

Blue Gate Fields Junior School Science Curriculum Overview 2022-2023



As well as covering all National Curriculum objectives for your year group, ensure that **all** lessons (as appropriate) encompass ways in which pupils are **working scientifically**.

Working scientifically skills:

- Ask questions and recognise that they can be answered in different ways
- Make observations and take measurements
- Use practical enquiries to answer questions
- Record and present evidence
- Answer questions and conclude
- Evaluate and raise further questions and predictions
- Communicate findings

WORKING SCIENTIFICALLY SKILLS	
	<ul style="list-style-type: none"> • Ask questions • Recognise they can be answered in different ways
	<ul style="list-style-type: none"> • Make observations • Take measurements
	<ul style="list-style-type: none"> • Engage in practical enquiry to answer questions
	<ul style="list-style-type: none"> • Record and present data
	<ul style="list-style-type: none"> • Answer questions • Conclude
	<ul style="list-style-type: none"> • Evaluate • Raise further questions
	<ul style="list-style-type: none"> • Communicate findings

Means of scientific enquiry to answer questions:

- Observing over time
- Identifying and classifying
- Fair testing
- Pattern seeking
- Researching

Observing over time

Looking for changes over time spans of minutes or hours to several weeks or months. Making predictions about what might happen next.

Identifying and classifying

Sorting objects and materials, learning the names of different things, identifying similarities and differences and learning how things are grouped.

Pattern seeking

Identifying patterns through observation and measuring where variables can't be controlled for practical or ethical reasons.

Research

Finding answers to enquiries using secondary sources, such as books or the Internet. Evaluating information from different sources.

Fair test

Fair tests involve changing one variable and observing the effect this has on another variable, whilst keeping everything else the same.

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Learning intentions should include the working scientifically skill in **yellow/orange** (see right).

Lessons should focus around a **key question/s** and this should be included on the learning intention (see right). These key questions will focus the learning in the lesson to ensure that only the main learning is being taught. The key question/s should be returned to throughout the lesson and either answered through a diagram, scientific drawing, or a one-sentence answer (as appropriate). Photo evidence may be used to supplement diagram or sentence if appropriate.

<i>I am learning to record scientifically and explain what a simple circuit is.</i>	
LANGUAGE	MEMORY LINKS
<ul style="list-style-type: none">• wire• bulb• cell• battery• switch• circuit• simple circuit• complete circuit• components• symbol	<ul style="list-style-type: none">• In year 4 you learned how to make a bulb light using pieces of electrical equipment.• You learned the names of the different pieces of electrical equipment.• You learned scientific descriptions such as 'simple circuit' and 'complete circuit'.
<i>What is a simple circuit? How can we draw this scientifically?</i>	

In order to free up children's working memories, **dual-coding** should be practised. Information on lesson slides should be stripped back to **only** include diagrams, photographs, key vocabulary and key questions that support the learning.

All Science topics will have a **title page** showing a learning journey of the key questions covered in the unit.

Alongside this curriculum overview – which states all of the National Curriculum objectives and suggested opportunities of working scientifically – PLAN knowledge and working scientifically matrices should be used to aid planning. These can be found in the subject's Planning folder.

Rocks and Fossils
Year 3 – Autumn 1

1. How are rocks similar to each other?
How can we classify them?
2. What is a fair test?
Are all rocks hard? Are all rocks permeable?
3. How are fossils formed?
4. How are soils made?

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Books to support Science



Book and author	Notes	Science unit:	Year group
YEAR 3 ROCKS AND FOSSILS			
The Street Beneath My Feet By Charlotte Guillot	<ul style="list-style-type: none"> This double-sided foldout book takes you on a fascinating journey deep underground. One side shows the ground beneath the city, while the reverse side shows the ground beneath the countryside. The underground scenes include tunnels and pipes, creatures burrows, layers of rock and the planes's molten core, and run seamlessly into the next. Mixes urban and rural settings and covers subjects such as geology, archaeology and natural history. 	<ul style="list-style-type: none"> Rocks and Fossils 	• 3
A Rock is Lovely By Diana Hales, Adam and Sylvia Long	<ul style="list-style-type: none"> An introduction into the fascinating world of rocks. From dazzling blue lapis Lazuli to volcanic Snowflake Obsidian, an incredible variety of rocks are showcased in all their splendour. Practical in voice and elegant in design, it introduces an array of facts. 	<ul style="list-style-type: none"> Rocks and Fossils 	• 3

Book list

In some cases, books have been linked to units as hooks in to learning, to give purpose to investigations or to enrich and support the learning. A growing list of books linking to all topics in the Science curriculum can be found on the T:Drive: 02-Curriculum Subjects – Science – 2 Curriculum overview and planning – Science books.

