2.WS.6</b>	gathering and recording data to help in answering questions

Module Name	Grade	Standard	Description
<b>Properties of Soil</b>	3	<b>Y3.RO.2</b>	describe in simple terms how fossils are formed when things that have lived are trapped within rock
		<b>Y3.RO.3</b>	recognise that soils are made from rocks and organic matter
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>What Plants Need</b>	3	<b>Y3.PL.1</b>	identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
		<b>Y3.PL.2</b>	explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
		<b>Y3.PL.3</b>	investigate the way in which water is transported within plants
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions



		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Behaviour of Light</b>	3	<b>Y3.LI.1</b>	recognise that they need light in order to see things and that dark is the absence of light
		<b>Y3.LI.3</b>	recognise that light from the sun can be dangerous and that there are ways to protect their eyes
		<b>Y3.LI.4</b>	recognise that shadows are formed when the light from a light source is blocked by an opaque object
		<b>Y3.LI.5</b>	find patterns in the way that the size of shadows change
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.

<b>Light Reflection</b>	3	<b>Y3.LI.2</b>	notice that light is reflected from surfaces
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Magnets</b>	3	<b>Y3.FM.3</b>	observe how magnets attract or repel each other and attract some materials and not others
		<b>Y3.FM.4</b>	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
		<b>Y3.FM.5</b>	describe magnets as having 2 poles
		<b>Y3.FM.6</b>	predict whether 2 magnets will attract or repel each other, depending on which poles are facing
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Objects and Motion</b>	3	<b>Y3.FM.1</b>	compare how things move on different surfaces
		<b>Y3.FM.2</b>	notice that some forces need contact between 2 objects, but magnetic forces can act at a distance
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Classifying Rocks</b>	3	<b>Y3.RO.1</b>	compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them

		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Basic Needs and Habitats</b>	3	<b>Y3.AH.1</b>	identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Functional Structures of Organisms</b>	3	<b>Y3.AH.2</b>	identify that humans and some other animals have skeletons and muscles for support, protection and movement
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them

		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Plant Life Cycles</b>	3	<b>Y3.PL.4</b>	explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
		<b>Y3.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y3.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y3.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y3.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y3.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y3.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y3.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

		<b>Y3.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y3.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.



Module Name	Grade	Standard	Description
<b>Changes from Heat</b>	4	<b>Y4.SM.2</b>	observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Classifying Matter</b>	4	<b>Y4.SM.1</b>	compare and group materials together, according to whether they are solids, liquids or gases
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Electricity, Conductors, and Insulators</b>	4	<b>Y4.EL.1</b>	identify common appliances that run on electricity
		<b>Y4.EL.2</b>	construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
		<b>Y4.EL.3</b>	identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
		<b>Y4.EL.4</b>	recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
		<b>Y4.EL.5</b>	recognise some common conductors and insulators, and associate metals with being good conductors
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Sound and Vibration</b>	4	<b>Y4.SO.1</b>	identify how sounds are made, associating some of them with something vibrating
		<b>Y4.SO.2</b>	recognise that vibrations from sounds travel through a medium to the ear
		<b>Y4.SO.3</b>	find patterns between the pitch of a sound and features of the object that produced it
		<b>Y4.SO.4</b>	find patterns between the volume of a sound and the strength of the vibrations that produced it
		<b>Y4.SO.5</b>	recognise that sounds get fainter as the distance from the sound source increases
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Environmental Changes and Effects</b>	4	<b>Y4.LH.3</b>	recognise that environments can change and that this can sometimes pose dangers to living things
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests

		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Distinguishing Body Parts</b>	4	<b>Y4.AH.1</b>	describe the simple functions of the basic parts of the digestive system in humans
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Human Teeth</b>	4	<b>Y4.AH.2</b>	identify the different types of teeth in humans and their simple functions
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them

		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Matter and Energy in Food Webs</b>	4	<b>Y4.AH.3</b>	construct and interpret a variety of food chains, identifying producers, predators and prey
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
<b>The Water Cycle</b>	4	<b>Y4.SM.3</b>	identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them

		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.
<b>Classification of Organisms</b>	4	<b>Y4.LH.1</b>	recognise that living things can be grouped in a variety of ways
		<b>Y4.LH.2</b>	explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
		<b>Y4.WS.1</b>	asking relevant questions and using different types of scientific enquiries to answer them
		<b>Y4.WS.2</b>	setting up simple practical enquiries, comparative and fair tests
		<b>Y4.WS.3</b>	making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
		<b>Y4.WS.4</b>	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
		<b>Y4.WS.5</b>	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
		<b>Y4.WS.6</b>	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions



		<b>Y4.WS.7</b>	using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
		<b>Y4.WS.8</b>	identifying differences, similarities or changes related to simple scientific ideas and processes
		<b>Y4.WS.9</b>	using straightforward scientific evidence to answer questions or to support their findings.

