Manor Park's science journey

National Curriculum

Key Stage One:

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is described separately in the programme of study, but must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage

Lower Key Stage Two:

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

'Working scientifically' is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper Key Stage Two:

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and

fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.
'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.
Pupils should read, spell and pronounce scientific vocabulary correctly.

Science
Manor Park Curriculum design

Intent

Science is a vitally important subject that provides children with a wealth of opportunities to be naturally curious about the world around them. At Manor Park, our children demonstrate a natural fascination with how the world works and our science curriculum, as well as wider enrichment opportunities provide them with a valuable contribution to their understanding.

We aim to engage and inspire children in the hope that many of them will pursue a career in science, encouraging them to have high aspirations for themselves and their future. We will also ensure that our pupils leave primary school with a solid skills-set and grounding in practical science as well as a heightened ecological awareness and a sense of environmental responsibility, which is crucial within our ever-changing world.

Implementation

Science depends upon developing key skills, as well as an acquisition of important facts, ideas and knowledge. All of these areas of learning are inextricably linked and together they allow children to develop and extend their understanding of the world and how it has been constructed. The 'working scientifically' skills are the key focus of our lessons and they are the ones that all children need to develop, in order to learn more about the world around them. This involves planning and undertaking a variety of exciting, creative and fun investigations and experiments for biology, chemistry and physics. Through building up a body of foundational knowledge, pupils are encouraged to develop a sense of excitement and curiosity about natural phenomena. Our children then participate in different types of scientific enquiries and are encouraged to pose and answer scientific questions about the universe. Children are encouraged to question and explore possibilities, through discussion with others and by testing their hypothesis.

Science is taught through afternoon sessions and half termly 'Let's Investigate' days. A bespoke curriculum is in place which utilises topic based learning where appropriate, and discrete science content where required. The curriculum map is followed to ensure coverage of the National Curriculum and bespoke learning for our children.

Impact

It is our uncompromising vision that all children reach age related expectations at the end of each year. On going teacher assessment is used to swiftly address gaps, therefore ensuring almost all children securely meet the objectives mapped out in our curriculum.

Year Group	Autumn	Spring	Summer
Year 1	**Topic: Super Humans & Wild Woods**	**Topic: Hear me Roar!**	**Topic: Flashback**
Scientist	**Chester Greenwood**	**Mary Anning (fossils)**	
Prior learning links	*Seasonal changes – EYFS* *EYFS - hibernation* *Naming plant parts – leave & stick* *Pumpkin – seeds / experiment* *EYFS – hedgehog features & habitat* ***EYFS early learning goal** – Explore the natural world around them, making observations & drawing pictures of animals and plants.* *Children should know about similarities and differences in relation to living things.* ***EYFS early learning goal** – Know some similarities & differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. They talk about the features of their own immediate environment and how environments vary from one another.* ***EYFS early learning goal** – Understand some important processes and changes in the natural world around them, including the seasons & changing states of matter explaining why some of these things occur and talk about changes.*	*EYFS - Hibernation, animal shelter,* *EYFS - Features of a hedgehog*	***EYFS early learning goal** – Know some similarities & differences between the natural world around them and contrasting environments.* *Properties of materials vocabulary taught as part of tall, taller and tallest object. School ground walk around describing materials they found. Describe pumpkin and how it feels.*
National Curriculum objectives	**Seasonal Changes:** Pupils should be taught to: • observe changes across the four seasons(outdoor learning) • observe and describe weather associated with the seasons and how day length varies. (outdoor learning) **Plants:** Pupils should be taught to: • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (outdoor learning) – Trees (deciduous: oak, beech / evergreen: cedar, holly, pine) - Wild Plants: bluebell, daisy, dandelion, ivy - Garden Plants: lavender, rose, sunflower	**Animals, including humans** Pupils should be taught to: • identify and name a variety of common animals including fish (clownfish, carp), amphibians (frog), reptiles (snake, turtle, crocodile), birds (ducks, hawks, crows) and mammals (lion, elephant, cow) • identify and name a variety of common animals that are carnivores (carnivores: lions, tigers, eagles, owls), herbivores (herbivores: horse, cow, rabbit, deer) and omnivores (hedgehog, monkey, turtle, ostrich) – Apply to the context of dinosaurs • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets: dogs, cats, hamsters) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	**Everyday Materials** Pupils should be taught to: • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties (hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, not bendy, waterproof, not waterproof, absorbent, transparent, opaque, not absorbent) of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties. **Seasonal Changes:** Pupils should be taught to:

