Mapping of curriculum subjects to National Curriculum

Science

Blossom tree Nursery

Knowledge	Skills
Children to begin to know about similarities and differences in relation to: • **Places** - Different animal habitats. - Seaside and Ashton. • **Objects** - Fruits and vegetables. - Dough and cooked bread. - Making bigger/smaller shadows. - Floating and sinking. • **Materials** - Waterproof and not waterproof. - Strong and weak. - Recyclable and not recyclable. - Which materials melt in the Sun and which do not. • **Living things** - Body parts of familiar animals. - What owls and other birds eat. - Nocturnal and diurnal animals. - Adult and baby animals. - Pet shop animals. - How animals move. - Sounds animals make. - How plants grow without light, water, soil and air	**Start to ask questions:** To be inquisitive – enjoy finding out about things **Make predictions**: With support talk about what might happen based upon their own experiences and make simple observations about what is happening.

Nursery

Knowledge	Skills
Children to begin to know about similarities and differences in relation to: • **Places** - Different animal habitats. - Seaside and Ashton. • **Objects** - Fruits and vegetables. - Dough and cooked bread. - Making bigger/smaller shadows. - Floating and sinking. • **Materials** - Waterproof and not waterproof. - Strong and weak. - Recyclable and not recyclable. - Which materials melt in the Sun and which do not. • **Living things** - Body parts of familiar animals. - What owls and other birds eat. - Nocturnal and diurnal animals. - Adult and baby animals. - Pet shop animals. - How animals move. - Sounds animals make. - How plants grow without light, water, soil and air	**1.Start asking questions** Demonstrate curiosity about the world around them. **2. Begin to make predictions** With support or prompting, talk about what they think might happen based on their own experiences. **3. Decide with support how to carry out an enquiry** Respond to prompts to say what happened to objects, living things or events. **4. Start to take measurements** Use senses and simple equipment to explore the world around them, e.g. binoculars and magnifying glasses. **5. With support record data** Talk to an adult about what has been found/found out. **6. Present data** Talk to an adult about what has been found/found out. **7. Answer questions using data** **With support, explain why some things occur.** **8. Draw conclusions** With support, talk about what they have found out or what they think might happen next/ change based on their own experiences.

Reception

Knowledge	Skills
Children to know about similarities and differences in relation to:	**1.Ask questions**

• **Places** - Different animal habitats. - Seaside and Ashton. • **Objects** - Fruits and vegetables. - Dough and cooked bread. - Making bigger/smaller shadows. - Floating and sinking. • **Materials** - Waterproof and not waterproof. - Strong and weak. - Recyclable and not recyclable. - Which materials melt in the Sun and which do not. • **Living things** - Body parts of familiar animals. - What owls and other birds eat. - Nocturnal and diurnal animals. - Adult and baby animals. - Pet shop animals. - How animals move. - Sounds animals make. - How plants grow without light, water, soil and air	Demonstrate curiosity about the world around them. **2. Make predictions** With support or prompting, talk about what they think might happen based on their own experiences. **3. Decide how to carry out an enquiry** Respond to prompts to say what happened to objects, living things or events. **4. Take measurements** Use senses and simple equipment to explore the world around them, e.g. binoculars and magnifying glasses. **5. Record data** Talk to an adult about what has been found/found out. **6. Present data** Talk to an adult about what has been found/found out. **7. Answer questions using data** **With support, explain why some things occur.** **8. Draw conclusions** With support, talk about what they have found out or what they think might happen next/ change based on their own experiences.

Y1

Knowledge	Skills
Biology	
To know there are various types of plants.	To be able to identify and name a variety of common wild and garden plants
To know that they are various type of trees.	To be able to identify and name a variety of trees.
To know the term “deciduous” tree.	To be able to identify a range of deciduous trees .
To know the term “evergreen” tree.	To be able to identify a range of evergreen trees.
To know that plants have various parts.	To be able to identify and describe the basic structure of a variety of common flowering plants.
To know that trees have various parts. (To know that there are various types of animals)	To be able to identify and describe the basic structure of a tree.
• To be able to identify and name a fish • To be able to name an amphibian • To be able to name a reptile • To be able to name a bird • To be able to name a mammal	To be able to name a fish To be able to name an amphibian To be able to name a reptile To be able to name a bird To be able to name a mammal

