Botley C of E Primary School

Curriculum Subject Map: Years 1-6

Science

	Year 1/2 Cycle A
Autumn 1	
Autumn 2	Theme Title: Land And Sea Animals, including humans. Living Things and their habitat • Notice that animals, including humans, have offspring which grow into adults. • 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). • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats.
Spring 1	Theme Title: Turrets, Towers and Tunnels Everyday Materials Use of Everyday Materials • 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. • 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.
Spring 2	
Summer 1	Theme Title: The Enchanted Woodland Plants • 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. • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • 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. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
Summer 2	Theme Title: Amazing Asia Animals, including humans • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

Longitudinal Study	<u>What lives on our school grounds and does this change during the year?</u> • Explore and compare the differences between things that are living, dead, and things that have never been alive. • Identify a variety of animals and plants in their habitats including micro-habitats. • Observe closely, using simple equipment. • Identifying and classifying
Scientific Investigations	During the year children will work scientifically when carrying out investigations and working practically. Through this they will: • ask simple questions and recognising that they can be answered in different ways • observe closely, using simple equipment • perform simple tests • identify and classify • use their observations and ideas to suggest answers to questions • gather and recording data to help in answering questions

	Year 1/2 Cycle B
Autumn 1	Theme Title: Super Me Animals, including Humans • Find out about and describe the basic needs of animals including humans, for survival, air and water. • Describe the importance for humans of exercise, eating the right amount of different types of food and hygiene. • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • Notice that animals, including humans, have offspring which grow into adults.
Autumn 2	Theme Title: Who's Afraid of the Big Bad Wolf Everyday Materials Us of Everyday Materials • 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. • 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.
Spring 1	Theme Title: Pole to Pole Animals, including Humans Living Things and their Habitats • 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). • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • 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. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
Spring 2	
Summer 1	
Summer 2	Theme Title: Botley – Time and Space Travellers Plants Living Things and their Habitats • 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. • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • 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. • identify and name a variety of common animals that are carnivores, herbivores and omnivores .
Longitudinal Study	<u>How are the four seasons different in our school grounds?</u> • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies • Perform simple tests. • Use observations and ideas to suggest answers to questions. Geography link: Identify seasonal and daily weather patterns in the United Kingdom Aim: to get children to understand the different seasons in the UK as well as the different weather around the UK. Teaching idea – pick a seaside town, lighthouse or similar in the four UK countries and look at the weather in those places. Type 'weather X' (where X is the name of the place) into Google and it gives a weather forecast and shows the differences and similarities clearly.
Scientific Investigations	During the year children will work scientifically when carrying out investigations and working practically. Through this they will: • ask simple questions and recognising that they can be answered in different ways • observe closely, using simple equipment • perform simple tests • identify and classify • use their observations and ideas to suggest answers to questions • gather and recording data to help in answering questions

	Year 3/4 Cycle A
Autumn 1	Theme Title: Potions States of Matter • 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 that happens in degrees Celsius.
Autumn 2	Theme Title: Scrumdiddlyumptious Animals, including humans • 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. • Describe the simple functions of the basic parts of the digestive systems in humans. • Identify the different types of teeth in humans and their simple functions. • Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
Spring 1	Discrete Light • 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 a solid object. • Find patterns in the way that the size of shadows change.
Spring 2	
Summer 1	**Theme Title: Tremors** **Sound** • 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 objects that produced it. • Find patterns between the volume of sound and the strength of the vibrations that produced it. • Recognise that sounds get fainter as the distance from the sound increases.
Summer 2	Theme Title: Mother Earth Plants • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Explore the requirement 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 lifecycle of flowering plants, including pollination, seed formation and seed dispersal.
Longitudinal Study	<u>Do all plants grow at the same rate?</u> • Explore the requirements of plants for life and growth. • Use classification keys to identify and name different living things. • Make systematic and careful observations.

	• Make systematic and careful observations, taking accurate measurements using standard units.
Scientific Investigations	During the year children will work scientifically when carrying out investigations and working practically. Through this they will: • ask relevant questions and using different types of scientific enquiries to answer them • set up simple practical enquiries, comparative and fair tests • make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gather, record, classify and present data in a variety of ways to help in answering questions • record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion • use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings.

	Year 3/4 Cycle B
Autumn 1	Theme Title: The Blue Abyss Animals, including humans Living Things and their Habitats States of Matter • Construct and interpret a variety of food chains, identifying producers, predators and prey. • Recognise that environments can change and that this can sometimes pose danger to living things. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation.
Autumn 2	Theme Title: Tribal Tales Rocks • 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
Spring 1	
Spring 2	Theme Title: Stay Safe Electricity • 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
Summer 1	Theme Title: Dynamic Discoveries Forces and Magnets • compare how things move on different surfaces • notice that some forces need contact between 2 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 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing
Summer 2	Theme Title: Amazon Adventure Animals, including humans Living Things and their Habitats • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Explore the requirement 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 lifecycle of flowering plants, including pollination, seed formation and seed dispersal.
Longitudinal Study	What birds live on our school grounds and how/why does this change during the year? Can we encourage more? • Identify that birds get nutrition from what they eat.

	• Use classification keys to identify and name different living things. • Record findings using bar charts and tables. • Gather and record data in a variety of ways to answer questions.
Scientific Investigations	During the year children will work scientifically when carrying out investigations and working practically. Through this they will: • ask relevant questions and using different types of scientific enquiries to answer them • set up simple practical enquiries, comparative and fair tests • make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gather, record, classify and present data in a variety of ways to help in answering questions • record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion • use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings.

	Year 5/6 Cycle A
Autumn 1	Theme Title: Scream Machine Forces Electricity • 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. • 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.
Autumn 2	
Spring 1	
Spring 2	Theme Title: Fantastic Beasts Evolution and inheritance Living things and their habitats Animals including humans • 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 • 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. • 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.
Summer 1	Discrete • Focus on carrying out scientific investigations from across a range of aspects of the science curriculum.
Summer 2	Theme Title: Lights, Camera, Action Light • Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Longitudinal Study	Do the habitats in the school grounds support different species of creature? • Describe how living things are classified into broad groups according to common observable characteristics. • Give reasons for classification. • Record data and results in different ways.

	• Report and present finding form enquires.
Scientific Investigations	During the year children will work scientifically when carrying out investigations and working practically. Through this they will be: • 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 presentation • Identifying scientific evidence that has been used to support or refute ideas or arguments.

	Year 5/6 Cycle B
Autumn 1	Theme Title: Fit in Five Animals, including humans • 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. • Describe the changes as humans develop to old age.
Autumn 2	Theme Title: Home or Away? Properties and Changes of Materials • 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
Spring 1	Theme Title: Tomorrow's World and Beyond Earth and Space • 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 • Recognise that light appears to travel in straight lines
Spring 2	
Summer 1	Discrete • Focus on carrying out scientific investigations from across a range of aspects of the science curriculum.
Summer 2	Light • Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Longitudinal Study	Does our weather follow seasonal patterns? • Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeated readings. • Make predictions and use scientific evidence to support or refute ideas and arguments.
Scientific Investigations	During the year children will work scientifically when carrying out investigations and working practically. Through this they will be: • 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 presentation • Identifying scientific evidence that has been used to support or refute ideas or arguments.