

KNOWLEDGE THEMES:

WORKING SCIENTIFICALLY

MATERIALS AND MATTER

ANIMALS INCLUDING HUMANS

LIVING THINGS AND HABITATS

PLANTS

EARTH & SPACE/ SEASONAL CHANGES

FORCES

LIGHT & SOUND

ELECTRICITY

EVOLUTION AND INHERITANCE

ROCKS

EARLY LEARNING GOALS

The Natural World.

Pupils should be taught to:

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

At Old Basford School we use Development Matters, Birth to Five Matters and the Early Learning Goals as guidance to support the carefully planned curriculum we have designed and created especially for the children in our school community. These documents provide an overview of how children learn and develop and they guide our team to make informed decisions based on what each individual child needs to learn and be able to do next.

Understanding the World (Summary of Statutory Educational Programme)

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

Continuous Provision

In continuous provision, children will: have the opportunity to explore different environments and habitats through small world play and looking at a range of books. They will have access to a range of scientific resources and natural resources. They will be given opportunities to explore their immediate environment both inside and outdoors. They will be encouraged to make healthy choices in the unit at snack time and through physical learning in the outdoor environment. They will have opportunities to explore how things work through areas such as sand and water play, exploring forces and capacity.

Focused Learning

Understanding the World

Science / Geography / History / RE	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery Skills N1				To use their senses to explore a range of natural materials and compare.	To explore how different things work.	Explore and talk about forces they can feel.
N2	To be able to talk about their body parts and what the function is of each part. To be able to identify similarities and differences between themselves and peers.			Talk about the life cycle of a plant and animals.	To plant their own seeds and understand how to care for them. Talk about the life cycle of a plant and animals.	
Reception Skills	To know about family structures and be able to talk about who is part of their family. To name and describe people familiar to them.			To be able to categorise animals by their characteristics.		To explore through books and exploration, that every living being has a life cycle and they change in shape and size as they grow.

		To be able to observe and discuss similarities and differences in ourselves and how we look.					
Nursery Knowledge							To understand forces through water exploration and vehicle play.
N1							
N2		To understand basic hygiene routines and manage toileting and self-care. To use vocabulary to describe themselves, their family and peers.			To know and understand that all living creatures start life as a baby and grow into adulthood.	To know the key things a plant needs to be able to grow. To understand that all living things have a life cycle.	
Reception Knowledge		To understand why they are important and talk about themselves and their family with others. To understand and use vocabulary to describe themselves and others. To understand and discuss similarities and differences in ourselves and how we look.	To understand the effect of changing seasons.	To understand the environmental changes at this time of the year. To understand that effect of changing seasons.	To know the different groups of animals. To understand that effect of changing seasons.		To know that every living being has a life cycle and they change in shape and size as they grow. To understand that effect of changing seasons.
Key Vocabulary	Tier 1: S: Scientific	S: day, night, grow, change	S: day, night, light, dark	S: day, night, light, dark, moon, sun	S: grow, change,		S: day, night, light, sun, hot, cold, hard, soft, grow, change, seeds, egg, pond, garden,
	Tier 2: S: Scientific	S: healthy, non-healthy, germs, teeth, dentist, doctor	S: Autumn, Spring, Summer, Winter, season, lighter, darker, shadow	S: Autumn, Spring, Summer, Winter, season, lighter, darker, frozen	S: woodland	S: wood, plastic, glass, metal, paper, rough, smooth, shiny	S: Autumn, Spring, Summer, Winter, season, plant, leaf, stem, roots, bulb, shoot, life cycle, caterpillar, woodland, butterfly
	Tier 3: S: Scientific				S: carnivore, omnivore, herbivore, amphibian, reptile, mammal, camouflaged, survival, habitat, microhabitat	S: materials	S: deciduous, evergreen, amphibian, camouflaged, survival, chrysalis, habitat, microhabitat