Module Name	Grade	Standard	Description
<b>Mixtures</b>	5	<b>Y5.PM.1</b>	compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Earth's Rotation</b>	5	<b>Y5.ES.2</b>	describe the movement of the moon relative to the Earth
		<b>Y5.ES.3</b>	describe the sun, Earth and moon as approximately spherical bodies
		<b>Y5.ES.4</b>	use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments

<b>Chemical and Physical Changes</b>	5	<b>Y5.PM.5</b>	demonstrate that dissolving, mixing and changes of state are reversible changes
		<b>Y5.PM.6</b>	explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
		<b>Y5.PM.2</b>	know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
		<b>Y5.PM.3</b>	use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
<b>Classifying Matter</b>	5	<b>Y5.PM.1</b>	compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
		<b>Y5.PM.4</b>	give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Gravitational and Electrostatic Forces</b>	5	<b>Y5.FC.1</b>	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
		<b>Y5.FC.2</b>	identify the effects of air resistance, water resistance and friction, that act between moving surfaces
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Matter Changing States</b>	5	<b>Y5.PM.1</b>	compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Simple Machines</b>	5	<b>Y5.FC.3</b>	recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Earth, Sun, and Moon System</b>	5	<b>Y5.ES.2</b>	describe the movement of the moon relative to the Earth
		<b>Y5.ES.3</b>	describe the sun, Earth and moon as approximately spherical bodies
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>The Solar System</b>	5	<b>Y5.ES.1</b>	describe the movement of the Earth and other planets relative to the sun in the solar system
		<b>Y5.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y5.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Life Cycles</b>	5	<b>Y5.LH.1</b>	describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
		<b>Y5.AH.1</b>	describe the changes as humans develop to old age
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y5.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Reproduction and Variation</b>	5	<b>Y5.LH.2</b>	describe the life process of reproduction in some plants and animals
		<b>Y5.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y5.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations



Module Name	Grade	Standard	Description
<b>Similarities and Differences</b>	6	<b>Y6.LH.1</b>	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
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Properties of Visible Light</b>	6	<b>Y6.LI.1</b>	recognise that light appears to travel in straight lines
		<b>Y6.LI.2</b>	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
		<b>Y6.LI.3</b>	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
		<b>Y6.LI.4</b>	use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Fossil Record</b>	6	<b>Y6.EI.1</b>	recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Human Body and Health</b>	6	<b>Y6.AH.1</b>	identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
		<b>Y6.AH.2</b>	recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
		<b>Y6.AH.3</b>	describe the ways in which nutrients and water are transported within animals, including humans
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Inheritance</b>	6	<b>Y6.EI.2</b>	recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Inheritance and Variation of Traits</b>	6	<b>Y6.EI.2</b>	recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Natural Selection and Populations</b>	6	<b>Y6.EI.3</b>	identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Plant and Animal Parts</b>	6	<b>Y6.LH.2</b>	give reasons for classifying plants and animals based on specific characteristics
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests

		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Survival of the Fittest</b>	6	<b>Y6.EI.3</b>	identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Electric Circuits</b>	6	<b>Y6.EL.1</b>	associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
		<b>Y6.EL.2</b>	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
		<b>Y6.EL.3</b>	use recognised symbols when representing a simple circuit in a diagram
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments
<b>Adaptations</b>	6	<b>Y6.EI.3</b>	identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
		<b>Y6.WS.1</b>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		<b>Y6.WS.2</b>	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
		<b>Y6.WS.3</b>	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
		<b>Y6.WS.4</b>	using test results to make predictions to set up further comparative and fair tests
		<b>Y6.WS.5</b>	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		<b>Y6.WS.6</b>	identifying scientific evidence that has been used to support or refute ideas or arguments