Scientist list

A growing, diverse list of scientists relating to all topics of our Science curriculum can be found on the T:Drive: 02-Curriculum Subjects – Science – 2 Curriculum overview and planning – Scientists.

Mirrors and Windows

SCIENTISTS

Science	Geography	Computing	History
SCIENTISTS			
Science	About	Links to Science curriculum (for cross curricular link)	Year group
Mao Jinxion (1956 – present)	<ul style="list-style-type: none"> American engineer, physician and former NASA astronaut. First African American woman to travel into space when she went into orbit aboard the Space Shuttle Endeavour on 12 September 1992. 	<ul style="list-style-type: none"> Earth and space 	• 5
Mergia Mavalvala (1968 – present)	<ul style="list-style-type: none"> Pakistani-American astrophysicist. Known for her role in the first observation of gravitational waves, the disturbances in the curvature of space-time caused by accelerating objects such as neutron stars or black holes. Mavalvala's parents raised her without stereotypical gender roles and encouraged her to pursue higher education overseas. 	<ul style="list-style-type: none"> Earth and space 	• 5
Tiera Fletcher (Present)	<ul style="list-style-type: none"> American engineer, who works for Boeing. Graduated from MIT in 2017. One of the designers and structural analysts building the Space Launch 	<ul style="list-style-type: none"> Earth and space 	• 5

Trip suggestions

Location	Workshop name	Link to workshop	Curriculum link	Year group
Centre of the City Newark St London E1 2AT	<ul style="list-style-type: none"> Muscling In 	https://www.centerofthecity.org/what-to-see/when-to-visit-and-how-to-visit/ https://www.centerofthecity.org/whats-on/when-to-visit-and-how-to-visit/	<ul style="list-style-type: none"> Animals, including humans 	• 3
Natural History Museums Cromwell Rd London SW7 5BD	<ul style="list-style-type: none"> Emergency Earthquakes and Volcanoes Show 	https://www.nhm.ac.uk/whats-on/emergency-earthquakes-volcanoes.html	<ul style="list-style-type: none"> Earthquakes and Volcanoes (Geography) 	• 3
Natural History Museums Cromwell Rd London SW7 5BD	<ul style="list-style-type: none"> Mary Anning Workshop 	https://www.nhm.ac.uk/whats-on/mary-anning-gallery.html	<ul style="list-style-type: none"> Rocks and Fossils 	• 3
Natural History Museums Cromwell Rd London SW7 5BD	<ul style="list-style-type: none"> Dive SCIENTIES 	https://www.nhm.ac.uk/whats-on/dive-science.html	<ul style="list-style-type: none"> Rocks and Fossils 	• 3
Spines Centre Camdenary Park Sudbury Grove London E3 4PX	<ul style="list-style-type: none"> Soil and Soilmakers 	http://www.spinescentre.org/soil-and-soilmakers	<ul style="list-style-type: none"> Rocks and Fossils 	• 3

Trip suggestions

A list of trip suggestions can be found on the T:Drive: 02-Curriculum Subjects – Science – 2 Curriculum overview and planning – Trips.



