

Baydon St Nicholas Science Coverage 2026-2027 including skills and knowledge

Robins

SCIENCE Robins YEAR EYFS & 1	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
UNIT	Animals: Sensitive bodies	Materials: Everyday materials	Animals, including humans: Comparing animals	Materials: Uses of everyday materials	Making connections: Ocean protectors	Making connections: fairytale science
Unit Outcome s	Pupils who are secure will be able to: Draw and label human body parts. Identify the body parts associated with each sense. When working scientifically, pupils who are secure will be able to: Compare and group body parts. Begin to recognise patterns in data and use these to answer questions. Record data in a table. Measure using non-standard units.	Pupils who are secure will be able to: Name objects and identify the materials they are made from. Recognise that objects are made from materials that suit their purpose. Recall that a property is how a material can be described. When working scientifically, pupils who are secure will be able to: Sort objects based on the materials they are made from. Group objects based on their properties. Suggest ways to test materials for their properties. Make predictions and recognise whether they were accurate. Use their observations to answer questions. Begin to recognise if a test	Pupils who are secure will be able to: Name and describe the physical features of a range of animals. Sort animals into groups based on their similarities and differences. Identify characteristics specific to mammals, birds, reptiles, amphibians and fish. Recall the diets of carnivores, herbivores and omnivores. When working scientifically, pupils who are secure will be able to: Use a non-fiction text to find out about specific animals' diets. Recognise that there are different ways to gather data. Record data in a block graph and use this to answer questions. Recognise what the	Pupils who are secure will be able to: Name objects with the same use that are made from different materials. Name materials that are used to make objects with different uses. Recognise that stretching, twisting, bending and squashing can cause some solid objects to change shape. Name properties that make materials suitable for their use. When working scientifically, pupils who are secure will be able to: Measure using non-standard units. Recording results in a table. Use data to answer a simple question. Record results in a block graph.	Pupils who are secure will be able to: Describe how some living things in a rock pool have their needs met and how the conditions change. Order the stages of different animal life cycles. Identify similarities and differences between different animal life cycles. Recall different types of litter that affect ocean habitats and describe some of the problems linked with ocean litter. Suggest ways to reduce how human litter affects the ocean. Recall how to write a food chain and produce an example of an ocean food chain. Describe how litter affects a food chain. When working scientifically, pupils who are secure will be able to: Complete a tally chart to record the living things in rock pools and summarise observations. Make careful observations and pose questions about ocean animals and their life cycles. Begin to plan an experiment and predict changes to materials in ocean water over time.	Compare and describe animal features. Describe the properties of everyday materials. Use natural materials to build a gingerbread man home. Use the senses to observe and describe. When working scientifically, pupils who are secure will be able to: Use a stopwatch to measure and compare. Order a simple method. Plan how to carry out a test. Decide what observations to record. Show results in a block graph.

SCIENCE Robins YEAR EYFS & 1	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 1 Key Skill	Posing questions Recognising there are different types of enquiry (ways to answer a question). Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Measuring (quantitative data) Using non-standard units to measure and compare. Recording (diagrams) Drawing and labelling simple diagrams. Recording (tables) Using a prepared table to record results, including numbers and simple observations. Grouping and classifying Grouping based on visible characteristics. Analysing and drawing conclusions Using their results to answer simple questions.	Posing questions Responding to suggestions on how to answer questions. Planning Beginning to recognise whether a planned test is fair. With support, deciding if suggested observations are suitable. Predicting Suggesting what might happen, often justifying with personal experience. Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Recording (tables) Using a prepared table to record results including simple observations. Grouping and classifying Grouping based on visible characteristics. Analysing and drawing conclusions Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.	Posing questions Recognising there are different types of enquiry (ways to answer a question). Responding to suggestions on how to answer questions. Planning Deciding if suggested observations are suitable, with support. Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Researching Gathering specific information from one simplified, specified source. Recording (diagrams) Drawing and labelling simple diagrams. Grouping and classifying Grouping based on visible characteristics. Graphing Representing data using	Posing questions Recognising there are different types of enquiry (ways to answer a question). Measuring (quantitative) Using non-standard units to measure and compare. Recording (tables) Using a prepared table to record results, including numbers. Grouping and classifying Grouping based on visible characteristics. Graphing Representing data using pictograms and block graphs. Analysing and drawing conclusions Using their results to answer simple questions.	Posing questions Exploring the world around them and raising their own simple questions. Recognising there are different types of enquiry (ways to answer a question). Planning Beginning to recognise whether a planned test is fair. Ordering a simple method. Predicting Suggesting what might happen, often justifying with personal experience. Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Recording (tables) Using a prepared table to record results, including simple observations and tally frequency. Graphing Representing data using pictograms. Analysing and drawing conclusions Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.	Planning Beginning to recognise whether a planned test is fair. With support, deciding if suggested observations are suitable. Predicting Suggesting what might happen, often justifying with personal experience. Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Measuring (quantitative data) Beginning to use standard units and read simple scales to measure and compare. Beginning to use simple measuring equipment to make approximate measurements. Recording (tables) Using a prepared table to record results, including: numbers; simple observations. Grouping and classifying Grouping based on visible

SCIENCE Robins YEAR EYFS & 1	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 1 Key Knowledge	To know: The key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth and teeth). The five main senses: sight, smell, hearing, taste and touch. The skin is used for touch, the tongue is used for taste, the nose is used for smell, the eyes are used for sight, and the ears are used for hearing. Science in action To know: A range of jobs and careers that use scientific knowledge and methods. About the work of modern-day scientists. There are spiritual, moral, social and cultural links with Science.	Objects are items or things. A material is what an object is made from. A variety of everyday materials, including wood, plastic, glass, metal, water and rock. Property refers to how a material can be described. Materials can be grouped based on their physical properties.	To know: A variety of common animals (including fish, amphibians, reptiles, birds and mammals). The main body parts of common animals (arms, legs, wings, tails, fins, head, trunk, horns, tusks and shell). A carnivore is an animal that eats other animals and to give some examples. A herbivore is an animal that eats only plants and to give some examples. An omnivore is an animal that eats both animals and plants and to give some examples. Science in action To know: About famous scientists throughout history.	To know: Objects are made from materials that suit their uses. One material can be used for a range of purposes. Different materials can be used for the same purpose. A push or pull must be applied to change the shape of a solid object. Solid objects can be stretched, twisted, bent or stretched. Different solid objects may take different amounts of force to change shape. Science in action To know: A range of jobs and careers that use scientific knowledge and methods. Science in the news and recent discoveries. Spiritual, moral, social and cultural links with science.	Introduction to plants To know: A variety of common plants and how they differ. The basic structure (including leaves, flowers, fruit, roots, bulb, seed, trunk, branches, stem) of a variety of common plants, including flowering plants and trees. Seasonal changes To know: The name and order of the four seasons; spring, summer, autumn and winter. Weather associated with the four seasons and how it changes (in the UK). That day length varies across the four seasons, with fewer daylight hours in the winter and more in the summer. Habitats To know: A variety of plants and animals and describe some differences. A habitat is the environment where an animal or plant lives/ grows, because it provides what they need to survive. A micro-habitat is a very small habitat (e.g. stones, logs and leaf litter). Living things depend upon each other (e.g. for food, shelter, etc.). A variety of habitats, including woodland, ocean, rainforest and coastal. A food chain can be used to show how animals obtain food from eating either plants and/or other animals.	Animals, including humans To know: A variety of common animals (including fish, amphibians, reptiles, birds and mammals). The main body parts of common animals (arms, legs, wings, tails, fins, head, trunk, horns/tusks and shell). The five main senses: sight, smell, hearing, taste and touch. Skin is used for touch, the tongue is used for taste, the nose is used for smell, the eyes are used for sight and the ears are used for hearing. Living things and their habitats To know: A habitat is the environment where an animal or plant lives/grows because it provides what they need to survive. A micro-habitat is a very small habitat (e.g. stones, logs and leaf litter). Everyday materials To know: A variety of everyday materials, including wood, plastic, glass, metal, water and rock. Property refers to how a material can be described. The physical properties of a variety of everyday materials. Why objects are made from particular materials and to give examples of their suitability. One material can be used for a range of purposes (and to give examples). That different materials can be used for the same purpose (and to give examples). Why certain materials are unsuitable for particular objects.

