



SCIENCE SKILLS AND KNOWLEDGE PROGRESSION OVERVIEW 2020-21

Kingfisher Hall Academy

Ensuring our science is a force for positive change

Yearly Overview

Kingfisher Hall Curriculum Overview 2020-2021 "Be a force for positive change"						
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	This is me	Girl Power	The mystery of Our History	Eureka!	Features of Creatures	Protectors of the Planet
Y6	Government and Politics History (Greece) Geography (Map Week)	Slavery History (Slavery) Science (Light)	WW2 History (WW2) Science (electricity)	Tame the Dragon Geography (Trade & Commerce)	Where did we come from? Science (Evolution) Geography (France)	What's cooking? Science (Animals & living things)
Y5	Children of the world Geography (world)	Industrial Revolution History (IR & Victorians) Science (Forces)	A Street Through Time History (Local street) History (Vikings)	Heavens Above Science (Space) History (Benin)	What's in the Woodland Walk? Science (Animals)	Hand me downs Geography (Global warming) Science (Materials)
Y4	My Family Geography (Europe)	Invasion, Invasion, Invasion! History (Romans) Geography (Italy)	Settle down History (Saxons)	How does it work? Science (Electricity) Science (Sound)	Rainforests Science (Living things) Science (Animals)	We need the trees Science (States of Matter) Geography (Rainforests)
Y3	Maybe it's because I'm a Londoner Geography (London) History (London)	Stones and Bones History (Stone age) Science (Rocks)	Amazing Egyptians Science (Forces & Magnets) History (Egyptians)	Angry Earth Geography (natural disasters) Science (Light)	Animal Kingdom Science (Animals)	Please Help Me Mr Bee Science (plants)
Y2	Where I live; my community Geography (Enfield)	Football Crazy History (People)	Fire! Fire! History (Great Fire of London)	See how it grows Science (Plants)	Down in the Woodland Walk Science (Animals)	From street to sea Geography Science
Y1	Where I learn; my school Geography (Kingfisher)	Whatever the Weather Geography (Weather) Science (Seasons)	What toys did my grandparents play with? History (Toys)	Beautiful Beanstalks! Science (Plants)	Amazing Animals Science (animals)	Reduce; Reuse; Recycle Science (materials)
R	My family at home Books: -Anna Hibiscus song	Seasons Books: A brave bear -Blue Penguin -The snowman	Dinosaurs Books: -The dinosaur who lost his roar -Bedtime for monsters	People who help us Books: -Naughty bus	Traditional Tales Books:	My world Books: -10 things I can do to help my world.
N	- Marvellous me (Differences and similarities). - Rainbow Colours Books: Elmer's Surprise	Seasonal Changes - Celebrations. Books: When will it be winter? and The night before Christmas	Fairy Tales - Woodland animals and habitats Books: The Gingerbread Man and The Gruffalo	Africa - Courage & Friendship Books: Handa's Surprise and Room on the broom	People who help us - Farm Books: Doctor Daisy and The enormous turnip	Space Transition- Emotions & feelings Books: Alien's love underpants and Ruby's worries

	Science
Curriculum Principles:	- Enquiry Based Learning - Equality of Opportunity - Force for Positive Change - Sustainability
Intent	<p style="text-align: center;">To enhance children's inquisitive nature and understand how science impacts our world and the future</p> <p>Children will develop a love of science and an ability to plan, observe, record, conclude and evaluate. From nursery to year six children will discover the wonders of science, develop scientific knowledge and conceptual understanding, be able to question, reason and make links to the world around them, and develop a scientific approach to sustainability and being a force for positive change.</p>
Knowledge Threads	The areas of learning in science are sequenced and linked through the study of: Living things and habitats, Materials and Forces
Living things and habitats	The natural world, plants, animals including humans, evolution, inheritance
Materials	Every day materials, rocks and soils, states of matter
Forces & Sources	Weather, light, sound, electricity, earth and space, air/water resistance, friction, gravity
Child Initiated	There must be enough scope in the medium term planning to allow children's interests and enquiry to be explored although all knowledge threads and scientific skills are covered
Scientific Skills	The Big Scientific Ideas
<ul style="list-style-type: none"> • Planning 	Ask relevant questions, set up simple practical enquires-comparative and fair tests, plan enquires, including recognising and controlling variables where necessary (<i>independent variable (what changes), dependent variable (outcome to measure or observe), controlled variables (things to keep the same)</i>)
<ul style="list-style-type: none"> • Observing 	Observe closely, use simple equipment, perform simple tests, identify and classify, make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers, use a range of scientific equipment with increasing accuracy and precision
<ul style="list-style-type: none"> • Recording 	Gather, record classify and present data in a variety of ways to help in answering questions, record findings with increasing-using scientific vocabulary, diagrams and labels, classification keys, tables, bar and line graphs, and models present findings in written form, displays and other presentations
<ul style="list-style-type: none"> • Concluding 	Use observations and ideas to suggest answers to questions, report on findings from enquires, including oral and written displays or presentations of results and conclusions, identify differences, similarities or changes related to simple scientific ideas and processes, explanations involving casual relationships, use simple models to describe scientific ideas
<ul style="list-style-type: none"> • Evaluating 	Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further comparative tests, identify scientific evidence that has been used to support or refute ideas or arguments

