SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))

Terms	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Everyday Materials (S)** 1. Identify and name a range of materials (wood, plastic , glass, metal, water and rock) 2. Classifying and grouping according to a range of physical properties 3. Compare and group together a variety of everyday materials based on physical properties **Can they…** Distinguish between object and material made from; Describe materials using senses, using scientific vocabulary Explain why material might be used Explain how solid shapes can change **Challenge:** Can they… Describe similarities and differences between materials? Explain what happens to certain materials when heated? Explain what happens to materials when cooled?	**Seasonal Changes (S)** 1. Features of day and night including temperature 2.Weather, associated with seasons **Can they…** Observe changes across the four seasons? Observe and describe weather associated with the seasons and how day length varies? Observe features in the environment and explain that these are related to specific seasons? Talk about weather variation in different parts of the world? **Challenge:** Can they… Explain why does it get darker earlier in winter? Or How do the seasons impact on what we do?	**Sound (S)** 1. Identify how sounds are made – something vibrating 2. Describe range of sounds and explain how they are made 3. Explain how to change a sound (loud/soft) 4. Recognise that vibrations from sound travels through a medium to the ear. . **Can they…** Identify the five senses: see, touch, smell, hear and taste? Use simple equipment to help recognise each sense? Explain what they have found out using scientific vocabulary? **Challenge:** Can they… Classify how sounds of different instruments are produced- blowing, plucking, bowing, hammering (piano), etc	**Animals (including Humans) (S)** 1. Identification and labelling a variety of common animals (fish, amphibians, reptiles, birds and mammals) 2. Know and classify carnivores, herbivores and omnivores 3. How to care for pets 4. Name parts of the human body **Can they…** Point out differences between different animals? Sort photographs of living and non-living things? Identify and name a variety of common animals? Can they draw & label basic parts of the human body? **Challenge**: Can they… Classify animals according to a number of given criteria? Name some parts of the human body that cannot be seen? Point out the differences between living and non-living things?	**Plants(S)** 1. Identify and name a variety of common, wild and green plants, including deciduous and evergreen trees. 2. Identify and describe the basic structure of a variety of common flowering plants, including trees. Can they… Identify and label plants, including trees Describe the parts of a plant - roots, stem, flower, etc. Name the trunk, branches and root of a tree? **Challenge:** Can they… Explain the function of roots, trunk and flowers? Name the petals, stem, leaf, bulb, flower, seed, stem and root of a plant? Sort some plants by those that can be eaten and those that cannot?	**Investigative skills: (NS)** **The Bad tempered Ladybird- mini beasts** 1 .Use of scientific equipment for observations using magnifying glasses,; comparing and contrasting different mini beasts; describing, identifying and grouping; drawing, recording using measurements, graphs, charts or tables. **Can they…** Find out by watching and give simple reason for answers? Explain what they have found out using scientific vocabulary? Record findings using standard units? Put information in a chart or table? Use ICT to show their working? Record data and results **Challenge:** Can they… Identify different features of the different mini-beasts? Can they identify similarities? Learn how to attract mini-beasts to an outdoor area e.g. technology garden, home garden, etc. Understanding the importance of mini-beasts in the environment and why? Use knowledge of seasonal changes affecting the min-beast?

SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2	**Plants: (S)** 1. What plants and seeds need to grow 2. Growing from seeds and bulbs 3. Observe and describe how seeds and bulbs grow into mature plants 4. Find out and describe how plants need water, light and suitable temperature to grow and stay healthy **Can they…** Carry out a Fair Test? Explain why it might not be fair to compare two things? Say whether things happened as they expected? Suggest how to find things out? Use prompts to find things out? Use some scientific words to describe what they have seen and measured? Describe life processes common to plants and animals, including human beings? Describe how seeds and bulbs grow into plants? Describe what plants needs to grow and stay healthy? Compare how plants grow in different conditions by making measurements? **Challenge:** Can they… Use information from books and online information to find things out? Explain that plants grow and reproduce in different ways from animals?	**Animals, including humans (S)** 1. Exercise and healthy living 2. What animals and humans need to survive 3. Animals have offspring, which grow to be adults **Can they…** Notice that animals, including humans, have offspring, which grow into adults. Find out about and describe the basic needs of animals, including humans for survival (water, food and air) Describe why exercise, balanced diet and hygiene are important for humans? Name the food groups and basic functions of each group? Describe the importance for humans of exercise, eating the right amount of different types of food, and hygiene. Identify animals and plants by a specific criterion, e.g. lay eggs or not; have feathers or not? Describe the cycle of some living things? E.g. egg, chick, chicken **Challenge:** Can they… Suggest more than one way of grouping animals and plants and explain their reasons? Use text, diagrams, pictures, charts, tables to record their observations? Can they design a balanced diet for an athlete?	**Everyday Materials (S)** 1. Identify and compare the suitability of everyday materials 2. Find out how the shapes of solid objects can change – squashing, bending, twisting & stretching. **Can they…** Describe the simple properties of a variety of everyday materials? Compare and group a variety of materials based on physical properties, using words like, transparent, opaque, flexible, etc.? Explain how materials are changed by heating and cooling? Tell which materials cannot be changed back after heating, cooling, bending, stretching or twisting? Classify and use methods to record observations or investigations? **Challenge:** Can they… Say which materials are natural and which are man- made? Find out about inventors e.g. Dunlop, Mackintosh, McAdam, etc.	**Forces and Movement (NS)** 1. Describe how things move at different speeds, speed up and slow down, using simple comparisons, comparative vocabulary and superlative vocabulary. 2. Compare how things move on different surfaces. 3. Make and record a prediction before testing. **Can they…** Plan a fair test and explain why it was fair. Explain the impact of friction on a moving object? Carry out an investigation, record and explain results? Explain what happens when an object is pushed or pulled? **Challenge:** Can they… Use scientific language, drawings labelled diagrams, bar charts or tables to record speed and direction of moving objects?	**Sound (NS)** 1. Observe and name a variety of sources of sound and hear with our ears. 2. Recognise that sounds get fainter as the distance from the sound source increases. **Can they…** Compare different sound sources and look for patterns? Carry out tests to find the best places to locate fire alarms at home and in school? Perform simple tests to measure distances at which sound can and cannot be heard? e.g. make simple telephone Explain the function of the ear for hearing? **Challenge:** Can they… Describe how many ways do we depend on sound in everyday life? Design and make a musical instrument with given specification?	**Living things, Habitats & Food Chains (S)** 1. Explore and compare differences between things that are living, dead and non-living. 2. Identify and name a variety of plants and animals in their habitats, including micro–habitats. 3. Describe how animals obtain their food from plants and other animals. 4. Using a food chain and identify and name different sources of food. **Can they…** Classify things according to whether they are living, dead or never alive. Record their findings using simple charts or tables? Create a food chain and explain what and examples of tertiary, primary and secondary consumers. **Challenge:** Can they… Understand difference between a food chain and a food web? Create a food web and identify the roles of each consumer?

SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))

Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Materials & Properties – Rocks (S) 1. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 2. Describe in simple terms how fossils are formed when things that have lived are trapped within rock 3. Recognise that soils are made from rocks and organic matter **Can they…** Describe and explain how different rocks can be useful to us? Describe and explain the differences between sedimentary and igneous rocks, considering the way they are formed and classify them into groups? Begin to relate the properties of rocks with their uses? Explain why they need to collect information to answer a question? **Challenge: Can they…** Record and present what they have found using scientific language, drawings, labelled diagrams and charts?	**Magnets – (S)** 1. Notice that some forces need contact between two objects, but magnetic forces can act at a distance 2. Observe how magnets attract or repel each other and attract some materials and not others 3. 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 4. Describe magnets as having two poles (N & S) 5. Predict whether two magnets will attract or repel each other, depending on which poles are facing. **Can they…** Classify which materials are attracted to magnets and which are not? Identify some magnetic materials? Investigate the strengths of different magnets and find fair ways to compare them? **Challenge: Can they…** Make and record a prediction before testing? Use scientific language, explain findings and suggest test to improve?	Forces – (S) 1.Understand what is friction and how does it affect moving objects 2. Compare how things move on different surfaces 3. Understand that force is a push or a pull of an object that causes the object to speed up, slow down or stay in one place. **Can they…** Explain how surface type influences the amount of friction there is? Discuss relationship between the size or weight of and object and the amount of friction that is present? Explain how friction can be both a positive and negative aspect in our everyday lives? Make and record a prediction before testing? Plan a fair test and explain why it was fair? Set up simple fair test to make comparisons? Make accurate measurements using standard units? Record their observations in different ways? Describe what they have found using scientific language? **Challenge: Can they…** Explain their findings in different ways (display, presentation, writing)? Use findings to draw a simple conclusion and suggest further improvements?	**Animals - Including Humans (S)** 1. Identify and group animals with and without skeletons and observing and comparing their movement 2. Explore ideas about what would happen if humans did not have skeletons 3. 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 4. Identify parts that humans and some other animals have skeletons and muscles for support, protection and movement **Can they…** Explain the importance of a nutritious balanced diet? Describe how nutrients, water and oxygen are transported within animals, humans and plants? Describe and explain the skeletal system of a human? Name all the parts of a human anatomy and their functions? **Challenge: Can they…** Record and present what they have found in different ways (display, presentation, writing)?	**Plants (S)** 1. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk. Leaves and flowers 2. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how the vary from plant to plant 3. Investigate the way in which water is transported within plants 4. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Can they…** Compare the effect of different factors on plant growth? Discover how seeds are formed by observing the different stages of plant life cycles over time? Look for patterns in the structure of fruits that relate to how the seeds are dispersed? Identify the functions of different parts of plants? Explain how the needs and functions of plant parts vary from plant to plant e.g. insect and wind pollinated plants? **Challenge: Can they…** Classify a range of common plants according to many criteria (environment found, size, climate required, etc.	**Light and Shadows (S)** 1. Recognise that they need light in order to see things and that darkness is the absence of light 2. Notice that light is reflected from surfaces 3. Recognise that light from the sun can be dangerous and that there are ways to protect themselves 3. Recognise that shadows are formed when the light from a light source is blocked by a solid object 4. explain the relationship between the Sun and Moon (in terms of lightning up the moon)? **Can they…** Explain why lights need to be bright or dimmer Explain the difference between transparent, translucent and opaque? Explain why lights need to be bright or dimmer according to need? Make a bulb go on and off? Say what happens to the electricity when more batteries are added in a fair test? Explain why their shadow changes when the light sources is moved closer or further from the object? **Challenge: Can they…** Measure the lengths of their shadows and to present their findings in graphical format.

SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	**States of Matter (S) – Gas, Liquid & Solids** 1. Compare and group materials together, according to whether they are solids, liquids or gas 2. Observe that some materials change state when they are heated or cooled, and measure or research the temperatures at which this happens in degrees Celsius 3. Explore the effect of temperature on substances and their change of state **Can they…** Compare and group materials based on their states of matter, i.e. liquid, solid or gas? Explain what happens to materials when they are heated or cooled? Measure temperature at which different materials change state? Set up simple fair tests to make comparison? Plan a fair tests and isolate variables and explain why it was fair and explain which variables have been isolated? Suggest improvements and predictions? Decide which information needs to be collected and best way to collect it? Use findings to draw a simple conclusion? **Challenge: Can they…** Plan and carry out an investigation by controlling variables fairly and accurately? Group and classify materials according to impact of temperature?	**States of Matter (S) – Water cycle** 1.Identify the part of played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 2. Work scientifically to investigate and explain changes to the state of water and linking it to the water cycle. **Can they…** Understand the four main key stages in the water cycle: evaporation, condensation, precipitation & run off? Understand that all water moves continuously and is recycled over and over again? Make a model water cycle to observe the process in action? Explain and write about the water cycle? **Challenge: Can they…** Explain what happens over time to materials such as puddles on the playground or washing hanging on a line? Set up a simple experiment, predict and method of recording? Relate temperature to change of state of materials, linking to the water cycle?	**Habitats (S)- Sayers Croft** 1. Recognise that living things can be grouped in a variety of ways 2. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment 3. Recognise that environments can change and that this can sometimes pose dangers to living things. **Can they…** Explore variety of living things and use guides or keys to identify/ classify them? Raise and answer questions based on their observations of animals and what they have researched and found? Compare the classification of common plants and animals to living things found in other places? (under sea, prehistoric)? Name and group a variety of living things based on feeding patterns? (producer, consumer, predator, prey, herbivore, carnivore, omnivore)? **Challenge: Can they…** Record more complex data and results using scientific diagrams, classification keys, tables, charts, graphs and models? Report findings from investigations through written explanations and conclusions? Use graph or diagram to answer scientific questions?	**Animals, including Humans (S)** 1.Describe the simple functions of the basic parts of the digestive system in humans 2. Identify the different types of teeth in humans and their simple functions 3. Construct and interpret a variety of food chains, identifying procedures, predators and prey **Can they…** Identify and name the basic parts of the human digestive system? Describe the function of the organs of the human digestive system? Identify the simple function of different types of human teeth? Compare the teeth of herbivores and carnivores? Explain what a simple food chain shows? Record and present what they have found using a variety of ways, drawings and scientific language? **Challenge: Can they…** Compare the teeth of carnivores and herbivores, and suggest reasons for differences? Find out what damages teeth and how to look after them? Make a presentation to show what happens in your body, the digestive system and keeping teeth healthy?	**Electricity (S)** 1. Identify common appliances 2. Construct a simple series of electrical circuit, identifying and naming its basic parts: cells, wires, bulbs, switches and buzzers 3. Identify whether or not a lamp will light a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery 4. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit 5. Recognise some common conductors and insulators, and associate metals with being good conductors **Can they…** Explain how electricity is useful to us? Construct a simple circuit? Explain what a conductor is and test materials for conductivity? Explain closed and open circuits? Construct a circuit with a switch? Recognise some common conductors and insulators? Plan, predict and carry out an experiment controlling variables fairly and accurately? Explain how a bulb might get lighter? Work out if all metals be used to connect a circuit gap?	**Sound (S)** 1. Identify how sounds are made, associating some of them with something vibrating 2. Recognise that vibrations from sounds travel through a medium to the ear 3. Find patterns between the pitch of a sound and features of the object that produced it 4. Find patterns between the volume of a sound and the strength of the vibrations that produced it 5. Recognise that sounds get fainter as the distance from the sound source increases. **Can they…** Describe a range of sounds and explain how they are made? Compare sources of sound, explain how the sounds differ and how to change a sound: (louder/softer)? Describe and explain how a sound travels from a source to our ears? Explain what happens to sound as it travels away from its source? Explain how pitch and volume can be changed in a variety of ways? Investigate how different materials can affect the pitch and volume of sounds? Predict, plan, measure and record an investigation? Explore which materials give best insulation for sound? (**Challenge**)

SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))

Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Living Things & their Habitats 1. Describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird. 2. Describe the life process of reproduction in some plants and animals. 3. Talk with knowledge about birth, reproduction and death of familiar animals or plants? **Can they…** Describe and compare the life cycle of a range of animals, including humans, amphibians, insects and birds? Describe the life cycles of common plants? Talk about birth, reproduction and death of animals and plants with understanding? Report findings from investigations through written explanations and conclusions? Use a graph to answer scientific questions? Observe and compare the life cycles of plants and animals in their local environment with plants and animals around the world e.g. desert areas, rainforests, oceans, prehistoric times)? Ask pertinent questions and suggest reasons for similarities and differences? Explain (in simple terms) a scientific idea and what evidence supports it? **Challenge: Can they…** Explore the work of well know naturalists and animal behaviourists? E.g. David Attenborough and Jane Goodall.	**Animals, including Humans (S)** 1. Describe the changes as humans develop to old age **Can they…** Compare data about gestation periods of humans and other animals? Create a timeline to indicate stages of growth in humans? Explain why different animals will have a different life expectancy? Present findings through writing, display and presentation? Take measurements using a range of scientific equipment with increasing accuracy? Record more complex data and results using scientific diagrams, charts, tables, classification keys, graphs and models? **Challenge: Can they…** Create a timeline to indicate stages of growth of a baby, themselves, a teenager, young adults, their parents or grandparents and create a chart to find out about what they can and cannot do over time? Link what they have found out to other science? Suggest how to improve their work and say why they think this?	**Properties & changes to materials (S)** 1. 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. 2. Understand that materials are suitable for making a particular object because of their properties. 3. Understand that force is measured in Newtons and used for testing weight, strength and flexibility of materials 4. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. **Can they…** Work our which materials are most effective for keeping warm or keeping cold? Carry out experiments to compare materials suitable to make a switch in a circuit? Report and present findings from enquiries through written explanations and conclusions? **Challenge: Can they…** Explain the work of chemists who created new materials e.g. Spencer Silver (glue on sticky notes) or Ruth Benerito (wrinkle free cotton)?	**Properties & changes to materials (S)** 1. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from as solution. 2. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including filtering, sieving and evaporation. 3. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. 3. Demonstrate that dissolving, mixing and changes of state are reversible changes. 4. Explain that some changes results in the formation of new materials, and that this kind of change is not usually reversible, including burning and chemical reaction. **Can they…** Explain how materials dissolve in liquid to form solution? Use knowledge of liquid, solid or gas to describe methods of separating mixtures- filtering, sieving, evaporating? Explore changes that are reversible and irreversible e.g. burning, rusting, reactions such as vinegar with bicarbonate of soda?	**Earth and Space (S)** 1. Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System. 2. Describe the movement of the Moon relative to the Earth 3. Describe the Sun, Earth and Moon as approximately spherical bodies. 4. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. **Can they…** Identify and explain the movement of the Earth relative to the Sun? Explain how seasons and the associated weather are created? Identify and explain the movement of the Moon relative to the Earth? Explain the size, shape and position of the Earth, Sun and Moon? Explain how night and day are created and use diagrams to show this? Explain how planets are linked to stars? **Challenge: Can they…** Create simple models of the solar system. Construct simple shadow clocks and sundials, calibrated to show midday, start and end of school day. Begin to understand how older civilizations used the Sun to create astronomical clocks and Stonehenge? Explore the work of some scientists? Ptolemy, Copenicus	**Force (S)** 1.Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 2. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanism, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Can they…** Explain what gravity is and its impact on our lives? Explain why a wheeled object that is initially pushed will slow down and stop? Explain the impact of friction and drag force on moving objects? Explain how force and motion can be transferred through gears, pulleys, levers and spring? Make predictions, test an idea and record using scientific language? **Challenge: Can they…** Design parachutes and explain gravitational force? Work out how water can cause resistance to floating objects?

SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))

Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Living things and their Habitats 1. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organism, plants and animals. 2. Give reasons for classifying plants and animals on specific characteristics. **Can they…** Devise classification systems and keys to identify some animals and plants in the immediate environment. Describe and compare the life cycles of a range of animals, including humans, amphibians, insects and birds? Discover the special attributes that some animals and plants have to help them survive? Explain why might some animals and plants be endangered and carry out a research of one animal or plant? Explain what are micro-organisms and how they would be classified? Record more complex data and results using scientific diagrams, classification keys, labels, graphs and tables? Use information from different sources to answer questions and record.	**Animals, including Humans** 1. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. 2. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. 3. Describe the ways in which nutrients and water are transported within animals, including humans. **Can they…** Identify and explain the function of the organs of the human circulatory system? (heart, blood vessels, blood)? Name the major organs in the human body? Locate the major human organs and their functions? Compare the organ systems of humans to other animals? Make a diagram of the human body and explain how different parts work and depend on one another? **Challenge: Can they…** Explore the work of medical pioneers, e.g. William Harvey and Galen, and recognise how much we have learnt about our bodies? Explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyles and health. Report their research and findings through written, explanations, conclusions and presentations?	**Evolution & Inheritance** 1. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago 2. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. 3. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. **Can they…** Recognise that living things have evolved overtime? Recognise that offspring are not identical to each other and their parents? Give reasons why offspring are not identical to each other or to their parents? Explain the process of evolution and describe the evidence for this? Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution? Talk about the work of Charles Darwin, Mary Anning and Alfred Wallace? **Challenge: Can they…** Explain how some living things adapt to survive in extreme conditions? Analyse the advantages and disadvantages of specific adaptations, e.g. being on two rather than four feet? Understand what is DNA?	**Electricity** 1. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. 2. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzes and the on/off position of switches. 3. Use recognised symbols when representing a simple circuit in a diagram. **Can they…** Identify and name the basic parts of a simple electric series circuit? (cells, wires, bulbs, switches, buzzers, motors)? Explain how to make and impact of changes in a circuit? Explain the effect of changing the voltage of a battery? Explain the danger of short circuits? Explain what a fuse is? **Challenge: Can they…** Systematically identifying the effect of changing one component at a time in a circuit. Design and make a set of traffic lights, a burglar alarm or some other useful circuit? Explore different ways to test an idea and choose the best way, and give reasons? Create and present their electrical products.	**Light & Shadow (S)** 1. Recognise that light travels in straight lines and travels faster than sound. 2. 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 3. 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 4. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. **Can they…** Explain how light travels? Explain how the human eye sees objects? Explain how different colours of light can be created? Use and explain how simple optical instruments work? (periscope, telescope, binoculars, mirror, magnifying glass, Newton's first reflecting telescope) Explain changes linked to light (and sound)? Make a prediction which links with other scientific knowledge? Identify factors when planning a fair test, record and present findings? Use ray model to explain the size of shadows? **Challenge: Can they…** Design and make a periscope and using the idea that light travels in straight lines to explain how it works.	**Light, Shadow & the Eye (NS)** Understand that: 1. Brain and eyes work together to give us our sense of sight. 2. Identify and describe the six parts of the human eye: cornea, pupil, iris, lens, retina and optic nerve. 3. Discuss how parts of the eye work together to provide vision. 4. Explore the relationship between light sources, objects and shadows. **Can they…** Identify all the six parts of the eye and their functions. Use information from different sources to answer questions, plan an investigation? Explain how the brain and eye works together? Draw diagram that outlines the eye? Explain what happens to the size of a shadow when you move the object? Which materials are the best for reflecting light? **Challenge: Can they…** Explore a range of phenomena, including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters? Present findings through writing, display and presentation?

SCIENCE CURRICULUM MAP: Working scientifically must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study (statutory (S) and non-statutory (NS))