Module Name	Grade	Standard	Description
<b>Anatomy of a Cell</b>	Biology	<b>Bio.1-1a</b>	cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope
		<b>Bio.1-1b</b>	the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts
		<b>Bio.1-1c</b>	the similarities and differences between plant and animal cells
		<b>Bio.1-1d</b>	the role of diffusion in the movement of materials in and between cells
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.4b</b>	use and derive simple equations and carry out appropriate calculations
<b>Carbon Dioxide and Oxygen Cycle</b>	Biology	<b>Bio.1-4a</b>	the structure and functions of the gas exchange system in humans, including adaptations to function
		<b>Bio.1-4b</b>	the mechanism of breathing to move air in and out of the lungs, using a pressure model to explain the movement of gases, including simple measurements of lung volume
		<b>Bio.1-4c</b>	the impact of exercise, asthma and smoking on the human gas exchange system
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding

		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Digestive System and Processes</b>	Biology	<b>Bio.1-3d</b>	the tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts)
		<b>Bio.1-3e</b>	the importance of bacteria in the human digestive system
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3f</b>	identify further questions arising from their results
<b>Drug Use</b>	Biology	<b>Bio.1-6a</b>	the effects of recreational drugs (including substance misuse) on behaviour, health and life processes
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding

		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
<b>Ecosystem Biodiversity</b>	Biology	<b>Bio.3-1b</b>	the importance of plant reproduction through insect pollination in human food security
		<b>Bio.4-1g</b>	the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material
		<b>Bio.3-1a</b>	the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4b</b>	use and derive simple equations and carry out appropriate calculations

<b>Heredity and Genetic Probabilities</b>	Biology	<b>Bio.4-1a</b>	heredity as the process by which genetic information is transmitted from one generation to the next
		<b>Bio.4-1b</b>	a simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model
		<b>Bio.4-1c</b>	differences between species
		<b>Bio.4-1d</b>	the variation between individuals within a species being continuous or discontinuous, to include measurement and graphical representation of variation
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3e</b>	evaluate data, showing awareness of potential sources of random and systematic error
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Human Reproduction</b>	Biology	<b>Bio.1-5a</b>	reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility

		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3f</b>	identify further questions arising from their results
<b>Introduction to Photosynthesis</b>	Biology	<b>Bio.2-1b</b>	the dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere
		<b>Bio.1-3f</b>	plants making carbohydrates in their leaves by photosynthesis and gaining mineral nutrients and water from the soil via their roots
		<b>Bio.1-4d</b>	the role of leaf stomata in gas exchange in plants
		<b>Bio.2-1a</b>	the reactants in, and products of, photosynthesis, and a word summary for photosynthesis
		<b>Bio.2-1c</b>	the adaptations of leaves for photosynthesis
		<b>Bio.2-2a</b>	aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life
		<b>Bio.2-2b</b>	a word summary for aerobic respiration
		<b>Bio.2-2c</b>	the process of anaerobic respiration in humans and micro-organisms, including fermentation, and a word summary for anaerobic respiration
		<b>Bio.2-2d</b>	the differences between aerobic and anaerobic respiration in terms of the reactants, the products formed and the implications for the organism
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks

		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
<b>Macromolecules</b>	Biology	<b>Bio.1-3a</b>	the content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed
		<b>Bio.1-3b</b>	calculations of energy requirements in a healthy daily diet
		<b>Bio.1-3c</b>	the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding

		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
<b>Natural Selection</b>	Biology	<b>Bio.4-1e</b>	the variation between species and between individuals of the same species meaning some organisms compete more successfully, which can drive natural selection
		<b>Bio.4-1f</b>	changes in the environment which may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Reproduction in Plants</b>	Biology	<b>Bio.1-5b</b>	reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks

		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Fungi, Protists, and Bacteria</b>	Biology	<b>Bio.1-1e</b>	the structural adaptations of some unicellular organisms
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs



		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.4b</b>	use and derive simple equations and carry out appropriate calculations
<b>Human Impact on the Environment</b>	Biology	<b>Bio.3-1c</b>	how organisms affect, and are affected by, their environment, including the accumulation of toxic materials
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4b</b>	use and derive simple equations and carry out appropriate calculations
<b>Bodies and Systems</b>	Biology	<b>Bio.1-1f</b>	the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms
		<b>Bio.1-2a</b>	the structure and functions of the human skeleton, to include support, protection, movement and making blood cells
		<b>Bio.1-2b</b>	biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles
		<b>Bio.1-2c</b>	the function of muscles and examples of antagonistic muscles