Year 3

Autumn 1

Rocks

National Curriculum:

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock
- Recognise that soils are made from rocks and organic matter

Working scientifically opportunities:

- Classify rocks in range of different ways
- Devise tests to explore properties of rocks and use data to rank rocks
- Devise tests to investigate hardness and permeability of different rocks
- Observe how rocks change over time
- Research how fossils are formed and work of Mary Anning
- Identify plant / animal matter in soil samples and classify
- Devise a test to explore water retention of soils

Book suggestions:

- Stone Girl Bone Girl
- Monster Stones: The Story of a Dinosaur Fossil

Autumn 2

Forces and Magnets

National Curriculum:

- Compare how things move on different surfaces
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance
- Observe how magnets attract or repel each other and attract some materials and not others
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- Describe magnets as having two poles
- Predict whether two magnets will attract or repel each other, depending on which poles are facing

Working scientifically opportunities:

- Explore how objects move on different surfaces
- Explore what materials are attracted to a magnet
- Classify materials according to whether they are magnetic
- Explore the way in which magnets behave in relation to each other
- Explore how magnets work at a distance
- Devise an investigation to test strength of magnets

Book suggestions:

- The Iron Man

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<ul style="list-style-type: none"> • Street Beneath My Feet • Pebble in My Pocket 	
<h2>Spring 1</h2>	<h2>Spring 2</h2>
<p style="text-align: center;">Animals including humans Skeletons and muscles</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Construct human skeleton using split pins • Explore what would happen if humans didn't have skeleton • Compare, contrast and classify skeletons of different animals • Research parts and functions of skeletons • Investigate pattern-seeking questions such as can people with longer legs run faster, etc? <p>Book suggestions:</p> <ul style="list-style-type: none"> • See Science book list document. 	<p style="text-align: center;">Animals including humans Healthy eating</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • 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 <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Observe snails over time and what they eat (using lettuce leaves, leaves, chocolate, crisps) • Classify food in range of ways • Research food groups • Plan a daily diet <p>Book suggestions:</p> <ul style="list-style-type: none"> • See Science book list document.
<h2>Summer 1</h2>	<h2>Summer 2</h2>
<p style="text-align: center;">Light</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • Recognise that we need light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces 	<p style="text-align: center;">Plants</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers

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- Recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- Recognise that shadows are formed when the light from a light source is blocked by an opaque object
- Find patterns in the way that the size of shadows change

Working scientifically opportunities:

- Explore how objects are more or less visible in different levels of lighting
- Explore how objects with different surfaces are more or less visible
- Explore how size of shadows varies as the distance between a light source, object or surface is changed
- Create shadow puppets
- Research the sun and its dangers

Book suggestions:

- Black Rabbit
- Can't You Sleep, Little Bear?
- The Owl Who Was Afraid of the Dark
- The Firework Maker's Daughter
- The Dark by Lemony Snicket
- Oscar and the Moth: A Book about Light and Dark
- Orion and the Dark

- Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
- Investigate the way in which water is transported within plants
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Working scientifically opportunities:

- Plan an investigation to observe what happens to plants when they are put in different conditions
- Investigate how water is transported around a plant (celery in coloured water)
- Observe flowers (eg lilies) to identify pollen and process of pollination
- Draw diagrams of plants
- Research seed dispersal methods
- Classify seeds in a range of ways

Book suggestions:

- It Starts with a Seed
- The Tiny Seed



Year 4

Autumn 1	Autumn 2
<p>Animals including humans Teeth</p>	<p>Electricity</p>
<p>National Curriculum:</p> <ul style="list-style-type: none"> • Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of teeth in humans and their simple functions • Construct and interpret a variety of food chains, identifying producers, predators and prey <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Research function of the parts of digestive system • Create model of digestive system • Explore eating different types of food to identify which teeth are being used for cutting, tearing and grinding • Classify animals as herbivores, carnivores or omnivores according to the type of teeth they have in their skulls • Use food chains to identify producers, predators and prey within a habitat • Use secondary sources to identify animals in a habitat and find out what they eat <p>Book suggestions:</p>	<p>National Curriculum:</p> <ul style="list-style-type: none"> • Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • Recognise some common conductors and insulators, and associate metals with being good conductors <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Construct a range of circuits • Explore which materials can be used instead of wires to make a circuit • Classify materials that are suitable / unsuitable for wires • Explore how to connect a range of different switches and investigate how they function in different ways • Choose switches to add to circuits to solve particular

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- See Science book list document.