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Year 1 Key Vocabulary	compare group hearing pattern sense(s) sight smell taste touch	absorbent fabric glass group material metal object plastic rock tough waterproof wood	amphibian bird carnivore compare diet difference fish group herbivore mammal observe omnivore reptile scientist similarity	elastic fabric (Y1) flexible glass (Y1) material (Y1) metal (Y1) object (Y1) plastic (Y1) property rock (Y1) suitable wood (Y1)	compare depend difference egg food chain habitat invention life cycle live young observe predict results scientist season similarity table test	absorbent amphibian bird compare difference fish group hearing mammal material measure object observe predict property research reptile sight similarity smell suitable table taste test touch waterproof

Swifts

SCIENCE Swifts YEAR 2 & 3	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
UNIT	Forces and space: Forces and magnets	Materials: States of matter	Energy: Sound and vibrations	Living things: Classification and changing habitats	Plants: Plant reproduction	Making connections: How does wind force affect seed dispersal?

SCIENCE Swifts YEAR 2 & 3	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Unit Outcome s Identify examples of pushes, pulls and twists. Define a force, including describing, naming and classifying contact and non-contact forces. Describe the relationship between friction and the roughness of a surface. Identify examples of friction being useful or not. Predict attraction and repulsion between like and opposite poles. Identify examples of magnetic and non-magnetic materials. Name some examples of types of magnets and compare their strengths. Describe some examples of the uses of magnets. When working scientifically, pupils who are secure will be able to: Use arrows and scientific vocabulary to show the direction of a contact force. Use evidence to support conclusions. Identify the variables to change,	Identify examples of pushes, pulls and twists. Define a force, including describing, naming and classifying contact and non-contact forces. Describe the relationship between friction and the roughness of a surface. Identify examples of friction being useful or not. Predict attraction and repulsion between like and opposite poles. Identify examples of magnetic and non-magnetic materials. Name some examples of types of magnets and compare their strengths. Describe some examples of the uses of magnets. When working scientifically, pupils who are secure will be able to: Use arrows and scientific vocabulary to show the direction of a contact force. Use evidence to support conclusions. Identify the variables to change,	Identify solids, liquids and gases using their properties. Describe melting, freezing, condensing and evaporating. Describe the different stages of the water cycle. Describe how temperature affects the rate of evaporation and, therefore, the water cycle. When working scientifically, pupils who are secure will be able to: Ask relevant questions. Use results to draw simple conclusions. Use thermometers to take accurate measurements. Make predictions for new values. Record findings using labelled diagrams. Research using more than one source.	Describe how sounds are made. Describe how sounds are heard through different mediums. Explain the relationship between vibration strength and volume. Describe the relationship between volume and distance. Describe pitch and how to change it. Explain how insulating materials can be used to muffle sound. When working scientifically, pupils who are secure will be able to: To observe closely how different instruments create a sound. Research how whales and dolphins communicate underwater. Present results using a bar chart. Suggest which variables to measure and for how long.	Group animals in various ways, including vertebrates (mammals, birds, reptiles, amphibians, fish) and invertebrates. Group plants in various ways, including flowering and non-flowering plants. Recognise and describe different habitats and their inhabitants. Recognise the impact humans can have on habitats. Recognise the impact of natural disasters on habitats. When working scientifically, pupils who are secure will be able to: Record data in different ways. Apply and create classification keys. Make careful observations. Make and use classification keys. Present information in different ways.	Identify what plants need to grow healthily. Describe the structure and function of the parts of flowering plants. Investigate how plants transport water. Describe the life cycle of a flowering plant. Explain seed dispersal methods. When working scientifically, pupils who are secure will be able to: Pose relevant questions. Design and record in results tables. Plan a simple enquiry. Complete, read and interpret data in a bar chart. Identify and suggest changes to an enquiry. Use results to draw conclusions.	Recall key knowledge from previous units. Apply knowledge in new contexts. When working scientifically, pupils who are secure will be able to: Carry out a full scientific enquiry.

SCIENCE Swifts YEAR 2 &	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 2 Key Skills	Skills Posing questions Exploring the world around them and raising their own simple questions. Recognising there are different types of enquiry (ways to answer a question). Responding to suggestions on how to answer questions. Planning Beginning to recognise whether a planned test is fair. With support, deciding if suggested observations are suitable. Ordering a simple method. Predicting Suggesting what might happen, often justifying with personal experience. Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Measuring (quantitative data) Using non-standard units to measure and compare. Beginning to use standard units and read simple scales to measure and compare. Beginning to use simple measuring equipment to make approximate measurements. Researching Gathering specific information from one simplified, specified source. Recording (diagrams) Drawing and labelling simple diagrams. Recording (tables) Using a prepared table to record results including: • Numbers. • Simple observations. • Tally frequency. Grouping and classifying Grouping based on visible characteristics. Organising questions to create a simple classification key. Graphing Representing data using pictograms and block graphs.	Skills Posing questions Exploring the world around them and raising their own simple questions. Recognising there are different types of enquiry (ways to answer a question). Responding to suggestions on how to answer questions. Planning Beginning to recognise whether a planned test is fair. With support, deciding if suggested observations are suitable. Ordering a simple method. Predicting Suggesting what might happen, often justifying with personal experience. Observing (qualitative data) Using their senses to describe, in simple terms, what they notice or what has changed. Measuring (quantitative data) Using non-standard units to measure and compare. 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Beginning to use simple measuring equipment to make approximate measurements. Researching Gathering specific information from one simplified, specified source. Recording (diagrams) Drawing and labelling simple diagrams. Recording (tables) Using a prepared table to record results including: • Numbers. • Simple observations. • Tally frequency. Grouping and classifying Grouping based on visible characteristics. Organising questions to create a simple