		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.4b</b>	use and derive simple equations and carry out appropriate calculations

Module Name	Grade	Standard	Description
Chemical Reactions	Chemistry	<b>Chem.5a</b>	energy changes on changes of state (qualitative)
		<b>Chem.5b</b>	exothermic and endothermic chemical reactions (qualitative)
		<b>Chem.4a</b>	chemical reactions as the rearrangement of atoms
		<b>Chem.4b</b>	representing chemical reactions using formulae and using equations
		<b>Chem.4c</b>	combustion, thermal decomposition, oxidation and displacement reactions
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques

<b>Acids and Bases</b>	Chemistry	<b>Chem.4d</b>	defining acids and alkalis in terms of neutralisation reactions
		<b>Chem.4e</b>	the pH scale for measuring acidity/alkalinity; and indicators
		<b>Chem.4g</b>	reactions of acids with alkalis to produce a salt plus water
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
<b>Changes in Energy on the Molecular Level</b>	Chemistry	<b>Chem.1a</b>	the properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure
		<b>Chem.1b</b>	changes of state in terms of the particle model
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks

		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
<b>Classify Matter</b>	Chemistry	<b>Phys.21a</b>	conservation of material and of mass, and reversibility, in melting, freezing, evaporation, sublimation, condensation, dissolving
		<b>Phys.21b</b>	similarities and differences, including density differences, between solids, liquids and gases
		<b>Phys.22a</b>	the differences in arrangements, in motion and in closeness of particles explaining changes of state, shape and density; the anomaly of ice-water transition
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements

		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Conservation of Matter</b>	Chemistry	<b>Chem.2d</b>	conservation of mass changes of state and chemical reactions
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques

<b>Patterns In The Periodic Table</b>	Chemistry	<b>Chem.6a</b>	the varying physical and chemical properties of different elements
		<b>Chem.6b</b>	the principles underpinning the Mendeleev periodic table
		<b>Chem.6c</b>	the periodic table: periods and groups; metals and non-metals
		<b>Chem.6d</b>	how patterns in reactions can be predicted with reference to the periodic table
		<b>Chem.6e</b>	the properties of metals and non-metals
		<b>Chem.7a</b>	the order of metals and carbon in the reactivity series
		<b>Chem.6f</b>	the chemical properties of metal and non-metal oxides with respect to acidity
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3c</b>	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
<b>Physical and Chemical Changes</b>	Chemistry	<b>Phys.21e</b>	the difference between chemical and physical changes
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility

		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Physical Changes and Particle Movement</b>	Chemistry	<b>Chem.3d</b>	simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography
		<b>Chem.3c</b>	diffusion in terms of the particle model
		<b>Phys.21c</b>	Brownian motion in gases
		<b>Phys.21d</b>	diffusion in liquids and gases driven by differences in concentration
		<b>Phys.22b</b>	atoms and molecules as particles
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility



		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
<b>Pure Substances and Mixtures</b>	Chemistry	<b>Chem.3a</b>	the concept of a pure substance
		<b>Chem.3b</b>	mixtures, including dissolving
		<b>Chem.3e</b>	the identification of pure substances
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks

		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Reaction Rates</b>	Chemistry	<b>Chem.4h</b>	what catalysts do
		<b>Chem.4f</b>	reactions of acids with metals to produce a salt plus hydrogen
		<b>Chem.7b</b>	the use of carbon in obtaining metals from metal oxides
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding

		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Composition of Earth's Atmosphere</b>	Chemistry	<b>Chem.8e</b>	the composition of the atmosphere
		<b>Phys.2-3a</b>	atmospheric pressure, decreases with increase of height as weight of air above decreases with height
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3e</b>	evaluate data, showing awareness of potential sources of random and systematic error
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature

<b>Earth Materials</b>	Chemistry	<b>Chem.8c</b>	the rock cycle and the formation of igneous, sedimentary and metamorphic rocks
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
<b>Earth's Crust, Mantle and Core</b>	Chemistry	<b>Chem.8a</b>	the composition of the Earth
		<b>Chem.8b</b>	the structure of the Earth
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding

		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
<b>Rising Carbon Dioxide Concentrations</b>	Chemistry	<b>Chem.8f</b>	the production of carbon dioxide by human activity and the impact on climate
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
<b>Elements and Compounds</b>	Chemistry	<b>Chem.2a</b>	a simple (Dalton) atomic model
		<b>Chem.2b</b>	differences between atoms, elements and compounds
		<b>Chem.2c</b>	chemical symbols and formulae for elements and compounds

		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques

Module Name	Grade	Standard	Description
Patterns of Motion	Physics	Phys.24c	the seasons and the Earth’s tilt, day length at different times of year, in different hemispheres
		KS3.WS.1a	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		KS3.WS.1b	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		KS3.WS.1c	evaluate risks
		KS3.WS.2c	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		KS3.WS.2d	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		KS3.WS.2e	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		KS3.WS.2f	apply sampling techniques
		KS3.WS.3a	apply mathematical concepts and calculate results
		KS3.WS.3d	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		KS3.WS.3f	identify further questions arising from their results
Renewable and Non-Renewable Resources	Physics	Chem.8d	Earth as a source of limited resources and the efficacy of recycling
		KS3.WS.1a	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		KS3.WS.1b	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		KS3.WS.1c	evaluate risks
		KS3.WS.2a	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience

		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Balanced and Unbalanced Forces</b>	Physics	<b>Phys.2-2a</b>	forces as pushes or pulls, arising from the interaction between 2 objects
		<b>Phys.2-2b</b>	using force arrows in diagrams, adding forces in 1 dimension, balanced and unbalanced forces
		<b>Phys.2-2c</b>	moment as the turning effect of a force
		<b>Phys.2-2d</b>	forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results



<b>Electrical Circuits</b>	Physics	<b>Phys.17a</b>	electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge
		<b>Phys.17b</b>	potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current
		<b>Phys.17c</b>	differences in resistance between conducting and insulating components (quantitative)
		<b>Phys.1-2c</b>	other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Electromagnetic Forces and Fields</b>	Physics	<b>Phys.18a</b>	separation of positive or negative charges when objects are rubbed together: transfer of electrons, forces between charged objects
		<b>Phys.18b</b>	the idea of electric field, forces acting across the space between objects not in contact

		<b>Phys.19a</b>	magnetic poles, attraction and repulsion
		<b>Phys.19b</b>	magnetic fields by plotting with compass, representation by field lines
		<b>Phys.19c</b>	Earth's magnetism, compass and navigation
		<b>Phys.19d</b>	the magnetic effect of a current, electromagnets, DC motors (principles only)
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Force Field</b>	Physics	<b>Phys.2-2h</b>	non-contact forces: gravity forces acting at a distance on Earth and in space, forces between magnets, and forces due to static electricity
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review

		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Forces and Motion of Objects</b>	Physics	<b>Phys.2-4a</b>	opposing forces and equilibrium: weight held by stretched spring or supported on a compressed surface
		<b>Phys.2-5a</b>	forces being needed to cause objects to stop or start moving, or to change their speed or direction of motion (qualitative only)
		<b>Phys.2-5b</b>	change depending on direction of force and its size
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety

		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Light and Sound Waves</b>	Physics	<b>Phys.3-2a</b>	frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound
		<b>Phys.3-2b</b>	sound needs a medium to travel, the speed of sound in air, in water, in solids
		<b>Phys.3-2c</b>	sound produced by vibrations of objects, in loudspeakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal
		<b>Phys.3-2d</b>	the auditory range of humans and animals
		<b>Phys.3-3a</b>	pressure waves transferring energy; use for cleaning and physiotherapy by ultrasound; waves transferring information for conversion to electrical signals by microphone
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables

		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Longitudinal and Transverse Waves</b>	Physics	<b>Phys.3-1a</b>	waves on water as undulations which travel through water with transverse motion; these waves can be reflected, and add or cancel – superposition
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
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		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results

		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Measuring Energy Transfer</b>	Physics	<b>Phys.1-1a</b>	comparing energy values of different foods (from labels) (kJ)
		<b>Phys.1-1b</b>	comparing power ratings of appliances in watts (W, kW)
		<b>Phys.1-1c</b>	comparing amounts of energy transferred (J, kJ, kW hour)
		<b>Phys.1-1d</b>	domestic fuel bills, fuel use and costs
		<b>Phys.1-1e</b>	fuels and energy resources
		<b>Phys.1-2c</b>	other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques

<b>Modeling Conservation of Energy</b>	Physics	<b>Phys.1-3a</b>	energy as a quantity that can be quantified and calculated; the total energy has the same value before and after a change
		<b>Phys.1-3b</b>	comparing the starting with the final conditions of a system and describing increases and decreases in the amounts of energy associated with movements, temperatures, changes in positions in a field, in elastic distortions and in chemical compositions
		<b>Phys.1-3c</b>	using physical processes and mechanisms, rather than energy, to explain the intermediate steps that bring about such changes
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4a</b>	understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
		<b>KS3.WS.4b</b>	use and derive simple equations and carry out appropriate calculations
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Potential Energy</b>	Physics	<b>Phys.23b</b>	internal energy stored in materials
		<b>Phys.2-2e</b>	forces measured in newtons, measurements of stretch or compression as force is changed
		<b>Phys.2-2f</b>	force-extension linear relation; Hooke's Law as a special case
		<b>Phys.2-2g</b>	work done and energy changes on deformation
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility

		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Speed, Velocity, and Acceleration</b>	Physics	<b>Phys.2-1a</b>	speed and the quantitative relationship between average speed, distance and time (speed = distance ÷ time)
		<b>Phys.2-1b</b>	the representation of a journey on a distance-time graph
		<b>Phys.2-1c</b>	relative motion: trains and cars passing one another
		<b>Phys.1-2c</b>	other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility



		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Thermal Energy</b>	Physics	<b>Phys.1-2b</b>	heating and thermal equilibrium: temperature difference between 2 objects leading to energy transfer from the hotter to the cooler one, through contact (conduction) or radiation; such transfers tending to reduce the temperature difference; use of insulators
		<b>Phys.23a</b>	changes with temperature in motion and spacing of particles
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review

		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Thermodynamics</b>	Physics	<b>Phys.2-3b</b>	pressure in liquids, increasing with depth; upthrust effects, floating and sinking
		<b>Phys.2-3c</b>	pressure measured by ratio of force over area – acting normal to any surface
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding

		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Visible Light</b>	Physics	<b>Phys.3-4a</b>	the similarities and differences between light waves and waves in matter
		<b>Phys.3-4b</b>	light waves travelling through a vacuum; speed of light
		<b>Phys.3-4c</b>	the transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface
		<b>Phys.3-4d</b>	use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye
		<b>Phys.3-4e</b>	light transferring energy from source to absorber, leading to chemical and electrical effects; photosensitive material in the retina and in cameras
		<b>Phys.3-4f</b>	colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review

		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Work</b>	Physics	<b>Phys.1-2a</b>	simple machines give bigger force but at the expense of smaller movement (and vice versa): product of force and displacement unchanged
		<b>Phys.1-2c</b>	other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2a</b>	ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience

		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Galaxies in the Universe</b>	Physics	<b>Phys.24b</b>	our sun as a star, other stars in our galaxy, other galaxies
		<b>Phys.24d</b>	the light year as a unit of astronomical distance
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.2b</b>	make predictions using scientific knowledge and understanding
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3b</b>	present observations and data using appropriate methods, including tables and graphs
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses

<b>Molecular Structure In Designed Materials</b>	Physics	<b>Chem.7c</b>	properties of ceramics, polymers and composites (qualitative)
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks
		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results
		<b>KS3.WS.4c</b>	undertake basic data analysis including simple statistical techniques
<b>Gravity</b>	Physics	<b>Phys.24a</b>	gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$ , different on other planets and stars; gravity forces between Earth and Moon, and between Earth and sun (qualitative only)
		<b>KS3.WS.1a</b>	pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
		<b>KS3.WS.1b</b>	understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
		<b>KS3.WS.1c</b>	evaluate risks

		<b>KS3.WS.2c</b>	select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables
		<b>KS3.WS.2d</b>	use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
		<b>KS3.WS.2e</b>	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
		<b>KS3.WS.2f</b>	apply sampling techniques
		<b>KS3.WS.3a</b>	apply mathematical concepts and calculate results
		<b>KS3.WS.3d</b>	present reasoned explanations, including explaining data in relation to predictions and hypotheses
		<b>KS3.WS.3f</b>	identify further questions arising from their results

# stemscopes SCIENCE

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