YEAR 1

AUT 1: SUPER ME	AUT 2: THE NIGHT ADVENTURE	SPR 1: TOY STORY	SPR 2: KNIGHTS OF BASFORD	SUM 1: GROW YOUR OWN	SUMMER 2: AROUND THE WORLD
<u>EVERYDAY MATERIALS</u> *Distinguish between object & material it is made of *Identify everyday materials *Describe simple physical properties of materials *Compare / group materials by physical properties <u>ANIMALS INCLUDING HUMANS</u> *Identify, name, draw and label the basic parts of the human body, link to senses	<u>ANIMALS INCLUDING HUMANS</u> *Identify and name (birds, fish, amphibians, reptiles, mammals), *describe & compare structure of animals *Identify carnivores, herbivores, omnivores	<u>EVERYDAY MATERIALS</u> *Distinguish between object & material it is made of *Identify everyday materials *Describe simple physical properties of materials *Compare / group materials by physical properties		<u>PLANTS</u> *Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees *Identify and describe the basic structure of a variety of common flowering plants, including trees	<u>ANIMALS INCLUDING HUMANS</u> *Identify and name (birds, fish, amphibians, reptiles, mammals), *describe & compare structure of animals *Identify carnivores, herbivores, omnivores
<u>SEASONAL CHANGES</u> *Observe changes across seasons <div style="text-align: right;">➔</div>					

*Observe & describe weather / day length changes with seasons

PLAN

*Ask simple questions and recognising that they can be answered in different ways

DO

*Observe closely, using simple equipment

Perform simple tests

*Identify and classify

RECORD

*Gather and record data to help in answering questions

REVIEW

*Use their observations and ideas to suggest answers to questions

YEAR 2

AUT 1: INTO THE WOODS	AUT 2: BLAST OFF!	SPR 1: ON SAFARI	SPR 2: MARVELLOUS MEDICINE	SUM 1: LIGHTHOUSE KEEPER	SUMMER 2: FUN OUTDOORS
<p>PLANTS</p> <p>*Observe & describe growth from seed/bulb *Requirements for growth (water, light & suitable temperature)</p> <p>LIVING THINGS & HABITATS</p> <p>*identify and name a variety of plants and animals in their habitats,</p>	<p>ANIMALS INCLUDING HUMANS</p> <p>*Explain basic needs for survival (water, food & air) (SEE SPACE SCIENCE DOCUMENT)</p>	<p>LIVING THINGS & HABITATS</p> <p>*Explore and compare difference between living, dead & non living</p> <p>* 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/ plants</p> <p>*identify and name a variety of plants and animals in their habitats</p> <p>*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.</p>	<p>ANIMALS INCLUDING HUMANS</p> <p>*Understand that animals, including humans, have offspring that turn into adults</p> <p>*Describe the importance of humans need exercise / nutrition / hygiene</p>	<p>ANIMALS INCLUDING HUMANS</p> <p>*Describe the importance of humans need exercise / nutrition / hygiene</p>	<p>USES OF EVERYDAY MATERIALS</p> <p>*Identify/compare suitability of everyday materials</p> <p>*Find out how shapes of solids can be changed by squashing, bending, twisting & stretching</p> <p>LIVING THINGS & HABITATS</p> <p>*identify and name a variety of plants and animals in their habitats, including micro-habitats(school pond)</p>

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YEAR 3

AUT 1: STONE AGE TO IRON AGE	AUT 2: EXTREME EARTH	SPR 1: WHAT MAKES BRITIAN GREAT	SPR 2: SUPER SCIENCE	SUM 1: IT'S A WONDERFUL LIFE	SUMMER 2: ANCIENT EGYPT
<p>(see STONE AGE SCIENCE)</p>	<p>ROCKS</p> <p>*compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>*describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>*recognise that soils are made from rocks and organic matter.</p>		<p>LIGHT</p> <p>*recognise that they need light in order to see things and that dark is the absence of light</p> <p>*notice that light is reflected from surfaces</p> <p>*recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p>	<p>PLANTS</p> <p>*identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>*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</p>	<p>(see EGYPTIANS SCIENCE)</p>