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Year 3 Key Skills	Beginning to select from options which variables will be changed, measured and controlled. Suggesting what observations to make and how long to make them for. Planning a simple method, verbally and in writing. Gathering specific information from a variety of sources. Beginning to draw more scientific diagrams by labelling with more scientific vocabulary and using arrows. Representing data using bar charts. Writing a conclusion to summarise findings using simple scientific vocabulary. Beginning to suggest how one variable may have affected another. Beginning to quote results as evidence of relationships. To explore 'Science in action' by exploring the uses of friction and magnets in everyday life and industry.	Posing questions Considering what makes a testable question. Measuring Using standard units to measure and compare. Using measuring equipment with increasing accuracy. Recording Drawing in 2D to produce simple line diagrams. Labelling diagrams with more scientific vocabulary. Researching Gathering specific information from a variety of sources. Analysing and drawing conclusions Beginning to use identified patterns to predict new values or trends. Writing a conclusion to summarise findings using simple scientific vocabulary.	Planning To suggest what observations to make and how long to make them for. Observing To observe closely how different instruments create a sound. Researching To research how cetaceans communicate underwater. Recording To present results using a bar chart. To design simple results tables. Analysing and drawing conclusions To identify when results or observations do not match predictions.	Observing Using their senses to describe, in more detail and with simple scientific vocabulary, what they notice or what has changed. Recording Recording data in Carroll and Venn diagrams. Using a prepared table to record results, including more detailed observations. Using tables with more than two columns. Grouping and classifying Grouping based on visible characteristics and measurable properties. Populating a pre-prepared branching and number key. Choosing appropriate questions for classification keys. Researching Gathering specific information from a variety of sources.	Posing questions Beginning to raise further questions during the enquiry process. Considering what makes a testable question. Beginning to recognise that there are different types of enquiry and that they are suitable for different questions. Beginning to make suggestions about how different questions could be answered. Planning Beginning to suggest what observations to make and how long to make them for. Making predictions about what they think will happen by using scientific knowledge and/or personal experience to explain their prediction. Observing Using their senses to describe, in more detail and with simple scientific vocabulary, what they notice or what has changed. Measuring Using standard units to measure and compare. Using measuring equipment with increasing accuracy. Reading scales with unmarked intervals between numbers. Recording Using a prepared table to record results including more detailed observations. Using tables with more than two columns. Identifying and adding headings to tables. Beginning to design simple results tables. Grouping and classifying Grouping based on visible characteristics and measurable properties. Graphing Reading the value of bars with greater accuracy. Analysing and drawing conclusions Writing a conclusion to summarise findings using simple scientific vocabulary. Beginning to suggest how one variable may have	This unit revisits the working scientifically skills covered in Year 3/4 (B), including: Posing questions. Planning. Predicting. Observing. Measuring. Recording. Graphing. Analysing and drawing conclusions. Evaluating.

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Year 2 Key Knowledge	To know that one material can be used for a range of purposes (and to give examples.) To know that different materials can be used for the same purpose (and to give examples.) To know why certain materials are unsuitable for particular objects. To know that a push or pull must be applied to change the shape of a solid object. To know that solid objects can be squashed, bent, twisted or stretched. To know that different solid objects may take a different amount of force to change shape.	to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. To know that property refers to how a material can be described. To describe the physical properties of a variety of everyday materials. To understand that materials can be grouped based on their physical properties.	To know the five main senses: sight, smell, hearing, taste and touch. To know that eyes are used for sight, the nose is used for smell, ears are used for hearing, the tongue and mouth are used for taste and the skin is used for touch.	To know that a habitat is the environment where an animal or plant lives/grows, because it provides what they need to survive. To know that a micro-habitat is a very small habitat (e.g. stones, logs and leaf litter). To know that living things depend upon each other (e.g. for food, shelter). To begin to understand some of the life processes, including movement, reproduction, sensitivity, growth, excretion and nutrition. To know the difference between things that are living, dead, and things that have never been alive, using some of the life processes. To name a variety of habitats, including woodland, ocean, rainforest and coastal. To understand that a food chain can be used to show how animals obtain food from eating either plants and/or other animals. To understand how living things change, and that animals have offspring that grow into adults. To know which offspring comes from which parent animal. To know the stages in some animal life cycles. To know that animals, including humans, need water, food and air to survive. To understand the importance of exercise, a balanced diet and hygiene for humans To know that seeds and bulbs grow into seedlings by producing roots and shoots. To know that seedlings grow into mature plants by developing parts such as roots, stems, leaves and flowers. To know that seeds need water and warmth to germinate. To know that plants need water, light and a suitable temperature for growth and health. To know key parts of the human body.	to know a variety of common plants, and how they differ. To know that deciduous trees lose their leaves seasonally, but evergreen trees do not. To know the basic structure (including leaves, flowers (blossom), fruit, roots, bulb, seed, trunk, branches, stem) of a variety of common plants, including flowering plants and trees. To begin to understand how plants grow and change over time. To know the name and order of the four seasons; spring, summer, autumn and winter. To know that it is unsafe to look directly at the Sun.	to know a variety of common plants, and how they differ. To know that deciduous trees lose their leaves seasonally, but evergreen trees do not. To know the basic structure (including leaves, flowers (blossom), fruit, roots, bulb, seed, trunk, branches, stem) of a variety of common plants, including flowering plants and trees. To begin to understand how plants grow and change over time. To know the name and order of the four seasons; spring, summer, autumn and winter. To know that it is unsafe to look directly at the Sun.