(To be able to identify and name a variety of common animals that are carnivores, herbivores and omnivores). • To name animals that are carnivores. • To name animals that are herbivores. • To name animals that are omnivores. To know that animals can be classified according to what they eat .	To be able to identify and name a variety of common animals that are carnivores, herbivores and omnivores.
To know that different animals' bodies have different structures.	To be able to name the body parts of various animals i.e tail, legs, fin, horns
To name the different parts of the human body	To be able to identify and name the basic parts of the human body. To be able to label the basic parts of the human body. To be able to draw the basic parts of the human body.
To know that various parts of the body are associated with one of the five senses.	To be able to explain which part of the body is associated with each sense.
Physics	
To name various objects To know what material an object is made from	To be able to distinguish between an object and the material from which it is made.
To know that everyday objects are made from a variety of materials.	To be able to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.
To know the physical properties of a variety of everyday materials.	To be able to describe the simple physical properties of a variety of everyday materials
To know the physical properties of a variety of everyday materials.	To be able to compare and group together a variety of everyday materials on the basis of their simple physical properties. To be able to record their findings of the physical properties of materials in simple charts.
To be able to name the four seasons.	To be able to observe changes across the four seasons. To be able to observe and describe weather associated with the seasons and how day length varies. To be able to record their observations about weather patterns in simple charts and diagrams.
Chemistry	
Scientific Investigation skills (Enquiry, prediction, testing and recording)	To be able to talk about some reasons why they think things may happen, or why something has happened.

	To understand basic safety rules when testing out their ideas. Record what they have seen or done in different ways, including drawing and labelling diagrams . To be able to record information onto a pre-prepared chart. To be able to label objects according to a simple criterion. To be able to record things they have seen or done from memory.

Plants
Pupils should be taught to: • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees.
Animals
Pupils should be taught to: • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
Everyday materials
Pupils should be taught to: • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties.
Seasonal Changes
Pupils should be taught to: • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.

Science Y2

Knowledge	Skills
Biology	
To know that there are living things and dead things and things that have never been alive. To explain the meaning of a “habitat”.	(Through investigation and sorting activities) To be able to explore and compare the differences between things that are living, dead, and things that have never been alive. To be able to explain the meaning of a “habitat”.

To know that different animals live in habitats to which they are best suited.	To be able to identify that most living things live in habitats to which they are suited.
To know that different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.	To be able to describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other .
To know that there are various of plants and animals in different habitats, including micro-habitats .	To be able to name a variety of plants and animals in their habitats, including micro-habitats.
To know that animals obtain their food from plants and that other animals.	To be able to explain that animals obtain their food from plants and that other animals.
To know the meaning of a “food chain”.	To explain the meaning of the term “food chain”.
To know that animals, including humans, have offspring which grow into adults.	To be able to explain that animals, including humans, have offspring which grow into adults,
To know the basic needs of animals, including humans, for survival (water, food and air) .	To be able to explain the basic needs of animals, including humans, for survival (water, food and air) .
To know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	To be able to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
To know that seeds and bulbs grow into mature plants.	To be able to perform investigation to observe and describe how seeds and bulbs grow into mature plants.
To know that how plants need water, light and a suitable temperature to grow and stay healthy.	To be able to perform investigations to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Physics	
To know that everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard are suitable for particular uses.	To perform investigations to be able to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses .
To know that the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	To be able to carry out investigation to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
Chemistry	
Scientific Investigation skills (Enquiry, prediction, testing and recording)	To begin to make predictions about what might happen. To find things out with help and suggestions. To understand key factors that make a fair text.

	To gather and record data to help in answering questions and to understand why this is important. To begin to use cause and effect in their explanations and some scientific vocabulary. To be able to answer questions using evidence. To be able to ask questions about what they see. To be able to use simple tables and charts.

Living Things and Their Habitat
Pupils should be taught to: • explore and compare the differences between things that are living, dead, and things that have never been alive • 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 • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
Plants
Pupils should be taught to: • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy •
Animals, including humans
Pupils should be taught to: • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
Use of Everyday materials
Pupils should be taught to: • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Science Y3

Knowledge	Skills
Biology	
To know that animals, including humans, need the right types and amount of nutrition To know that animals, including humans, cannot make their own food; they get nutrition from what they eat.	To be able to explain animals, including humans, need the right types and amount of nutrition To be able to explain that animals, including humans, cannot make their own food; they get nutrition from what they eat.

To know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers . To know the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) To know how the requirements of plants for life vary from plant to plant. To know the way in which water is transported within plants. To know the part that flowers play in the life cycle of flowering plants. To know the process of pollination. To know the process of seed formation. To know the process of seed dispersal (To know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal). To know that humans and some other animals have skeletons and muscles for support, protection and movement.	To be able to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. To perform investigations to explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow). To be able to explain how the requirements of plants for life vary from plant to plant. To be able to investigate the way in which water is transported within plants . To perform an investigation to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. To be able to describe that humans and some other animals have skeletons and muscles for support, protection and movement. To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
Physics	
To know that humans need light in order to see things To know that dark is the absence of light . To know that light is reflected from surfaces. To know light from the sun can be dangerous To know that there are ways to protect eyes from the dangers of the sun.. To know that shadows are formed when the light from a light source is blocked by an opaque object. To find patterns in the way that the size of shadows change. To understand the size of shadows can change. To know that a surface can affect how things move.	To be able to recognise that humans need light in order to see things To explain that darkness is the absence of light. To perform investigation to be able to notice that light is reflected from surfaces. To be able to explain that light from the sun can be dangerous. To explain that there are ways to protect eyes from the dangers of the sun. To perform investigations to explore how shadows are formed when the light from a light source is blocked by an opaque object. To be able to explore finding patterns in the way that the size of shadows change. To perform investigations to compare how things move on different surfaces