Characteristics of Scientists

- Great sense of excitement and curiosity about natural phenomena
- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings
- The ability to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes
- Be familiar with, and use, technical terminology accurately and precisely, building up an extended specialist vocabulary
- Apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data

Approaches to enquiry

- Children 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
- finding things out using secondary sources of information

Science Sequencing Ideas

EYFS

The principal focus of science teaching in EYFS is to enable pupils to develop a love and wonder for science and discover how and why things happen. Through exploration, investigation and purposeful play children develop scientific observational skills. They ask questions about their world and their critical thinking skills develop. Through the enabling environment they gain opportunities to explore their ideas, combine materials with a purpose and develop scientific vocabulary. Scientific skills in the EYFS are gained through play, first-hand experience, enquiry and collaboration. EYFS pupils enter key stage 1 with the ability to ask questions, observe and comment on what they have seen and found out.

Nursery and Reception Scientific Skills	The Big Scientific Ideas
Planning	<ul style="list-style-type: none"> ➤ To ask how and why questions ➤ To be interested in how things work ➤ To have an idea of what might happen
Observing	<ul style="list-style-type: none"> ➤ To make comparisons between different features ➤ To discover similarities and differences ➤ To explore change
Concluding	<ul style="list-style-type: none"> ➤ Children make comments about what they have heard and ask questions to clarify their understanding. ➤ They offer explanations for why things might happen, making use of new vocabulary.

KS1

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. Children 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.

Skills	The Big Scientific Ideas
Planning	<ul style="list-style-type: none"> ➤ Ask simple questions
Observing	<ul style="list-style-type: none"> ➤ Observe closely, using simple equipment ➤ Perform simple tests ➤ Identify and classify
Recording	<ul style="list-style-type: none"> ➤ Gather and record data to help in answering questions
Concluding	<ul style="list-style-type: none"> ➤ Use their observations and ideas to suggest answers to questions

Lower KS2

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.

Skills	The Big Scientific Ideas
Planning	<ul style="list-style-type: none"> ➤ Ask relevant questions ➤ Set up simple practical enquires, comparative and fair tests
Observing	<ul style="list-style-type: none"> ➤ Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers
Recording	<ul style="list-style-type: none"> ➤ Gather, record, classify and present data in variety of ways to help in answering the question ➤ Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables
Concluding	<ul style="list-style-type: none"> ➤ Report on findings from enquires, including oral and written displays or presentations of results and conclusions ➤ Identify differences, similarities or changes related to simple scientific ideas and processes ➤ Use straightforward scientific evidence to answer questions or to support their findings
Evaluating	<ul style="list-style-type: none"> ➤ Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests

Upper KS2

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

Skills	The Big Scientific Ideas
Planning	<ul style="list-style-type: none"> ➤ plan enquires, including recognising and controlling variables where necessary (<i>independent variable (what changes), dependent variable (outcome to measure or observe), controlled variables (things to keep the same)</i>)
Observing	<ul style="list-style-type: none"> ➤ take measurements, using a range of scientific equipment with increasing accuracy and precision
Recording	<ul style="list-style-type: none"> ➤ record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models ➤ present findings in written form, displays and other presentations
Concluding	<ul style="list-style-type: none"> ➤ report on findings from enquires, including oral and written explanations of results, explanations involving casual relationships and conclusion, and conclusions ➤ use simple models to describe scientific ideas
Evaluating	<ul style="list-style-type: none"> ➤ use test results to make predictions to set up further comparative tests ➤ identify scientific evidence that has been used to support or refute ideas or arguments

Year 1

Topic / Term	Whatever the Weather (Seasons) Autumn 2	Beautiful Beanstalks (plants) Spring 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To name the four seasons ➤ To be able to identify the four seasons from their features ➤ To observe changes in weather ➤ To describe weather associated with the seasons ➤ To observe how day length varies. ➤ To begin to notice weather climates in other countries ➤ To know the impact of weather on animals and environment 	<ul style="list-style-type: none"> ➤ To identify and name a variety of common wild plants ➤ To identify and name a variety of garden plants ➤ To identify and compare deciduous and evergreen trees ➤ To observe the growth of seeds and bulbs ➤ To identify the basic structure of common flowering plants ➤ To describe the basic structure of common flowering plants ➤ To identify the basic needs of a plant
Links to National Curriculum	<ul style="list-style-type: none"> - observe changes across the 4 seasons - observe and describe weather associated with the seasons and how day length varies - asking simple questions and recognising that they can be answered in different ways - observing closely, using simple equipment 	<ul style="list-style-type: none"> - Identify and name a variety of common plants including garden plants, wild plants, trees (and those classified as deciduous and evergreen) - Identify and describe the basic structure of a variety of common flowering plants including roots, stem / trunk, leaves, flowers, fruit - Observe and describe how seeds and bulbs grow into mature plants - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
Prior Learning	YN/YR: Seasons	YN: Naming common plants YR: Planting and observing growth
Knowledge Threads		
Living Things and Habitats	Hibernation, growth of plants & growth of animals (why are lambs born in Spring?), hot & cold places, migration	How do plants grow, relative to their habitats? (Strawberries from greenhouses vs wild)
Materials	And environmental impact – extreme / seasonal weather	Plants that contribute to what we use or wear, e.g. cotton,
Forces & Sources	Warmth / waterproof / UV protection / dressing for summer vs dressing for winter	Strength of different plant materials to create ropes, buildings, bridges – also, weather ‘forces’ that have spread species around the world (wind and tides)
Child Initiated	Push / pull, wind, windmills (split pin DT), kites, erosion	How can I link my thinking? What plants have I used / seen / eaten today?
Topic / Term	Amazing Animals (Animals, including humans) Summer 1	Reduce, Reuse, Recycle (Everyday Materials) Summer 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To identify and classify animals ➤ To compare the structure of common animals ➤ To identify herbivores, carnivore and omnivores ➤ To identify basic parts of the human body ➤ To draw and label basic parts of the human body 	<ul style="list-style-type: none"> ➤ Identify and name everyday materials ➤ Classify objects according to the materials they are made from ➤ To compare everyday materials ➤ To describe properties of materials