- problems e.g. pressure switch for a burglar alarm
- Design and create different types of switch
- Make circuits that can be controlled

Book suggestions:

- Charging About: The Story of Electricity
- Oscar and the Bird: A Book about Electricity

Spring 1

States of Matter

National Curriculum:

- Compare and group materials together, according to whether they are solids, liquids or gases
- Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius ($^{\circ}\text{C}$)
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Working scientifically opportunities:

- Observe and classify range of solids and liquids
- Explore making gases visible – e.g. squeezing sponges under water to see bubbles – and showing their effect – e.g. using straws to blow objects, trees moving in the wind

Spring 2

Sound

National Curriculum:

- Identify how sounds are made, associating some of them with something vibrating
- Recognise that vibrations from sounds travel through a medium to the ear
- Find patterns between the pitch of a sound and features of the object that produced it
- Find patterns between the volume of a sound and the strength of the vibrations that produced it
- Recognise that sounds get fainter as the distance from the sound source increases

Working scientifically opportunities:

- Classify sound sources
- Explore making sounds with a range of objects such as musical instruments and other household objects
- Explore how string telephones or ear gongs work
- Explore using objects that change in feature to change pitch and volume e.g. length of guitar string, bottles of

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<ul style="list-style-type: none"> • Classify materials according to whether they are solids, liquids and gases • Observe range of materials melting e.g. ice, butter, chocolate • Investigate how to melt ice more quickly • Observe the changes when making rocky road cakes or ice cream <p>Book suggestions:</p> <ul style="list-style-type: none"> • Charlie and the Chocolate Factory 	<p>water or tuning forks</p> <ul style="list-style-type: none"> • Measure sounds over different distances • Measure sounds through different insulation materials <p>Book suggestions:</p> <ul style="list-style-type: none"> • See Science book list document.
<p>Summer 1</p>	<p>Summer 2</p>
<p>Living things and their habitats</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • Recognise that living things can be grouped in a variety of ways • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • Recognise that environments can change and that this can sometimes pose dangers to living things <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Observe plants and animals in different habitats throughout the year • Compare and contrast living things • Use classification keys to name unknown living things • Classify living things found in different habitats based on their features • Create a simple identification key based on observable features • Use fieldwork to explore human impact on local environment e.g. litter, tree planting • Research how environments may change naturally • Research the human impact, both positive and negative, on environments <p>Book suggestions:</p>	

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- *See Science book list document.*



Year 5

Autumn 1	Autumn 2
<p style="text-align: center;">Earth and space</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> Use secondary sources to help create model – e.g. role play or using balls – to show the movement of the Earth around the Sun and the Moon around the Earth Use secondary sources to help make a model to show why day and night occur Make first-hand observations of how shadows caused by the Sun change throughout the day Create a sundial Research time zones Consider view of scientists in the past and evidence used to deduce shape and movements of the Earth, Moon, planets before space travel 	<p style="text-align: center;">Forces</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> Investigate the effect of friction in a range of contexts e.g. trainers, bath mats, etc. Investigate the effects of water resistance in a range of contexts e.g. dropping shapes through water, pulling shapes e.g. boats along the surface of water Investigate the effects of air resistance in a range of contexts e.g. parachutes, spinners, sails on boats Explore how levers, pulleys and gears work Construct a product that involves a lever, pulley or gear Create a timer that uses gravity to move a ball <p>Book suggestions:</p> <ul style="list-style-type: none"> See Science book list document.



Book suggestions:

- See Science book list document.

Spring

Properties and changes of materials

National Curriculum:

- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- Demonstrate that dissolving, mixing and changes of state are reversible changes
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda

Working scientifically opportunities:

- Investigate properties of different materials in order to recommend materials for particular functions depending on these properties e.g. test waterproofness and thermal insulation to identify a suitable fabric for a coat
- Explore adding a range of solids to water and other liquids e.g. cooking oil (as appropriate)
- Investigate rates of dissolving by carrying out comparative and fair tests
- Separate mixtures by sieving, filtering and evaporation, choosing the most suitable method and equipment for each mixture
- Explore a range of non-reversible changes e.g. rusting, adding fizzy tablets to water, burning
- Carry out comparative and fair tests involving non-reversible changes e.g. what affects the rate of rusting /



what affects the amount of gas produced / etc.