	• identify and describe the basic structure of a variety of common flowering plants, including trees (outdoor learning) – What flowering plants? See above Trees – bark, branch, roots, leaves Plants – petals, leaves, roots, stem, flowers or fruit, **Animals, including humans** Pupils should be taught to: -identify and name a variety of common animals including fish (blue tang, clownfish, carp) amphibians (frog, toad, newt), reptiles (snake, turtle crocodile), birds (ducks, hawks, crows) and mammals (lion, elephant, zebra, cow, panda) Link to habitats to be within topic (woodland animals: badgers, fox, rabbits, squirrels, deer) (outdoor learning)	**Seasonal Changes:** Pupils should be taught to: • observe changes across the four seasons (outdoor learning) • observe and describe weather associated with the seasons and how day length varies (outdoor learning)	• observe changes across the four seasons (outdoor learning) • observe and describe weather associated with the seasons and how day length varies (outdoor learning)
Trips / events (topic enhancement)	Memorial park seasonal walk (observe changes over time)	Memorial park seasonal walk (observe changes over time) Puppies come in – mammal link All Things Wild – workshop & trip – animal groups & dinosaur fossils	Memorial park seasonal walk (observe changes over time)
Let's Investigate Day	Ear muffs – linked to materials & Chester Greenwood	Material to keep dinosaur dry, dinosaur poo,	Test materials, best material for umbrella – waterproof

Year 2	Topic: Our City in the Spotlight	Topic: Around the World	Topic: Conquering Land & Sea
Scientist		**Sarah Anne Drake (orchids)** **Margaret Mee (studying within Amazon)**	
Prior learning links	**Animals including humans – year 1 (spring)**	**Plants – year 1 (autumn)** *Pupils should recall types of plants from year 1.*	**Use of everyday materials – year 1 (summer)**
National Curriculum objectives	**Animals including humans** Pupils should be taught to: • notice that animals (which animals: cow, dog, owl, pig, lamb, duck), including humans, have offspring which grow into adults (outdoor learning) • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) (outdoor learning) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Plants:** Pupils should be taught to: • observe and describe how seeds and bulbs grow into mature plants (bean diary) • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (experiment around cress) **Living things & their habitats:** Pupils should be taught to: • explore and compare the differences between things that are living, dead, and things that have never been alive (objects: bike, ball, key, laptop car) (animals: beefs, monkeys, crabs, fox) (plants: mushroom, daffodil, willow tree, daisy) Picture of the park: children to unpick things from image that are living (dog, man, tree, child), used to be alive (leaf, fallen leaves) & never been alive (bin, slide, boots, path) • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals (frog, human, giraffe, carp, hawk) and plants (sunflower), and how they depend on each other (outdoor learning) • identify and name a variety of plants and animals in their habitats (sea, rainforest), including micro-habitats (Minibeats - Under stones, in short grass, in & on soil, under fallen leaves, in tall grass & flowers) (outdoor learning) • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain (3 steps), and identify and name different sources of food (e.g. vegetation – plants, catching prey etc)	**Use of every day materials** Pupils should be taught to: • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

		Global Goal 15 – Life on Land *A flourishing life on land is the foundation for our life on this planet. We are all part of the planet's ecosystem and we have caused severe damage to it through deforestation, loss of natural habitats and land degradation. Promoting a sustainable use of our ecosystems and preserving biodiversity is not a cause. It is the key to our own survival.* *Global Goal 14 – Life below water* *Healthy oceans and seas are essential to our existence. They cover 70 percent of our planet and we rely on them for food, energy and water. Yet, we have managed to do tremendous damage to these precious resources. We must protect them by eliminating pollution and overfishing and immediately start to responsibly manage and protect all marine life around the world.*	
Cross curricular links		Comparisons with other countries across the world	
Let's Investigate Day	Keeping Santa healthy	How do plants get water? Celery	Material to protect egg