Links to National Curriculum	<ul style="list-style-type: none"> - identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals - identify and name a variety of common animals that are carnivores, herbivores and omnivores - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) - identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> - 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, rock - Describe the simple physical properties of a variety of everyday materials - Compare and group together a variety of everyday materials on the basis of their simple physical properties - Identify and compare the uses of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard
Prior Learning	YN/YR: Animals including humans	YN/YR: Materials in our environment(in the woods, ocean)

Knowledge Threads

Living Things and Habitats	Where do we live? Where do animals live? Discuss why some animals are better on land, some in water.	What's the impact on the wider environment of using the materials that we do? (e.g. production of concrete and glass)
Materials	What materials have we used to develop / enhance our senses? How have we developed materials for habitats?	Why do we reduce, reuse and recycle?
Forces & Sources	Discuss the force that might be used for movement of parts of our bodies.	What does it take to reuse something? (cleaning processes for hygiene) Recycle something? (chemistry of re-manufacturing) e.g. glass or plastic.
Child Initiated	How can I change the way I live?-linked to sustainability	How do we make and recycle e.g. glass – heat and pressure

Vocabulary	<ul style="list-style-type: none"> - Sun, rain, wind, snow, ice, frost, autumn, winter, spring, summer, season, weather, extreme weather, tornado, storm - Garden plant, wild plant, tree, seed, stem, roots, petals, leaves, fruit, trunk, bulbs, water, light, temperature, deciduous, evergreen, - Classify, amphibian, reptile, mammal, bird, carnivore, herbivore, omnivore, human body, senses - Reduce, Reuse, Recycle, material, wood, metal, plastic, fabric, glass, brick, cardboard, paper, water, rock, properties, compare, similarities and differences,
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Year 1 Scientific Skills

Planning	o Ask simple questions and recognise that they can be answered in different ways
Observing	<ul style="list-style-type: none"> o Use simple equipment to observe closely (Year 1 focus) o Perform simple tests (Year 1 focus) o Identify and classify
Recording	o Gather and record data to help in answering questions
Concluding	o Use his/her observations and ideas to suggest answers to questions

Year 2

Topic / Term	Fire! Fire! (Materials) Spring 1	See How It Grows (Plants) Spring 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To classify a range of materials according to their properties ➤ To compare the suitability of materials for purpose ➤ To compare how a range of materials move on different surfaces ➤ To investigate how some solid objects can change shape ➤ To investigate properties of materials 	<ul style="list-style-type: none"> ➤ To observe seed and bulb growth ➤ To describe the stages of seed and bulb growth ➤ To research the needs of plants in order to grow ➤ To create a plant care guide ➤ To identify the necessity for plants as our life source ➤ To identify times of year for successful plant growth
Links to National Curriculum	<ul style="list-style-type: none"> - identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses - compare how things move on different surfaces. - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<ul style="list-style-type: none"> - observe and describe how seeds and bulbs grow into mature plants - find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Prior Learning	Yr1: Everyday materials	YR1: Plants
Knowledge Threads		
Living Things and Habitats	Which materials are their houses made of? What materials can they find in the classroom?	Why do we need plants? Discuss that it is a source of food, oxygen and habitat
Materials	Sand and heat used to create glass. Why would it not be a good idea to make a radiator out of chocolate?	Plants need soil, light, water. What materials might make your plant grow better / stronger?
Forces & Sources	Exploring how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. How do things move on different surfaces?	Forces that aid seed dispersal (movement, wind etc.)
Child Initiated	How can I change the way I live?-linked to sustainability	How do times of year affect the growth of plants?
Topic / Term	Down in the Woodland Walk (Animals, Including Humans) Summer 1	From the Street to the Sea (Living Things & their habitats) Summer 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To identify and match parents to their young ➤ To know that some babies hatch from eggs ➤ To know the basic needs of animals and humans ➤ To describe the importance of health and hygiene ➤ To identify what we need to grow 	<ul style="list-style-type: none"> ➤ To explore things that are living, dead and never been alive ➤ To identify suitable habitats ➤ To describe how habitats provide basic needs ➤ To identify and name microhabitats ➤ To explore basic food chains