SCIENCE Swifts YEAR 2 & 3	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 3 Key Knowledge	Examples of contact and non-contact forces. Some forces are a result of contact between two surfaces but some forces can act at a distance (e.g. magnetism). Magnets have a north and south pole. Some examples of magnetic materials, including iron and nickel, and how they react to a magnet and each other. Some different examples of magnets, including bar, horseshoe, button and ring. Some uses of magnets. Friction is a contact force that acts between two surfaces to slow an object down. Magnetism is a non-contact force that affects objects containing magnetic metal. That the opposite poles of a magnet attract one another and like poles repel one another. That rougher surfaces have more friction between them than smoother surfaces. The strength of different magnets may vary.	All substances around us can exist as solids, liquids and gases. A property of a solid is that it keeps its shape unless a force is applied to it. A property of a liquid is that it can flow freely and take on the shape of a container. A property of a gas is that it does not have a fixed shape and can escape from an unsealed container. Heating causes solids to turn into liquids (melting) and liquids to turn into gases (evaporating). Cooling causes gases to turn into liquids (condensing) and liquids to turn into solids (freezing). Water can exist as a solid, a liquid or a gas. The melting point of water is zero degrees Celsius and the boiling point of water is 100 degrees Celsius. Water flows around the world in a continuous process called the water cycle. In the water cycle, evaporation is when bodies of water turn into gas and rise into the air.	Sound is a result of vibrations. Vibrations from sounds travel through mediums to the ear. An insulating material reduces the amount of vibrations that pass through it and can be used to protect the ears from damaging sounds. Different materials provide different amounts of insulation against sound. A variety of ways to change the pitch or volume of a sound. Quicker vibrations cause higher-pitched sounds and slower vibrations cause lower-pitched sounds. Stronger vibrations cause louder sounds and weaker vibrations cause quieter sounds. Sounds get fainter as the distance from the sound source increases.	Living things can be grouped in different ways. A classification key can be used to group and identify plants and animals. Vertebrates are animals that have a backbone and invertebrates are animals that do not have a backbone. Plants can be grouped into flowering or non-flowering varieties. Flowering plants include grasses and non-flowering plants include ferns and mosses. There are five main vertebrate groups: birds, mammals, reptiles, amphibians and fish. Invertebrate groups include snails, slugs, worms, spiders and insects. Habitats can change throughout the year, which can be dangerous for living things. Humans can have both a positive and negative impact on the environment.	The functions of the basic parts of a plant and the relationship between structure and function. Water is transported within a plant from the root, through the stem and to the leaves. Plants need water, light, air, nutrients and a suitable temperature for growth and health. The needs for growth and health vary from plant to plant. The life cycle of a plant from seed to mature plant. Flowers are the reproductive organs of a plant. Pollination is the transfer of pollen to the female (part of the) flower. The process of seed formation is the growth of a seed after pollination. Different methods of seed dispersal and their benefits.	This unit revises the following key knowledge from the previous Year 3/4 (B) units: Forces and magnets To know: Examples of contact and non-contact forces. Some forces are a result of contact between two surfaces, but some forces can act at a distance (e.g. magnetism). Friction is a contact force that acts between two surfaces to slow an object down. States of matter To know: All substances around us can exist as solids, liquids and gases A property of a solid is that it keeps its shape unless a force is applied to it. A property of a liquid can flow freely and take on the shape of a container. A property of a gas does not have a fixed shape and can escape from an unsealed container. Sound and vibrations To know: Sound is a result of vibrations. Vibrations from sounds travel through mediums to the ear. A variety of ways to change the pitch or volume of a sound. Stronger vibrations cause louder sounds and weaker vibrations cause quieter sounds. Classification and changing habitats To know: Living things can be grouped in different ways. Plants can be grouped into flowering or non-flowering varieties. Flowering plants include grasses and non-flowering plants include ferns and mosses. Plant reproduction To know: The functions of the basic parts of a plant and the relationship between structure and function.

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Year 2 & 3 Key Vocabulary	attract contact force electromagnet force friction magnet magnetic material magnetism non-contact force non-magnetic material north pole repel south pole	drought evaporating evaporation rate flood force freezing freezing point gas gaseous liquid matter melting melting point precipitation rate solid state steam temperature thermometer the water cycle volume water vapour	air bar chart (Y3) eardrum insulator observe (Y1) pitch plan (Y1) predict (Y2) proof record (Y3) research (Y2) results table (Y3) sound trustworthy (Y3) vibration volume	amphibian (Y1) bird (Y1) classification key classify conservation deforestation endangered fish (Y1) flowering plants (Y3) group habitat (Y2) insect invertebrate (Y3) mammal (Y1) nature reserve non-flowering plants observe (Y1) pollution reptile (Y1) research (Y2) slug snail spider vertebrate (Y3) worm	bar chart conclusion female flowering plant male pattern (KS1) pollen pollination predict (KS1) record reproduction results table seed dispersal transport variable	bar chart conclusion conservation control variable deforestation fair flowering plant force friction investigation measure (KS1) method pattern (KS1) pollution predict (KS1) proof record results table seed (KS1) seed dispersal sound trustworthy variable vibration volume

Firecrests

SCIENCE FIRECRE STS YEAR 4 & 5	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
UNIT	Living things: Life cycles and reproduction	Forces and space: Unbalanced forces	Living things: Classifying big and small	Energy: Circuits, batteries and switches	Living things and their habitats: Evolution and inheritance	Animals, including humans: Human timeline Making connections: Making connections: How does light affect the direction of plant growth?

SCIENCE FIRECRE STS YEAR 4 & 5	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Unit Outcome s	Pupils who are secure will be able to: Describe the life cycle of a plant, including the reproductive stage. Describe the life cycle of a mammal. Describe the life cycle of a bird and compare it with that of a mammal. Describe the life cycle of an amphibian. Describe the life cycle of an insect and compare it with that of an amphibian. Describe asexual reproduction in plants. When working scientifically, pupils who are secure will be able to: Observe and compare equivalent parts in different flowers. Research the life cycles of different mammals. Pose questions to compare the life cycles of different birds. Suggest how one temperature may affect egg hatching. Use data to describe a relationship and make predictions. Represent root growth over time on a line graph.	Describe gravity and its effects. Describe the relationship between mass and gravity. Describe air resistance and its effects. Describe friction and its effects. Describe water resistance and its effects. Describe the relationship between surface area and air and water resistance. Explain how to make an object aerodynamic or streamlined. Describe the effects of levers, pulleys and simple machines on movement. When working scientifically, pupils who are secure will be able to: Analyse predictions, data and anomalies to write a conclusion. Plan a fair test to investigate air resistance. Write a method. Evaluate a method and judge the degree of trust. Design a results table. Calculate the mean average from repeat data. Draw and annotate a diagram. To draw an accurate line graph.	Define the term 'organism' and name the seven life processes of all living things. Describe the work of Carl Linnaeus. Define the term 'vertebrate' and name the vertebrate groups. Describe the characteristics of fish, amphibians, reptiles, birds and mammals. Compare the characteristics of the vertebrate groups. Define the term 'invertebrate'. Describe the characteristics of worms, snails, spiders and insects. Compare the characteristics of the invertebrate groups. Name the plant groups. Describe the characteristics of flowering plants, ferns, mosses and conifers. Define the term 'micro-organism' and name some examples. When working scientifically pupils who are secure will be able to: Use a classification key to group and identify organisms. Make a simple classification key.	Describe the function of key electrical components and explain how the models used in the lesson represent these. Correctly predict if an electrical circuit will work or not, explaining why using their knowledge of complete loops, power sources and presence of components. Describe the relationship between the number of bulbs in a circuit, the bulb brightness and the amount of resistance. Explain that increasing the number of components increases the resistance, affecting the flow of current and energy transferred. Identify that batteries are a voltage source; they come in different voltages, affecting bulb brightness. Describe that voltage can be changed using different numbers of cells in a circuit and that more cells or a higher voltage causes brighter bulbs. Use the relationship between voltage and bulbs to predict what will happen with buzzers and motors. Build an electrical circuit with a switch to control its function, explain how the switch and the electrical circuit solve the problem and recall different examples of problems that can be solved using an electrical circuit. When working scientifically, pupils who are secure will be able to: Draw circuit diagrams with straight lines and using standard circuit symbols. Design a results table with an appropriate number of columns.	Define and identify variation in organisms and recall that it is caused by inherited and environmental factors. Recall that living things produce offspring of the same kind but are not normally identical to their parents. Describe patterns of inheritance from parent to offspring in a given example or family tree. Describe what an adaptation is; it cannot be chosen and is usually inherited. Describe key characteristics that would help an organism to survive and explain how an adaptation helps the organism to survive. Explain how variation may affect survival within a population and recall what natural selection means. Recall what evolution is, identify differences between a living thing and its ancestor and describe key steps in the evolution of a species. Recall different types of evidence that can be used to explain evolution and describe methods that make scientists' results or conclusions more trustworthy. When working scientifically, pupils who are secure will be able to: Sort variation as environmental, inherited or a mixture of both. Evaluate a method by recalling variables that were effectively kept the same and those that were harder to control. Comment on the reliability of the results and the degree of trust. Consider how evidence is used to form theories and the degree of trust the evidence offers.	Order the stages in growth and development from birth to old age. Describe physical and developmental changes from a baby through to old age. Describe changes that occur in males and females during puberty. Suggest ways to manage the changes that occur during puberty. Recall what is meant by a gestation period. Describe how gestation varies across animals and compare this to humans. When working scientifically, pupils who are secure will be able to: Use data to describe growth from baby to adult. Identify where on the graph the rate of growth changes. Use a line graph to make predictions about height. Choose a suitable title and axes labels for the scatter graph and plot data on the scatter graph. Recall key knowledge from previous units. Apply knowledge in new contexts. When working scientifically, pupils who are secure will