Year 3	Topic: Greeks	Topic: Across the ages	Topic: Food glorious food
Scientist			**Joseph Banks** **Volcanoes / Rocks – Katia Krafft**
Prior learning links		**Plants – year 2 (spring), year 1 (autumn)** *Pupils should build on learning from year 2 around seeds, bulbs and necessities for plants to grow. Pupils should recall types of plants from year 1.*	*EYFS Sorting objects – reflective & not reflective* *EYFS – drew day and night picture*
National Curriculum objectives	**Forces & Magnets:** Pupils should be taught to: • compare how things move on different surfaces (outdoor learning) • 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.	**Animals, including humans** Pupils should be taught to: • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals (humans, bears, rays, turtle) have skeletons and muscles for support, protection and movement. **Plants:** Pupils should be taught to: • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers (outdoor learning) • 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 (rose) • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	**Rocks:** Pupils should be taught to: • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties – hard, smooth, bumpy, dull, brittle, waterproof, conductor, rough, soft, shiny, ***permeable, impermeable, high density, low density, durable, not durable*** (rock specific) (outdoor learning) • 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. (outdoor learning) **Light:** Pupils should be taught to: • recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object (outdoor learning) • find patterns in the way that the size of shadows change. (outdoor learning)
Let's Investigate Day	**Santa's sleigh reins (choosing a magnetic material to attach Santa's sleigh to the reindeer)**	**Owl pellets**	**UV beads**

Year 4	Topic: Chariots of Fire	Topic: Waves	Topic: Invaders
Scientist	**Benjamin Franklin – electricity**	**Alexander Graham Bell**	
Previous Learning skills		***Living things & their habitats*** *Pupils should study and raise questions about their local environment throughout the year building on their learning of plant life cycles from year 3.*	**Animal including humans – Year 3, Year 2, Year 1** ***Animals including humans*** *Pupils should build on learning gained in Year 3 around types of skeletons within animals. Pupils should build on year 2 learning around off spring and year 1 learning around types of animals*
National Curriculum objectives	**States of Matter** Pupils should be taught to: • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **Electricity:** Pupils should be taught to: • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors.	**Living things & their habitats:** Pupils should be taught to: • recognise that living things can be grouped in a variety of ways (vertebrates & invertebrates) • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment (geography link) (outdoor learning) • recognise that environments can change and that this can sometimes pose dangers (pollution, global warming, climate change, hunting etc) to living things. *Global Goal 13 – Climate Action* *Through education, innovation and adherence to our climate commitments, we can make the necessary changes to protect the planet.* *Global Goal 15 – Life on Land* *A flourishing life on land is the foundation for our life on this planet. We are all part of the planet's ecosystem and we have caused severe damage to it through deforestation, loss of natural habitats and land degradation. Promoting a sustainable use of our ecosystems and preserving biodiversity is not a cause. It is the key to our own survival.* *Global Goal 14 – Life below water* *Healthy oceans and seas are essential to our existence. They cover 70 percent of our planet and we rely on them for food, energy and water. Yet, we have managed to do tremendous damage to these precious resources. We must protect them by eliminating pollution and overfishing and*	**Animals including Humans:** Pupils should be taught to: • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions **Sound:** Pupils should be taught to: • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases.

		immediately start to responsibly manage and protect all marine life around the world. ***Animals including Humans:*** • construct and interpret a variety of food chains, identifying producers, predators and prey. (based on waves topic & animals within the sea) ***Sound:*** Pupils should be taught to: • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases.	
Trips / events (topic enhancement)		**Trip to sea life centre**	
Let's Investigate Day	***Dissolving candy canes into different liquids***	***Which materials will be best for soundproofing.***	***Making light up wands – what battery will light up a bulb the brightest***
Cross curricular links	**Alexander Fleming – penicillin (English)** **Louis Pasteur – bacteria (English)**	**Jacques Cousteau – Scuba diving (English)** **Waves (main topic – lots of cross curricular opportunities – lots of Science in topic books)** **Lighthouse**	