Links to National Curriculum	<ul style="list-style-type: none"> - 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 the importance for humans of exercise, eating the right amounts of different types of food, and hygiene 	<ul style="list-style-type: none"> - explore and compare the differences between things that are living, dead, and things that have never been alive - identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other - identify and name a variety of plants and animals in their habitats, including microhabitats - describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
Prior Learning	Yr1: Variety of habitats and change in seasons	YR: Chicks hatching

Knowledge Threads

Living Things and Habitats	Explore a variety of parents and their young – Some animals have babies that hatch from eggs. Why do some animals have one baby at a time? Why do some have many more? Looking at food types, what they do for us and our growth.	Habitats and food chains – sustainability of life through continual food chains.
Materials	What materials help us to stay healthy and hygienic? Packaging-link to sustainability	Explore materials that have never been alive (table, window etc.) How do you know?
Forces & Sources	Forces in our body that help us to exercise and stay fit – push, pull, resistance. Forces in cooking (whipping / whisking/beating / kneading, baking / frying/ cracking eggs)	Movement of plants and habitats.
Child Initiated	What could I do to ensure that I am staying fit, healthy and hygienic? What do I need to help me grow? How do times of year affect what I should / can eat? Cost of food: fruits that are out of season	Why are food chains important for survival?
Vocabulary	<ul style="list-style-type: none"> - material, wood, metal, plastic, fabric, glass, brick, cardboard, paper, water, rock, properties, compare, similarities and differences, solid, squashing, bending, twisting, stretching, - garden plant, wild plant, tree, seed, stem, roots, petals, leaves, fruit, trunk, bulbs, water, light, temperature, deciduous, evergreen, seed dispersal, temperature - Environment, offspring, babies, survival, exercise, hygiene, adaptation, healthy, EatWell, diet - Living, dead, alive, material, habitat, dependence, food chain, source, microhabitats, compare, 	

Year 2 Scientific Skills

Planning	<ul style="list-style-type: none"> o Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum
Observing	<ul style="list-style-type: none"> o Use simple equipment to observe closely including changes over time o Perform simple comparative tests o Identify, group and classify
Recording	<ul style="list-style-type: none"> o Gather and record data to help in answering questions including from secondary sources of information
Concluding	<ul style="list-style-type: none"> o Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns

Year 3

Topic / Term	Stones and Bones (Rocks) Autumn 2	Amazing Egyptians (Forces & Magnets) Spring 1	Angry Earth (Light) Spring 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To identify a range of sedimentary rocks ➤ To identify a range of igneous rocks ➤ To identify a range of metamorphic rocks ➤ To classify rocks according to their properties ➤ To explore soils and their properties ➤ To describe how fossils are formed ➤ To identify types of rocks around us 	<ul style="list-style-type: none"> ➤ To compare movement on a range of surfaces ➤ To identify north and south poles ➤ To know that magnets attract and repel ➤ To group and classify magnetic materials ➤ To make predictions ➤ To know how magnetism is used around us ➤ To identify types of force 	<ul style="list-style-type: none"> ➤ To investigate shadows ➤ To explain how shadows are formed ➤ To know that dark is the absence of light ➤ To investigate reflective surfaces ➤ To identify opaque, translucent and transparent objects. ➤ To classify objects
Links to National Curriculum	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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 eye. - 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
Prior Learning	Y2: Everyday materials	Y2: Squashing, twisting, bending, stretching	YN/YR: Seasons Y1: Seasonal change
Knowledge Threads			
Living Things and Habitats	Sand on the beach is full of small fragments of shell. Fossils. Links with Geography-volcanoes and earthquakes –rich soil, impact on where people live	The use of forces Extreme sports: pull of muscles in the body-free climbing	How daylight and night time affect animals; nocturnal animals. Length of days in winter and summer and its effect on animals and plants. Absence of light in plant growth. 24 hour light in Arctic Circle.
Materials	Grouping and classifying different rocks. Looking at layers within soil and rocks.	Links to weather and natural disasters: tornadoes, volcanoes, tsunamis	Dangers of light. Making Sunglasses. Objects that form shadows. Opaque, transparent, translucent

Forces & Sources	What things are made of different rocks? Make mud bricks.	What materials are magnetic. (comparing and grouping). How is magnetism used in the real world: (Maglev railway- invented in the UK https://www.youtube.com/watch?v=alwbrZ4knpg)	Reflection of light in straight lines. Light sources. The moon reflects light, sun emits light
Child Initiated	How forces are involved in creating the different types of rock. Fossils. What happens when rocks are rubbed together? (Erosion)	Friction of surfaces. Magnets attraction and repulsion.	Thinking and asking questions. How does light affect animals? When are shadows useful? (sun protection) Solar power