SCIENCE FIRECRE STS YEAR 4 & 5	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 4 Key Skills	Posing questions Beginning to raise further questions during the enquiry process. Considering what makes a testable question. Beginning to recognise that there are different types of enquiry and that they are suitable for different questions. Beginning to make suggestions about how different questions could be answered Planning Beginning to select from options which variables will be changed, measured and controlled. Beginning to suggest what observations to make and how long to make them for. Planning a simple method, verbally and in writing. Beginning to write a simple method in numbered steps. Selecting and beginning to decide what simple equipment might be used to aid observations and measurements. Predicting Making predictions about what they think will happen by: • Using scientific knowledge and/or personal experience to explain their prediction (because...) • Beginning to consider cause and effect when making predictions, where appropriate. • Predicting a trend by considering how the changing variable will affect the measured variable. (The smoother the surface, the longer the distance the car will travel) Observing (qualitative data) Using their senses to describe, in more detail and with simple scientific vocabulary, what they notice or what has changed. Measuring (quantitative data) Using standard units to measure and compare. Using measuring equipment with increasing accuracy. Reading scales with unmarked intervals between numbers. Researching Gathering specific information from a variety of sources. Recording (diagrams) Beginning to draw more scientific diagrams by: • Using some standard symbols. • Drawing in 2D to produce simple line diagrams. • Labelling with more scientific vocabulary. Recording (tables) Using a prepared table to record results including more detailed observations.	Planning Beginning to select from options which variables will be changed, measured and controlled. Beginning to suggest what observations to make and how long to make them for. Planning a simple method, verbally and in writing. Beginning to write a simple method in numbered steps. Selecting and beginning to decide what simple equipment might be used to aid observations and measurements. Recording (tables) Using a prepared table to record results including more detailed observations. Using tables with more than two columns. Identifying and adding headings to tables. Beginning to design simple results tables. Evaluating Beginning to identify steps in the method that need changing and suggest improvements Identifying which variables were difficult to control and suggesting how to better control them. Commenting on the degree of trust by reflecting on: • Results that do not fit a pattern (anomalies). • The quality of results (accurate measurements and maintaining control variables). Beginning to identify new questions that would further the enquiry	Grouping and classifying Grouping based on visible characteristics and measurable properties. Populating a pre-prepared branching and number key. Choosing appropriate questions for classification keys.	eginning to select from options which variables will be changed, measured and controlled. Beginning to suggest what observations to make and how long to make them for. Planning a simple method, verbally and in writing. Beginning to write a simple method in numbered steps. Selecting and beginning to decide what simple equipment might be used to aid observations and measurements. Predicting Making predictions about what they think will happen by: • Using scientific knowledge and/or personal experience to explain their prediction (because...) • Beginning to consider cause and effect when making predictions, where appropriate. • Predicting a trend by considering how the changing variable will affect the measured variable. (The smoother the surface, the longer the distance the car will travel) Observing (qualitative data) Using their senses to describe, in more detail and with simple scientific vocabulary, what they notice or what has changed. Measuring (quantitative data) Using standard units to measure and compare. Using measuring equipment with increasing accuracy. Reading scales with unmarked intervals between numbers. Researching Gathering specific information from a variety of sources. Recording (diagrams) Beginning to draw more scientific diagrams by: • Using some standard symbols. • Drawing in 2D to produce simple line diagrams. • Labelling with more scientific vocabulary. Recording (tables) Using a prepared table to record results including more detailed observations. Using tables with more than two columns. Identifying and adding headings to tables.	Planning Beginning to select from options which variables will be changed, measured and controlled. Beginning to suggest what observations to make and how long to make them for. Planning a simple method, verbally and in writing. Beginning to write a simple method in numbered steps. Selecting and beginning to decide what simple equipment might be used to aid observations and measurements. Recording (tables) Using a prepared table to record results including more detailed observations. Using tables with more than two columns. Identifying and adding headings to tables. Beginning to design simple results tables. Evaluating Beginning to identify steps in the method that need changing and suggest improvements Identifying which variables were difficult to control and suggesting how to better control them. Commenting on the degree of trust by reflecting on: • Results that do not fit a pattern (anomalies). • The quality of results (accurate measurements and maintaining control variables). Beginning to identify new questions that would further the enquiry	Graphing Representing data using bar charts. Drawing bars with greater accuracy. Reading the value of bars with greater accuracy. Analysing and drawing conclusions Writing a conclusion to summarise findings using simple scientific vocabulary. Beginning to suggest how one variable may have affected another. Beginning to quote results as evidence of relationships. Identifying data that does not fit a pattern (anomalous data). Recognising when results or observations do not match their predictions. Beginning to use identified patterns to predict new values or trends. Evaluating Beginning to identify steps in the method that need changing and suggest improvements Identifying which variables were difficult to control and suggesting how to better control them. Commenting on the degree of trust by reflecting on: • Results that do not fit a pattern (anomalies). • The quality of results (accurate measurements and maintaining control variables). Beginning to identify new questions that would further the enquiry