To know how magnets attract or repel each other and attract some materials and not others. To know that a variety of everyday materials are/are not attracted to a magnet, and to name some magnetic materials. To know that magnets as having two poles. To know when two magnets will repel or attract, depending on which poles are facing.	To be able to notice that some forces need contact between two objects, but magnetic forces can act at a distance. To be able to perform investigations to observe how magnets attract or repel each other and attract some materials and not others . To be able to 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. To be able to describe magnets as having two poles. To be able to make predictions as to whether two magnets will attract or repel each other, depending on which poles are facing.
Chemistry	
To know that fossils are formed when things that have lived are trapped within rock. To know that soils are made from rocks and organic matter. To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	To be able to describe in simple terms how fossils are formed when things that have lived are trapped within rock. To be able to recognise that soils are made from rocks and organic matter.
Scientific Investigation skills (Enquiry, prediction, testing and recording)	To be able to identify features of a fair test and carry out investigations. To be able to ask relevant questions and use different types of scientific enquiries to answer them. To be able to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. To be able to gather, record, classify and present data in a variety of ways to help in answering questions.

Plants
Pupils should be taught to: • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • 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 • investigate the way in which water is transported within plants • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
Animals, including humans
Pupils should be taught to: • 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 • identify that humans and some other animals have skeletons and muscles for support, protection and movement.
Rocks
Pupils should be taught to: • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter.
Light
Pupils should be taught to: • recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object • find patterns in the way that the size of shadows change.
Forces and Magnets
Pupils should be taught to: • compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing.

Science Y4

Knowledge	Skills
Biology	
To know that living things can be grouped in a variety of ways. To be able to use classification keys to group, identify and name a variety of living things in their local and wider environment.	To sort living things into a variety of chosen criteria To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise that environments can change and

To recognise that environments can change and that this can sometimes pose dangers to living things. To know the simple functions of the basic parts of the human digestive system. To identify the different types of teeth in humans. To know the simple functions of a canine tooth. To know the simple functions of an incisor tooth. To know the simple function of a molar tooth. To construct a food chain. To interpret a food chain. To understand the term “predator”. To understand the term “Producer” To understand the term “Prey”	To recognise environments can change and that this can sometimes pose dangers to living things. To be able to describe the simple functions of the basic parts of the human digestive system To identify the different types of teeth in humans To be able to explain simple functions of human teeth. To be able to construct and interpret a variety of food chains, identifying producers, predators and prey.
Physics	
To know that sounds are made from vibrations. To know that vibrations from sounds travel through a medium to the ear. To identify patterns between the pitch of a sound and features of the object that produced it. To find patterns between the volume of and the strength of the vibrations that produced it. To know that that sounds get fainter as the distance from the sound source increases.	To identify how sounds are made, associating some of them with something vibrating To recognise that vibrations from sounds travel through a medium to the ear To explore patterns between the pitch of a sound and features of the object that produced it To find patterns between the volume of a sound and the strength of the vibrations that produced it. To explain that sounds get fainter as the distance from the sound source increases.
Chemistry	
To know that common appliances run on electricity . To name the basic parts of a simple series electric circuit including cells, wires, bulbs, switches and buzzers. To know that a circuit must be complete for it to work effectively for example: (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). To know that a switch opens and closes. To know that the position of a switch determines whether or not a circuit is complete For example: (Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit).	To identify common appliances that run on electricity. To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers To be able to 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 To be able to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit

To name some common conductors. To know that metals are good conductors. To name some common insulators. To know what a solid is. To know what a gas is. To know what a liquid is. To be able to compare and group materials together, according to whether they are solids, liquids or gases. To understand the process of evaporation within the water cycle. To understand the rate of evaporation is associated with temperature. To understand the process of condensation within the water cycle. (To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature).	To be able to recognise some common conductors and insulators, and associate metals with being good conductors. To be able to compare and group materials together, according to whether they are solids, liquids or gases).
Scientific Investigation skills (Enquiry, prediction, testing and recording)	To perform investigations in order to observe that some materials change state when they are heated or cooled. To perform investigations in order to measure or research the temperature (in degrees Celsius °C) at which materials change state . To be able to ask relevant questions and use different types of scientific enquiries to answer them. To be able to set up simple practical enquiries, comparative and fair tests. To make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers . To be able to gather, record, classify and present data in a variety of ways to help in answering questions. To be able to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

	To us results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. To identify differences, similarities or changes related to simple scientific ideas and processes. To use straightforward scientific evidence to answer questions or to support their findings

Working Scientifically
During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.
Living Things and their Habitats
Pupils should be taught to: • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things.
Animals, including humans
Pupils should be taught to: • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey.
States of Matter
Pupils should be taught to: • compare and group materials together, according to whether they are solids, liquids or gases • 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) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
Sound
Pupils should be taught to: • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it

• find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases
Electricity
Pupils should be taught to: • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • 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 • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors.