Topic / Term	Animal Kingdom (Animals, Including Humans) Summer 1	Please Help Me Mr Bee (Plants) Summer 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To explain why animals and humans need nutrition ➤ To know which living things can make their own food ➤ To identify skeletons of animals ➤ To understand the purpose of skeletons and muscles ➤ To observe living things as they change ➤ To classify animals and humans 	<ul style="list-style-type: none"> ➤ To identify the different parts of a plant ➤ To describe the function of different parts of a plant ➤ To investigate the needs of plants for growth ➤ To investigate how water is transported to plants ➤ To understand the importance of pollination ➤ I investigate seed dispersal ➤ To know the importance of seed dispersal
Links to National Curriculum	<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 - Identify that humans and some other animals have skeletons and muscles for support, protection and movement. 	<ul style="list-style-type: none"> - identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers - 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
Prior Learning	Yr1&2: Animals including humans Y22: Living things and their habitats	YN: Naming common plants YR: Planting and observing growth Y1: Plants, survival and classification

Knowledge Threads

Living Things and Habitats	Explore a variety of animals and their skeletons. Know right types of nutrition needed and how different animals get their food.	Identifying structure of flowering plants (disassemble a tulip). Food chains and plant life cycles. Photosynthesis on a simple scale. Looking for patterns of seed arrangements in fruit.
Materials	What materials help us to stay healthy and hygienic? Packaging-link to sustainability	Textiles and paper. Use of materials to support plant growth: glass and perspex – e.g. greenhouses in commercial production
Forces & Sources	Knowing the types of force that is needed to help move the muscles and skeleton bones in a certain way.	Climbing plants and the effects of gravity. Seed dispersal (wind) Precipitation. How water is transported in plants-celery
Child Initiated	What could be the benefit of an exoskeleton?	Thinking and asking questions. Why do different plants grow in different ways? What about carnivorous plants?

Vocabulary	<ul style="list-style-type: none"> - Rocks, soil, sedimentary, igneous, metamorphic, fossils, organic matter, sand, pebbles, permeable, impermeable, absorb, pressure, crystals, sandstone, granite, limestone, chalk, - Force, move, push, pull, magnet, magnetic, north pole, south pole, attract, repel, iron, steel, - Light, dark, reflect, reflection, sun, shadows, blocked, see, light source, opaque, transparent, translucent, solid - Nutrition, skeletons, muscles, exoskeleton, protection, backbone, survival, exercise, hygiene, adaptation, healthy, dietary, - Grow, plant, roots, stem, trunk, leaves, flower, seed, bulb, function, air, light, water, nutrients, soil, life, transported, life cycle, pollination, seed formation, seed dispersal, wind, animals, fertiliser, fruit, vegetable,
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Year 3 Scientific Skills

Planning	<ul style="list-style-type: none"> o Ask relevant questions and use different types of scientific enquiries to answer them o Set up simple practical enquiries, comparative and fair tests
Observing	<ul style="list-style-type: none"> o Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
Recording	<ul style="list-style-type: none"> o Gather, record, classify and present data in a variety of ways to help in answering questions o Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables o Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
Concluding	<ul style="list-style-type: none"> o Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions o Identify differences, similarities or changes related to simple scientific ideas and processes
Evaluating	<ul style="list-style-type: none"> o Use straightforward scientific evidence to answer questions or to support his/her findings

Year 4

Topic / Term	How Does It Work? (Electricity) Spring 2	How Does It Work? (Sound) Spring 2	Rainforests (Living Things & Their Habitats) Summer 1
Learning Intentions	<ul style="list-style-type: none"> ➤ To classify common household items ➤ To construct a simple circuit ➤ To identify and name parts of a circuit ➤ To investigate circuits ➤ To understand the function of a switch ➤ To identify conductors and insulators ➤ To research how electricity can be generated ➤ To construct a circuit for purpose 	<ul style="list-style-type: none"> ➤ To identify how sound is made ➤ To understand the purpose of sound vibrations ➤ To research how sound travels ➤ To investigate patterns in volume and vibrations ➤ To find patterns in pitch ➤ To research how sound is used 	<ul style="list-style-type: none"> ➤ To group animals in different ways ➤ To classify animals using keys ➤ To identify dangers in changing environments ➤ To research animal adaptation ➤ To investigate appropriate habitats ➤ To classify invertebrate and vertebrates
Links to National Curriculum	<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 	<ul style="list-style-type: none"> - 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 	<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
Prior Learning	Y3: Electromagnetism	Y1: Thunder-getting fainter	YR: Living things Y1: Classification/grouping knowledge Y2 & 3: Animals including humans
Knowledge Threads			
Living Things and Habitats	How have humans have harnessed nature to generate electricity (wind and water)? Naturally occurring electricity; lightning, electric eels. How the body uses electrical impulses to make muscles	How sound is used by animals to communicate and navigate. Dolphins and whales can communicate over long distances (link to sound travelling further in water	How animals have adapted to live on ice and in water and air.