SCIENCE FIRECRE STS YEAR 4 & 5	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 Key Skills	Raising questions throughout the enquiry process. Identifying testable questions. Planning Suggesting which variables will be changed, measured and controlled. Making and explaining decisions about what observations to make and how long to make them for. Observing Using their senses to describe, in detail and with a broader range of scientific vocabulary, what they notice or what has changed. Measuring Using standard units to measure and compare with increasing precision (decimals). Researching Gathering answers to open-ended questions from a variety of sources. Recording Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy. Analysing and drawing conclusions Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Using identified patterns to predict new values or trends.	Planning Suggesting which variables will be changed, measured and controlled. Making and explaining decisions about what observations to make and how long to make them for. Writing a method that includes details about how to ensure control variables are kept the same. Writing a method that considers reliability by planning repeated readings. Suggesting the most appropriate equipment to make observations and measurements and justifying their choices. Measuring Using standard units to measure and compare with increasing precision (decimals). Reading a wider variety of scales with unmarked intervals between numbers. Recording Drawing scientific diagrams by: using a wider range of standard symbols; drawing with increasing accuracy; labelling with a broader range of scientific vocabulary; annotating diagrams to explain concepts and convey opinions. Using tables with columns that allow for repeat readings. Suggesting headings to tables, including units. Designing results tables with increasing independence with consideration of variables where applicable. Calculating the mean average. Graphing Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy. Analysing and drawing conclusions Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing individual, class and/or model data to the prediction and recognising when they do not match. Using identified patterns to predict new values or trends.	Grouping and classifying Grouping in a broader range of contexts. Organising the layout of number and branching keys. Formulating appropriate questions for classification keys.	Planning Suggesting which variables will be changed, measured and controlled. Writing a method, including details about ensuring control variables are kept the same. Writing a method that considers reliability by planning repeated readings. Suggesting the most appropriate equipment to make observations and measurements and justifying their choices. Predicting Using previous scientific knowledge and evidence to inform their predictions. Using scientific language to describe a potential outcome or explain why they think something will happen. Observing and measuring Using their senses to describe, in detail and with a broader range of scientific vocabulary, what they notice or what has changed. Using standard units to measure and compare with increasing precision (decimals). Reading a wider variety of scales with unmarked intervals between numbers. Recording Drawing scientific diagrams by using a wider range of standard symbols and drawing with increasing accuracy. Using tables with columns that allow for repeat readings. Suggesting headings to tables, including units. Designing results tables with increasing independence with consideration of variables where applicable. Calculating the mean average. Analysing and drawing conclusions Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing individual, class and/or model data to the prediction and recognising when they do not match. Using identified patterns to predict new values or trends. Evaluating Identifying steps in the method that need changing and suggesting	Posing questions Raising questions throughout the enquiry process. Selecting the most appropriate enquiry method to answer questions and give justification. Planning Suggesting which variables will be changed, measured and controlled. Observing Using senses to describe, in detail and with a broader range of scientific vocabulary, what is noticed or what has changed. Recording Using tables with columns that allow for repeat readings. Calculating the mean average. Grouping and classifying Grouping in a broader range of contexts. Analysing and drawing conclusions Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing individual, class and/or model data to the prediction and recognising when they do not match. Evaluating Identifying steps in the method that need changing and suggesting improvements. Identifying which variables were difficult to control and suggesting how to control them better. Commenting on the degree of trust by reflecting on accuracy (human error with equipment) and reliability (repeating results). Posing new questions in response to the data that would extend the enquiry.	Graphing Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy. Analysing and drawing conclusions Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Using identified patterns to predict new values or trends. Evaluating Commenting on the degree of trust by also reflecting on the sources of information (e.g. websites, books). Deciding what data to collect to further test direct relationships. This unit revisits the working scientifically skills covered in mixed-age Y5/6 (B), including: Posing questions. Planning. Predicting. Observing. Measuring. Recording. Analysing and drawing conclusions. Evaluating.

SCIENCE FIRECRE STS YEAR 4 & 5	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 4 & 5 Key Knowled ge	A life cycle shows the changes an animal or plant goes through until the reproduction of a new generation, when the cycle starts again. All living things must reproduce for the species to survive. Sexual reproduction requires two parents whereas asexual reproduction only requires one parent. There are different processes plants and animals use to reproduce (asexual and sexual reproduction). Science in action To know: There are a range of jobs and careers that use scientific knowledge and methods. There is current scientific research taking place with aims for achievement in the future. Scientific evidence is used to support or refute ideas or arguments.	Gravity is a non-contact force that pulls objects together. Air resistance and water resistance are both types of friction. Unsupported objects fall towards the Earth because of gravity. Friction, air resistance and water resistance act in the opposite direction of a moving object. When forces are unbalanced, the speed, shape or direction of an object changes. When forces are balanced, the speed, shape or direction of an object stays the same. Some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Rougher surfaces have more friction between them than smoother surfaces and how that may affect movement. The larger the surface area of an object, the greater the air or water resistance it creates. Science in action To know: About famous scientists throughout history.	To know that 'organism' is a term used to refer to an individual living thing. To know that micro-organisms are incredibly small and cannot usually be seen by the naked eye. To know the characteristics of the different groups of vertebrates and commonly found invertebrates. Science in action To know about famous scientists throughout history.	To know: A variety of components in a series circuit (including buzzer and motor). Conventions are used to draw circuit diagrams, including the recognised symbols for common components and using straight lines. The voltage of a circuit can be changed and this affects bulb brightness (or buzzer volume). Science in action To know: A range of jobs and careers that use scientific knowledge and methods. How scientific evidence is used to support or refute ideas or arguments.	To know: Living things have changed over time. Fossils provide information about living things that inhabited the Earth millions of years ago. Characteristics are passed from parents to their offspring but all offspring vary from their parents. Over time, variation in offspring can affect animals' chances of survival in particular environments. Animals and plants have adapted to suit their environment over many millions of years and this process can be called evolution. Science in action To know: Famous scientists throughout history. A range of jobs and careers use scientific knowledge and methods. The work of modern-day scientists. There are spiritual, moral, social and cultural links with science. Methods and equipment used by scientists throughout history and how these have led to modern methods. Scientific knowledge has changed over time, leading to the current understanding of science. Collaboration and peer reviewing are essential for effective scientific progress. Scientific evidence is used to support or refute ideas or arguments.	To know: How to describe the human life cycle, including the stages of growth and development (baby, toddler, child, teenager, adult, elderly). How to describe changes that occur during puberty (in boys and girls). Gestation periods vary across mammals. Science in action: To know: A range of jobs and careers that use scientific knowledge and methods. The methods and equipment used by scientists throughout history and how these have led to modern methods. Life cycles and reproduction To know: A life cycle shows the changes an animal or plant goes through until the reproduction of a new generation when the cycle starts again. Classifying big and small To know: The characteristics of the different groups of vertebrates and commonly found invertebrates.