Book suggestions:

See Science book list document.

Summer 1

Summer 2

Living things and their habitats
Animals including humans

National Curriculum:

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- Describe the life process of reproduction in some plants and animals
- Describe the changes as humans develop to old age

Working scientifically opportunities:

- Research the life cycle of a range of animals
- Compare the gestation times for mammals and look for patterns e.g. in relation to size of animal or length of dependency after birth
- Look for patterns between the size of an animal and its expected life span
- Grow and observe plants that reproduce asexually e.g. strawberries, spider plant, potato
- Take cuttings from a range of plants e.g. African violet, mint
- Plant bulbs and then harvest to see how they multiply
- Research pollination

Book suggestions:

- See Science book list document.



Year 6

Autumn 1	Autumn 2
<p style="text-align: center;">Electricity</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • Associate brightness of a lamp or volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Explain how a circuit operates to achieve particular operations e.g. control the light for a torch with different brightnesses or make a motor go faster or slower • Build circuits to solve particular problems e.g. a quiet and a loud burglar alarm or designing set of traffic lights • Carry out fair tests to explore changes in circuits • Devise ways to measure brightness of bulbs, speed of motors, volume of a buzzer • Make circuits that can be controlled as part of a DT project <p>Book suggestions:</p>	<p style="text-align: center;">Living things and their habitats</p> <p>National Curriculum:</p> <ul style="list-style-type: none"> • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Use classification systems and keys to identify some animals and plants in the immediate environment • Research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system • Use information about the characteristics of an unknown animal or plant to assign it to a group • Classify plants and animals in a range of ways e.g. Venn diagrams, Carroll diagrams, keys • Create an imaginary animal that has features from one or more groups • Research the formal classification system devised by Carl Linnaeus and why it is important <p>Book suggestions:</p> <ul style="list-style-type: none"> • See Science book list document.

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<ul style="list-style-type: none"> • See Science book list document. 	
Spring 1	Spring 2
Animals including humans	
<p>National Curriculum:</p> <ul style="list-style-type: none"> • Identify and name the main parts of the human circulatory system • Describe the functions of the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • Describe the ways in which nutrients and water are transported within animals, including humans <p>Working scientifically opportunities:</p> <ul style="list-style-type: none"> • Explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health • Create a role play model for the circulatory system • Carry out a range of pulse rate investigations • Fair test: effect of different activities on pulse rate • Pattern seeking: explore which groups of people may have higher or lower resting pulse rates • Observing over time: how long does it take my pulse rate to return to my resting pulse rate • Pattern seeking: explore recovery rate for different groups of people <p>Book suggestions:</p> <ul style="list-style-type: none"> • See Science book list document. 	
Summer 1	Summer 2
Evolution and inheritance	Light
<p>National Curriculum:</p> <ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of 	<p>National Curriculum:</p> <ul style="list-style-type: none"> • Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to

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years ago

- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

Working scientifically opportunities:

- Design a new plant or animal to live in a particular habitat
- Use models to demonstrate evolution e.g. Darwin's finches bird break activity
- Research how the population of peppered moths changed during the Industrial Revolution
- Make observations of fossils to identify living things that lived on Earth millions of years ago
- Identify features in animals and plants that are passed on to offspring
- Explore this process by considering the artificial breeding of animals of plants
- Compare the ideas of Charles Darwin and Alfred Wallace on evolution
- Research the work of Mary Anning and how this provided evidence of evolution

Book suggestions:

- See Science book list document.

explain that objects are seen because they give out or reflect light into the eye

- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Working scientifically opportunities:

- Decide where to place rear-view mirrors on cars
- Design and make a periscope and use the idea that light appears to travel in straight lines to explain how it works
- Explore the different ways to demonstrate that light travels in straight lines e.g. shining a torch down a bent and straight hose pipe / shining a torch through different shaped holes in card
- Investigate the relationship between light sources, objects and shadows by using shadow puppets
- Look at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur)

Book suggestions:

- See Science book list document.