	contract. Use the “human buzzer ball” to demonstrate that human bodies conduct electricity. Link to safe use of electrical appliances.	than in air). Bats navigating using echo location. What is an echo? Why does thunder appear to happen after lightning? Using our knowledge of the speed of sound how can we calculate the distance of a storm?	
Materials	Investigate conductors and insulators by completing a circuit to make a bulb light. Look at why we would need these materials and their everyday use.	Design a musical instrument. Make pan pipes from straws, xylophone from bottles of water; tune using a glockenspiel and then play a tune. Make a comb and paper harmonica.	Can you recreate an igloo using plastic bottles? What holds up the roof of an igloo?
Forces & Sources	Make a simple circuit board to make a quiz game where selecting the correct answer makes a bulb light.	Investigate what sound is. (cotton and coat hanger investigation). Drum and rice investigation, plastic cup and string “telephone”. Make an ear trumpet or whisper through flexi hose.	Why is it warm inside a house made of ice? Investigate greenhouses.
Child Initiated	What is electricity? Look at how electricity generates heat and how that is used in bulbs and heating elements. Look at the power of lightning.	Thinking and asking questions. Could we have an orchestra in space? What about under the sea?	Investigation of movement and force through terrarium project and minnow fishing. How does environment affect movement?

Topic / Term	Rainforests (Animals, Including Humans) Summer 1	We Need the Trees! (States of Matter) Summer 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To identify different teeth ➤ To describe the function of teeth ➤ To identify producers, predators and prey ➤ To construct and interpret food chains ➤ To identify parts of the digestive system ➤ To describe functions of parts in the digestive system 	<ul style="list-style-type: none"> ➤ To classify materials ➤ To identify solids, liquids and gas ➤ To observe changes when heated ➤ To observe changes when cooled ➤ To investigate evaporation and condensation ➤ To measure and research temperature that cause changes ➤ To research the water cycle
Links to National Curriculum	<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 	<ul style="list-style-type: none"> - 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
Prior Learning	Y1: Labelling basic human body parts Y2: Food groups and exercise Y3: Animals including humans	Y1: Everyday materials & Classification/grouping knowledge Y2: Everyday materials

Knowledge Threads

Living Things and Habitats	Different types of animals have different teeth according to their diet. Humans eat different food depending on where they live (link to health and nutrition). Recreating food chains and food webs (using the TT Ed game with picture cards and string).	How the rainforests drive the weather around the world; using knowledge and understanding of the water cycle to understand the process of changing matter that supports the sustainability of living things.
Materials	How much sugar is in common drinks? Display in bags. How much exercise would it take to burn off that amount of sugar? Links to obesity and processed food. You never see an overweight wild animal. Investigate human and animal skeletons.	Identify the changing states of materials through a variety of processes.
Forces & Sources	What materials are used to recreate the digestive system? Investigate the effect of different drinks on teeth using eggs immersed in different liquids and seeing the resulting effects on the shell.	Project: How to make a soft centred chocolate. Using the heat to melt chocolate and then allowing to solidify on cooling.
Child Initiated	How muscles work. Muscles only pull. Investigate the biting force of different animals-prediction. Forces exerted by the body to do simple exercises like skipping. How easy/ hard is it to break a bone?	Investigation: how force lowers the melting point of ice- how ice skates work and cotton thread through an ice cube experiment (using weights). Recreating the water cycle (getting fresh water from salt water investigation)

Vocabulary	<ul style="list-style-type: none"> - Appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, battery, sign, Insulators: wood, glass, plastic, paper rubber. Conductors: metal, water, graphite. Switch: open, closed - Vibrate, air, medium, hear, sound, volume, pitch, faint, string, percussion, woodwind, brass, insulate, sound wave, malleus, incus, stapes, ear drum, pinna - Human impact: Nature reserves, conservation, ecologically planned parks. Negative: population, development, litter deforestation - Vertebrates: fish, amphibians, reptiles, birds, mammals. Invertebrates: snails, slugs, worms, spiders, insects - Skelton, bones, muscles, joints, support, protection, movement, - Digestion: mouth tongue; mixes, tastes moistens, saliva, oesophagus, mastication, bolus, transports stomach acid, enzymes, intestines; compacts, colon, - Teeth: incisors; cutting, canines; ripping, molars; chewing, grinding, brush, floss, plaque - food chain; sun producers, prey, predators, carnivore, herbivore, omnivore - Heat, cool, cooled, degrees Celsius °C, thermometer, water cycle, evaporation, condensation, transportation, precipitation, temperature, melting, boiling, freezing, warm, cool, water, water vapour, solid, liquid, gas, solidify, melt evaporate, condense, container, changing state, force,
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Year 4 Scientific Skills

Planning	<ul style="list-style-type: none"> o Ask relevant questions and use different types of scientific enquiries to answer them
Observing	<ul style="list-style-type: none"> o Set up simple practical enquiries, comparative and fair tests (Year 4 focus) o Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
Recording	<ul style="list-style-type: none"> o Gather, record, classify and present data in a variety of ways to help in answering questions o Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
Concluding	<ul style="list-style-type: none"> o Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions o Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions o Identify differences, similarities or changes related to simple scientific ideas and processes
Evaluating	<ul style="list-style-type: none"> o Use straightforward scientific evidence to answer questions or to support his/her findings