SCIENCE FIRECRE STS YEAR 4 & 5	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 4 & 5 Key Vocabula ry	adolescence asexual reproduction characteristic data estimate fertilisation germination gestation gills incubation line graph line of best fit lungs mating metamorphosis offspring ovule pollen pollination reproduction sexual reproduction testable	(LKS2) air resistance anomaly balanced control variable data force (LKS2) gear gravity lever line graph line of best fit mean average pivot pulley relationship reliable surface area trustworthy (LKS2) unbalanced variable (LKS2) water resistance	classification key (LKS2) classify (LKS2) cold-blooded conifer exoskeleton fern life processes micro-organism moss organism warm-blooded	(LKS2) anomaly cell circuit diagram control variable current data evaluate evidence fair test hazard mean average model relationship resistance safety units variable (LKS2) voltage	(LKS2) adaptation anomaly characteristic competition control variable environment environmental evaluate evidence evolution extinct fossil (LKS2) gene habitat (KS1) inherit inheritance mean average model natural selection offspring parent (biological) population reliable reproduce scientific theory selective breeding survival of the fittest	anomaly evidence foetus gestation period hormones life cycle line graph period (menstruation) puberty rate (LKS2) relationship (LKS2) air resistance conclusion (LKS2) control variable evaluate evolution fair test friction (LKS2) inheritance life cycle (KS1) predict (KS1) offspring reproduction (LKS2) reliable root (KS1) stem (KS1) trustworthy (LKS2) variable (LKS2) water resistance

SCIENCE Owls YEAR 5 & 6	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Unit Outcomes	Pupils who are secure will be able to: Describe the life cycle of a plant, including the reproductive stage. Describe the life cycle of a mammal. Describe the life cycle of a bird and compare it with that of a mammal. Describe the life cycle of an amphibian. Describe the life cycle of an insect and compare it with that of an amphibian. Describe asexual reproduction in plants. When working scientifically, pupils who are secure will be able to: Observe and compare equivalent parts in different flowers. Research the life cycles of different mammals. Pose questions to compare the life cycles of different birds. Suggest how one temperature may affect egg hatching. Use data to describe a relationship and make predictions.	Describe gravity and its effects. Describe the relationship between mass and gravity. Describe air resistance and its effects. Describe friction and its effects. Describe water resistance and its effects. Describe the relationship between surface area and air and water resistance. Explain how to make an object aerodynamic or streamlined. Describe the effects of levers, pulleys and simple machines on movement. When working scientifically, pupils who are secure will be able to: Analyse predictions, data and anomalies to write a conclusion. Plan a fair test to investigate air resistance. Write a method. Evaluate a method and	Define the term 'organism' and name the seven life processes of all living things. Describe the work of Carl Linnaeus. Define the term 'vertebrate' and name the vertebrate groups. Describe the characteristics of fish, amphibians, reptiles, birds and mammals. Compare the characteristics of the vertebrate groups. Define the term 'invertebrate'. Describe the characteristics of worms, snails, spiders and insects. Compare the characteristics of the invertebrate groups. Name the plant groups. Describe the characteristics of flowering plants, ferns, mosses and conifers. Define the term 'micro-organism' and name some examples.	Describe the function of key electrical components and explain how the models used in the lesson represent these. Correctly predict if an electrical circuit will work or not, explaining why using their knowledge of complete loops, power sources and presence of components. Describe the relationship between the number of bulbs in a circuit, the bulb brightness and the amount of resistance. Explain that increasing the number of components increases the resistance, affecting the flow of current and energy transferred. Identify that batteries are a voltage source; they come in different voltages, affecting bulb brightness. Describe that voltage can be changed using different numbers of cells in a circuit and that more cells or a higher voltage causes brighter bulbs. Use the relationship between voltage and bulbs to predict what will happen with buzzers and motors. Build an electrical circuit with a switch to control its function, explain how the switch and the electrical circuit solve the problem and recall different examples of problems that can be solved using an	Define and identify variation in organisms and recall that it is caused by inherited and environmental factors. Recall that living things produce offspring of the same kind but are not normally identical to their parents. Describe patterns of inheritance from parent to offspring in a given example or family tree. Describe what an adaptation is; it cannot be chosen and is usually inherited. Describe key characteristics that would help an organism to survive and explain how an adaptation helps the organism to survive. Explain how variation may affect survival within a population and recall what natural selection means. Recall what evolution is, identify differences between a living thing and its ancestor and describe key steps in the evolution of a species. Recall different types of evidence that can be used to explain evolution and describe methods that make scientists' results or conclusions more trustworthy. When working scientifically, pupils who are secure will be able to: Sort variation as environmental, inherited or a mixture of both. Evaluate a method by recalling	Order the stages in growth and development from birth to old age. Describe physical and developmental changes from a baby through to old age. Describe changes that occur in males and females during puberty. Suggest ways to manage the changes that occur during puberty. Recall what is meant by a gestation period. Describe how gestation varies across animals and compare this to humans. When working scientifically, pupils who are secure will be able to: Use data to describe growth from baby to adult. Identify where on the graph the rate of growth changes. Use a line graph to make predictions about height. Choose a suitable title and axes labels for the scatter graph and plot data on the scatter graph.