Science Y5

Knowledge	Skills
Biology	
To know the life cycle of humans. To know the life cycle of a mammal. To know the life cycle of amphibian. To know the life cycle of an insect. To know the life cycle of a bird. To be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. To know the life process of reproduction in some plants. To know the life process of reproduction in some animals. To know the physical changes as humans develop to old age.	
Physics	
To be able to 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. To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. To describe the movement of the Earth, and other planets, relative to the Sun in the solar system. To describe the movement of the Moon relative to the Earth. To know the Sun is approximately a spherical body.	

To know the Moon is approximately a spherical body. To know the Earth is approximately a spherical body. To be able to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. To know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To know the effects of air resistance acting between moving surfaces. To know the effects of water resistance acting between moving surfaces. To know the effects of friction acting between moving surfaces. To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	
Chemistry	
To know that some materials will dissolve in liquid to form a solution. To be able to describe how to recover a substance from a solution. To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. To know that some changes of state result in the formation of new materials. To know that some changes of state that result in the formation of new materials are not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	To perform investigations to demonstrate that dissolving, mixing and changes of state are reversible changes.
Scientific Investigation skills (Enquiry, prediction, testing and recording)	To be able to plan different types of scientific enquiries to answer questions. To be able to recognise and control variables where necessary when performing scientific enquiries To be able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. To be able to record data and results of increasing complexity using scientific diagrams

	such as classification keys, tables, scatter graphs, bar and line graphs. To use test results to make predictions to set up further comparative and fair tests. To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral forms identifying scientific evidence that has been used to support or refute ideas or arguments To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in written forms. such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments.

Living Things and their Habitats
Pupils should be taught to: • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals.
Animals, including humans
Pupils should be taught to: • describe the changes as humans develop to old age.
Properties and Changes of Materials
Pupils should be taught to: • 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 • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes • 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.
Earth and Space
Pupils should be taught to: • describe the movement of the Earth, and other planets, relative to the Sun in the solar system • describe the movement of the Moon relative to the Earth • describe the Sun, Earth and Moon as approximately spherical bodies • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
Forces
Pupils should be taught to: • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Science Y6

Knowledge	Skills
Biology	
To know how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals To be able to give reasons for classifying plants based on specific characteristics. To be able to give reasons for classifying animals based on specific characteristics. To know the main parts of the human circulatory system. To be able to describe the functions of the heart, blood vessels and blood. To know the impact of diet, exercise, drugs and lifestyle on the way their bodies function. To know the ways in which nutrients and water are transported within animals, including humans. To know that living things have changed over time. To know that fossils provide information about living things that inhabited the Earth millions of years ago. To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. To know how animals are adapted in different ways to suit their environment. To know how plants are adapted in different ways to suit their environment. To know that animal and plant adaptation may lead to evolution.	
Physics	
To know that light appears to travel in straight lines .	To be able to use the idea that light travels in straight lines to explain that objects are seen

	because they give out or reflect light into the eye.
To know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.	To be able to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Chemistry	
To know that the brightness of a lamp depends upon the number and voltage of cells used in the circuit. To know that the volume of a buzzer depends upon the number and voltage of cells used in the circuit. To know recognised symbols are used when representing a simple circuit in a diagram.	To be able to 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. To be able to use recognised symbols when representing a simple circuit in a diagram
Scientific Investigation skills (Enquiry, prediction, testing and recording)	To be able to plan different types of scientific enquiries to answer questions. To be able to recognise and control variables where necessary when performing scientific enquiries To be able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. To be able to record data and results of increasing complexity using scientific diagrams such as classification keys, tables, scatter graphs, bar and line graphs. To use test results to make predictions to set up further comparative and fair tests. To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral forms identifying scientific evidence that has been used to support or refute ideas or arguments To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in written forms. such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments.

Working scientifically
During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Living Things and their Habitats

Pupils should be taught to:

- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals
- give reasons for classifying plants and animals based on specific characteristics.

Animals, including humans

Pupils should be taught to:

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans.

Evolution and Inheritance

Pupils should be taught to:

- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Light

Pupils should be taught to:

- recognise that light appears to travel in straight lines
- use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Electricity

Pupils should be taught to:

- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- use recognised symbols when representing a simple circuit in a diagram.