Year 5

Topic / Term	Industrial Revolution (Forces) Autumn 2	Heavens Above (Earth and Space) Spring 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To investigate the force of gravity ➤ To explain the force of gravity ➤ To investigate the effects of air resistance ➤ To investigate the effects of water resistance ➤ To investigate friction on a range of surfaces ➤ To research a range of mechanisms ➤ To construct a moving mechanism 	<ul style="list-style-type: none"> ➤ To research the movement of planets ➤ To describe the movement of planets in relation to the sun ➤ To describe the movement of the moon in relation to Earth ➤ To identify and describe spherical bodies ➤ To explain reasons for day and night ➤ To understand the movement of the sun, moon and Earth ➤ To identify and describe the planets in the solar system
Links to National Curriculum	<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 	<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
Prior Learning	Y2: Squashing, twisting, bending, stretching Y3: Friction-surfaces Y4: States of Matter	Y1: Seasonal change Y3: Light and shadows
Knowledge Threads		
Living Things and Habitats	Swimming, running and flying – how do we overcome resistance? Football boots, running shoes, Formula One cars	Link to prior learning in year 1 around seasonal change and the movement of the Earth round the sun
Materials	Lifting and carrying – how did Vikings (and how can we) make our lives easier through pulleys, levers and reducing friction to drag things? How did this lead to cars? Oil used in the car engine to reduce friction between the moving parts	Could we live on another planet?
Forces & Sources	Gravity, sailing, wind – why didn't Vikings fly to England? Air force. Up thrust. Parachute Boat	Materials found on other planets. How do we protect ourselves from the ravages of space? Has the earth been hit by meteors?
Child Initiated	Thinking and asking questions.	Link to prior learning in year 1 around seasonal change
Topic / Term	What's in the Woodland Walk? (Animals, Including Humans) Summer 1	Hand Me Downs (Materials) Summer 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To identify a range of life cycles ➤ To compare and describe different life cycles ➤ To describe life process and reproduction in plants ➤ To describe life process and reproduction in animals 	<ul style="list-style-type: none"> ➤ To group and compare materials based on comparative fair tests ➤ To describe the properties of materials ➤ To know that some materials dissolve ➤ To research the recovery of a material

	<ul style="list-style-type: none"> ➤ To classify living things according to characteristics ➤ To explain and reason a variety of classifications 	<ul style="list-style-type: none"> ➤ To explain how to separate materials through processes ➤ To investigate reversible changes ➤ To investigate irreversible changes ➤ To research how states of matter affect the environment
Links to National Curriculum	<ul style="list-style-type: none"> - 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 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 - give reasons for classifying plants and animals based on specific characteristics 	<ul style="list-style-type: none"> - compare and group together everyday materials based on evidence from comparative and fair tests, 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
Prior Learning	<p>Y1: Classification of animals Y2: Animals and offspring Y3: Lifecycle of plants Y4: Deforestation and water cycle</p>	<p>Y2: Everyday materials Y3: Experiments with rocks and soils-sieving Y3: Magnetism Y4: Solids, liquids, gases Y4: Electricity-conductivity</p>

Knowledge Threads

Living Things and Habitats	How do the characteristics of animals and their life cycle effect where they live?	Climate change and global warming. How are the basic principles of chemistry – solids (plastic in the sea), liquids (palm oil), gases (carbon dioxide, methane) – and combinations of these – assisting or hurting our environment and habitats of particular animals?
Materials	How do animals including humans protect themselves: shells (snails, turtle), to exoskeletons (crab, cockroaches), sloughing hard skin (snake, tarantula) to wearing a cycle helmet (humans).	What happens when we... a series of investigations that looks more deeply at solutions, dissolving, heating and changing states of materials. If I was going to the Amazon rainforest / North Pole how would I keep my drink hot/ cold?
Forces & Sources	Why do different animals have protection in different ways?	Bend and stretch – why are some materials brittle (glass, plastic)? Some malleable (gold, lead)? How much force can be applied to something before it changes shape permanently – elastic vs plastic.

Child Initiated	Strong or weak? Birds fly, trees bend – how do animals and living things grow and develop to overcome or deal with the forces in their environments? (For example: wind, gravity, water pressure and water resistance)	Thinking and asking questions. Why does it do that? (exploring materials AND food items – what happens when we cook: Spaghetti: hard to soft? A cake mix: liquid to a solid)
Vocabulary	<ul style="list-style-type: none"> - Support, fall, Earth, gravity, air resistance, friction, balancing force, weight, newtons, resistance force, variables, fall, Earth, moving surfaces, accuracy, precision, causal relationships, mechanisms, levers, pulleys, transfers, gears, support/refute, water resistance - Earth, Sun, Moon, sphere, revolve, orbit, spin, rotate, axis, sunrise, sunset, north, south, east, west, solar system, planet, night, day - Life Cycles, reproduce, reproduction, stamen, stigma, sepal, petal, ovary, pollen, style, germinate, germination, fertilise, fertilisation, pollinate, pollination, disperse, dispersal, life cycle, babyhood, childhood, adolescence, adulthood, micro-organism, microbe, germ, virus, decay, mould, feed, grow, reproduce, bacteria - magnetic, hardness, transparency, flexibility and permeable, evaporate, evaporation, condense, condensation, change of state, state, solid, liquid, gas, melt, freeze, conditions, solidify, freezing, melting, gases, air, oxygen, carbon dioxide, helium, natural gas, carbon monoxide, - properties, material, - dissolve, dissolving, undissolved, solution, mixture, pure, separate, clear, cloudy, filter, reversible, irreversible, filtering, separating, burning, insoluble 	
Year 5 Scientific Skills		
Planning	o Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
Observing	o Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	
Recording	o Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs o Use test results to make predictions to set up further comparative and fair tests	
Concluding	o Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	
Evaluating	o Identify scientific evidence that has been used to support or refute ideas or arguments	