SCIENCE Owls YEAR 5 & 6	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 & 6 Key Skills	Raising questions throughout the enquiry process. Identifying testable questions. Planning Suggesting which variables will be changed, measured and controlled. Making and explaining decisions about what observations to make and how long to make them for. Observing Using their senses to describe, in detail and with a broader range of scientific vocabulary, what they notice or what has changed. Measuring Using standard units to measure and compare with increasing precision (decimals). Researching Gathering answers to open-ended questions from a variety of sources. Recording Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy. Analysing and drawing conclusions Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Using identified patterns to predict new values or trends.	Planning Suggesting which variables will be changed, measured and controlled. Making and explaining decisions about what observations to make and how long to make them for. Writing a method that includes details about how to ensure control variables are kept the same. Writing a method that considers reliability by planning repeated readings. Suggesting the most appropriate equipment to make observations and measurements and justifying their choices. Measuring Using standard units to measure and compare with increasing precision (decimals). Reading a wider variety of scales with unmarked intervals between numbers. Recording Drawing scientific diagrams by: using a wider range of standard symbols; drawing with increasing accuracy; labelling with a broader range of scientific vocabulary; annotating diagrams to explain concepts and convey opinions. Using tables with columns that allow for repeat readings. Suggesting headings to tables, including units. Designing results tables with increasing independence with consideration of variables where applicable. Calculating the mean average. Graphing Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy. Analysing and drawing conclusions Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing	Grouping and classifying Grouping in a broader range of contexts. Organising the layout of number and branching keys. Formulating appropriate questions for classification keys.	Planning Suggesting which variables will be changed, measured and controlled. Writing a method, including details about ensuring control variables are kept the same. Writing a method that considers reliability by planning repeated readings. Suggesting the most appropriate equipment to make observations and measurements and justifying their choices. Predicting Using previous scientific knowledge and evidence to inform their predictions. Using scientific language to describe a potential outcome or explain why they think something will happen. Observing and measuring Using their senses to describe, in detail and with a broader range of scientific vocabulary, what they notice or what has changed. Using standard units to measure and compare with increasing precision (decimals). Reading a wider variety of scales with unmarked intervals between numbers. Recording Drawing scientific diagrams by using a wider range of standard symbols and drawing with increasing accuracy. Using tables with columns that allow for repeat readings. Suggesting headings to tables, including units. Designing results tables with increasing independence with consideration of variables where applicable. Calculating the mean average. Analysing and drawing conclusions Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing individual, class and/or model data to the prediction and recognising when they do not match. Using identified	Posing questions Raising questions throughout the enquiry process. Selecting the most appropriate enquiry method to answer questions and give justification. Planning Suggesting which variables will be changed, measured and controlled. Observing Using senses to describe, in detail and with a broader range of scientific vocabulary, what is noticed or what has changed. Recording Using tables with columns that allow for repeat readings. Calculating the mean average. Grouping and classifying Grouping in a broader range of contexts. Analysing and drawing conclusions Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing individual, class and/or model data to the prediction and recognising when they do not match. Evaluating Identifying steps in the method that need changing and suggesting improvements. Identifying which variables were difficult to control and suggesting how to control them better. Commenting on the degree of trust by reflecting on accuracy (human error with equipment) and reliability (repeating results). Posing new questions in response to the data that would extend the enquiry.	Graphing Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy. Analysing and drawing conclusions Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Using identified patterns to predict new values or trends. Evaluating Commenting on the degree of trust by also reflecting on the sources of information (e.g. websites, books). Deciding what data to collect to further test direct relationships. This unit revisits the working scientifically skills covered in mixed-age Y5/6 (B), including: Posing questions. Planning. Predicting. Observing. Measuring. Recording. Analysing and drawing conclusions. Evaluating.

SCIENCE Owls YEAR 5 & 6	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Yea 5 & 6 Key Knowled ge	A life cycle shows the changes an animal or plant goes through until the reproduction of a new generation, when the cycle starts again. All living things must reproduce for the species to survive. Sexual reproduction requires two parents whereas asexual reproduction only requires one parent. There are different processes plants and animals use to reproduce (asexual and sexual reproduction). Science in action To know: There are a range of jobs and careers that use scientific knowledge and methods. There is current scientific research taking place with aims for achievement in the future. Scientific evidence is used to support or refute ideas or arguments.	Gravity is a non-contact force that pulls objects together. Air resistance and water resistance are both types of friction. Unsupported objects fall towards the Earth because of gravity. Friction, air resistance and water resistance act in the opposite direction of a moving object. When forces are unbalanced, the speed, shape or direction of an object changes. When forces are balanced, the speed, shape or direction of an object stays the same. Some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Rougher surfaces have more friction between them than smoother surfaces and how that may affect movement. The larger the surface area of an object, the greater the air or water resistance it creates. Science in action To know:	To know that 'organism' is a term used to refer to an individual living thing. To know that micro-organisms are incredibly small and cannot usually be seen by the naked eye. To know the characteristics of the different groups of vertebrates and commonly found invertebrates. Science in action To know about famous scientists throughout history.	To know: A variety of components in a series circuit (including buzzer and motor). Conventions are used to draw circuit diagrams, including the recognised symbols for common components and using straight lines. The voltage of a circuit can be changed and this affects bulb brightness (or buzzer volume). Science in action To know: A range of jobs and careers that use scientific knowledge and methods. How scientific evidence is used to support or refute ideas or arguments.	To know: Living things have changed over time. Fossils provide information about living things that inhabited the Earth millions of years ago. Characteristics are passed from parents to their offspring but all offspring vary from their parents. Over time, variation in offspring can affect animals' chances of survival in particular environments. Animals and plants have adapted to suit their environment over many millions of years and this process can be called evolution. Science in action To know: Famous scientists throughout history. A range of jobs and careers use scientific knowledge and methods. The work of modern-day scientists. There are spiritual, moral, social and cultural links with science. Methods and equipment used by scientists throughout history.	To know: How to describe the human life cycle, including the stages of growth and development (baby, toddler, child, teenager, adult, elderly). How to describe changes that occur during puberty (in boys and girls). Gestation periods vary across mammals. Science in action: To know: A range of jobs and careers that use scientific knowledge and methods. The methods and equipment used by scientists throughout history and how these have led to modern methods. Life cycles and reproduction To know: A life cycle shows the changes an animal or plant goes through until the reproduction of a new generation when the cycle starts again. Classifying big and small To know: The characteristics of the different groups of vertebrates and commonly found invertebrates.

SCIENCE Owls YEAR 5 & 6	AUTUMN	AUTUMN 2	SPRING	SPRING 2	SUMMER	SUMMER 2
Year 5 & 6 Key Vocabulary	adolescence asexual reproduction characteristic data estimate fertilisation germination gestation gills incubation line graph line of best fit lungs mating metamorphosis offspring ovule pollen pollination reproduction sexual reproduction testable	(LKS2) air resistance anomaly balanced control variable data force (LKS2) gear gravity lever line graph line of best fit mean average pivot pulley relationship reliable surface area trustworthy (LKS2) unbalanced variable (LKS2) water resistance	classification key (LKS2) classify (LKS2) cold-blooded conifer exoskeleton fern life processes micro-organism moss organism warm-blooded	(LKS2) anomaly cell circuit diagram control variable current data evaluate evidence fair test hazard mean average model relationship resistance safety units variable (LKS2) voltage	(LKS2) adaptation anomaly characteristic competition control variable environment environmental evaluate evidence evolution extinct fossil (LKS2) gene habitat (KS1) inherit inheritance mean average model natural selection offspring parent (biological) population reliable reproduce scientific theory selective breeding survival of the fittest	anomaly evidence foetus gestation period hormones life cycle line graph period (menstruation) puberty rate (LKS2) relationship (LKS2) air resistance conclusion (LKS2) control variable evaluate evolution fair test friction (LKS2) inheritance life cycle (KS1) predict (KS1) offspring reproduction (LKS2) reliable root (KS1) stem (KS1) trustworthy (LKS2) variable (LKS2) water resistance