Year 5	Topic: Walk like an Egyptian	Topic: To infinity & beyond	Topic: Spirit of Samba
Scientist		**Albert Einstein – gravity** **Isaac Newton – Law of motion (topic lesson)** **Mae Jemison (astronaut) / Katherine Johnson – Research session** **Jane X Luu**	**David Attenborough / Cesar Millan / Jade Goodall (animal behaviourists)**
Previous learning links	**Everyday materials (Year 1 autumn/summer, Year 2 summer)** **Properties of materials (Year 4 states of matter link)** ***Properties of materials*** *Pupils should build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4.*	**Animals including humans (year 1, year 2, year 3. Year 4)** Children (from reading & the news) tend to have some understanding of the planet names.	**Living things & their habitats (year 4 spring)** **Forces & magnets (year 3 summer)** ***Living things & their habitats*** *Pupils should study and raise questions about their local environment throughout the year building on their learning of plant life cycles from year 3. They will also build on their understanding of living things grasped in year 4.* ***Forces*** *Pupils should build on their learning of magnetic forces can act with and without direct contact from year 3 as well as considering the types of forces they learnt from year 3.*
National Curriculum objectives	**Properties & changes of materials:** Pupils should be taught to: • compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • 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. • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • demonstrate that dissolving, mixing and changes of state are reversible changes • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	**Animals including humans** Pupils should be taught to: • describe the changes as humans develop to old age. **Earth & Space** Pupils should be taught to: • describe the movement of the Earth, and other planets, relative to the Sun in the solar system • describe the movement of the Moon relative to the Earth • describe the Sun, Earth and Moon as approximately spherical bodies • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. **Forces:** Pupils should be taught to: • explain that *unsupported objects (leaves off a tree, ball being thrown into air, humans jumping up)* fall towards the Earth because of the force of gravity acting between the Earth and the falling object (outdoor learning) • identify the effects of air resistance, water resistance (outdoor learning)	**Living things & their habitats:** Pupils should be taught to: • describe the differences in the life cycles of a mammal *(dogs/ humans)*, an amphibian, an insect *butterfly* and a bird *(chicken), turtle (reptile)* • describe the life process of reproduction in some *plants (asexual: bulbs – tulip, garlic, tubers – potato, parsnip, runners – strawberries, peppermint), (sexual: wind, animals, explosion, water)* (outdoor learning) **Properties & changes of materials:** Pupils should be taught to: • 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. • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • demonstrate that dissolving, mixing and changes of state are reversible changes

	<u>Forces:</u> Pupils should be taught to: • identify the effects of friction, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.		• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
Let's Investigate Days	***Santa sleigh testing different materials, speed, friction***	***Will the size of a parachute affect the speed?***	***Do all solids dissolve?***
Cross curricular links	**D&T shaduf, pulley**	**topic (history) man walk on moon, Neil Armstrong, Moon landing (English/History) Information text on solar system (English) Day & night / time zones – geography link The big bang theory – history / art Phases of the moon – artwork Space race – history Famous astronauts – History Some space learning for Science in Topic books**	
Trips / events (topic enhancement)		**Space Centre Astronaut training (after school) Star gazing (after school)**	**Trip to Twycross Zoo**

Year 6	Topic: Rising from the Rubble	Topic: Frozen Planet	Topics: Benin
Scientist	**Thomas Edison**	**Charles Darwin** **Carl Linneaus**	**Rosalind Franklin (DNA researcher)**
Previous learning links	**Electricity - Year 4 (summer)** **Light – Year 3 (summer)** ***Electricity*** *Building on their work in year 4, pupils should construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors.* ***Light*** *Pupils should build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows.*	**Living things & their habitats – Year 4 (spring), year 5 (spring)** ***Living things & their habitats*** *Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail.* ***Evolution & Inheritance*** *Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time.* *Year 2 understand that humans have offspring which grow into adults*	**Animals including humans – year 1 (spring), year 2 (autumn), year 3 (sprung), year 4 (summer), year 5 (summer)** ***Animals including humans*** *Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function.*
National Curriculum objectives	**Electricity:** Pupils should be taught to: • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram. **Light:** Pupils should be taught to: • Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (outdoor learning)	**Living things and their habitats:** Pupils should be taught to: • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, *including micro-organisms, plants and animals* (outdoor learning) • Give reasons for *classifying plants and animals* based on specific *characteristics*. **Classification** **Evolution & Inheritance**: Pupils should be taught to: • Recognise *that living things (fish/lotus/ammonite) have* changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • Recognise that living things produce offspring (humans) of the same kind, but normally offspring vary and are not identical to their parents • Identify how *animals and plants (polar bear – arctic, camel – desert, cactus – desert, toucan – rainforest) are adapted* to suit their environment in different ways and that adaptation may lead to evolution (peppered moth).	**Animals including humans:** Pupils should be taught to: • Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • Describe the ways in which nutrients and water are transported within animals, including humans.

Trips / events (topic enhancement)	Coventry Transport Museum (light experiment for headlamps & engineering within World War 2) Dol y moc	Freshwater theatre company – Titanic talk Al Silvester – visit (share trip & healthy)	Weather monitors Transition Science heart secondary school
Let's investigate day	***Shadow puppets***	***Organising garden centre (classification)***	***<u>Transition days, children experiencing science in other schools</u>*** ***Blue coat*** ***Whitley*** ***Ernesford Grange*** ***Finham Park***
Cross curricular links	To design a product incorporating electrical switches / light. STEM (DT – Anderson shelter)	App proto type to show learning & knowledge from science (computing)	