Year 6

Topic / Term	Slavery (Light) Autumn 2	World War 2 (Electricity) Spring 1
Learning Intentions	<ul style="list-style-type: none"> ➤ To explain the way that light travels ➤ To understand how light is seen ➤ To explain and reason why shadows are formed ➤ To explain the impact of light and living things ➤ To investigate reflective materials ➤ To research the light prism 	<ul style="list-style-type: none"> ➤ To investigate the effects of voltage ➤ To explain how electricity impacts our daily lives ➤ To compare variations of components functions ➤ To justify reasons with evidence ➤ To research instrumental scientists ➤ To construct a variable circuit
Links to National Curriculum	<ul style="list-style-type: none"> - Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into our eyes. - Explain that we see things because light travels from light sources to our eyes or from light sources to objects to our eyes. - Use the idea that light appears to travel in straight lines to explain why shadows have the same shape as the objects that cast them. - recognise that light appears to travel in straight lines 	<ul style="list-style-type: none"> - 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. - Used recognised symbols when representing a simple circuit in a diagram. Recognise that light appears to travel in straight lines.
Prior Learning	Y3: Light, Y4: Electricity, Y5: Sound travel vs light travel	Y3: Light, Y4: Electricity, Y5: Sound travel vs light travel
Knowledge Threads		
Living Things and Habitats	How does light effect living things including plants and animals?	How does electricity impact our daily lives?
Materials	How do different materials reflect light?	What materials and components are used to create electricity?
Forces & Sources	Do forces effect how a rainbow is created?	How can we use force to generate electricity? How do we use electricity to create forces?
Child Initiated	Thinking and asking questions. Why does a clear bottle not cast a shadow, but a bottle of water does?	What would our lives be like without electricity? Who invented electricity and when? Has electricity changed over time?
Topic / Term	Where did we come from? Summer 1	What's Cooking? (Living Things & their habitats) Summer 2
Learning Intentions	<ul style="list-style-type: none"> ➤ To identify how living things have changed over time ➤ To research the importance of fossils ➤ To compare offspring to their parents and reason their similarities ➤ To identify and explain how living things have adapted over time ➤ To identify and describe the forces of evolution and inheritance 	<ul style="list-style-type: none"> ➤ To describe why living things are classified in certain ways ➤ To reason why plants and animals are classified in certain ways ➤ To identify and name the parts of the human circulatory system ➤ To describe the functions of the circulatory system ➤ To explain the impact of a healthy lifestyle ➤ To describe what makes a healthy diet

		<ul style="list-style-type: none"> ➤ To identify and describe the way nutrients are transported ➤ To design a healthy meal based on human needs
Links to National Curriculum	<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 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. 	<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 micro-organisms, plants and animals - give reasons for classifying plants and animals based on specific characteristics. - 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.
Prior Learning	Y3: Fossils Y4: Adaptation	Y1: Labelling basic human body parts, Y2: Exercise and food Y4: Nutrition and digestive system

Knowledge Threads

Living Things and Habitats	How has evolution affected living things today, including you and your family?	How could you change your diet/exercise routine to improve your lifestyle? What is the lifestyle of an athlete like compared to you?
Materials	How has the use of materials changed as the world has change?	What materials can be used in the human body to keep us fit and fabulous? (hip replacement – metal)
Forces & Sources	What are the four forces that drive evolution and inheritance? (mutation, gene flow, genetic drift, natural selection) Link to X-Men.	How do forces help repair our body after injury/ (physiotherapy)? How do weights help keep us fit and fabulous?
Child Initiated	Thinking and asking questions. Why are only some trees deciduous? Is the ‘best’ way the only way?	Thinking and asking questions. Viruses and medical developments. What will happen in thirty years of scientific development?
Vocabulary	<ul style="list-style-type: none"> - Light, travels, straight, reflect, reflection, light sources, object, shadows, mirrors, periscope, rainbow, filters - Buzzer, battery, light, lamp, bulb, voltage, switch, circuit, open, closed, series circuit, electrical safety, technology, symbols, motor, volume, brightness - fossils, offspring, vary, characteristics, variations, evolution, adaption, inheritance, Charles Darwin, Alfred Wallace, environment, advantageous, disadvantageous - Internal organs, heart, lungs, liver, kidneys, brain, skeletal, muscular, digest, blood vessels, blood, diet, exercise, drugs, nutrients, impact 	

Year 6 Scientific Skills

Planning	o Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary
Observing	o Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Recording	o Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Concluding	o Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
Evaluating	<ul style="list-style-type: none"> o Use test results to make predictions to set up further comparative and fair tests o Describe and evaluate their own and other people’s scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources o Group and classify things and recognise patterns