			<p>*recognise that shadows are formed when the light from a light source is blocked by a solid object</p> <p>*find patterns in the way that the size of shadows change.</p> <p>FORCES & MAGNETS</p> <p>*compare how things move on different surfaces</p> <p>*notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>*observe how magnets attract or repel each other and attract some materials and not others</p> <p>*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</p> <p>*describe magnets as having two poles</p> <p>*predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>*investigate the way in which water is transported within plants</p> <p>*explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>ANIMALS INCLUDING HUMANS</p> <p>*identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <p>*identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	
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PLAN

- *Ask relevant questions and using different types of scientific enquiries to answer them.
- *Set up simple practical enquiries, comparative and fair tests

DO

- *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers.

RECORD

- *Gather, record, classify and present data in a variety of ways to help in answering questions.
- *Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.

REVIEW

- *Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- *Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- *Identify differences, similarities or changes related to simple scientific ideas and processes.
- *Use straightforward scientific evidence to answer questions or to support their findings.

YEAR 4

AUT 1: FLASHES AND BANGS	AUT 2: RAMPAGING ROMANS	SPR 1: TEETH TO THE TOILET	SPR 2: INVADERS & SETTLERS	SUMMER 2: RUMBLE IN THE JUNGLE	SUM 1: VIVA ESPAGNA
<p>SOUND</p> <p>*identify how sounds are made, associating some of them with something vibrating</p> <p>*recognise that vibrations from sounds travel through a medium to the ear</p> <p>*find patterns between the pitch of a sound and features of the object that produced it</p> <p>*find patterns between the volume of a sound and the strength of the vibrations that produced it</p>	(SEE ROMANS SCIENCE)	<p>ANIMALS INCLUDING HUMANS</p> <p>*describe the simple functions of the basic parts of the digestive system in humans</p> <p>*identify the different types of teeth in humans and their simple functions</p> <p>*construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	(SEE VIKINGS SCIENCE)	<p>LIVING THINGS AND HABITATS</p> <p>*recognise that living things can be grouped in a variety of ways</p> <p>*explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>*recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>MATTER</p>	

<p>*recognise that sounds get fainter as the distance from the sound source increases.</p> <p>ELECTRICITY</p> <p>*identify common appliances that run on electricity</p> <p>*construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>*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</p> <p>*recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>*recognise some common conductors and insulators, and associate metals with being good conductors.</p>				<p>*compare and group materials together, according to whether they are solids, liquids or gases</p> <p>*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)</p> <p>*identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	
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*Use straightforward scientific evidence to answer questions or to support their findings.

YEAR 5					
AUT 1: BASFORD & BULWELL BYGONES	AUT 2: SPACE	SPR 1: SAVE OUR PLANET	SPR 2: ANCIENT GREECE	SUM 1: CURIOUS ABOUT THE CLIMATE	SUMMER 2: CIRCLE OF LIFE
	<p>EARTH & SPACE</p> <p>*describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>*describe the movement of the Moon relative to the Earth</p> <p>describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>*use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p>FORCES</p> <p>*explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>*identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>*recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p>(SEE GREECE SCIENCE)</p>	<p>MATERIALS</p> <p>*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</p> <p>*know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>*use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>*give reasons, based on evidence from comparative and fair tests, for</p>	<p>LIVING THINGS AND HABITATS</p> <p>*describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>*describe the life process of reproduction in some plants and animals.</p> <p>ANIMALS INCLUDING HUMANS</p> <p>*describe the changes as humans develop to old age.</p>

				<p>the particular uses of everyday materials, including metals, wood and plastic</p> <p>*demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>*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.</p>	
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PLAN

*Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

DO

*Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

RECORD

Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

REVIEW

*Use test results to make predictions to set up further comparative and fair tests.

*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.

*Identify scientific evidence that has been used to support or refute ideas or arguments.

YEAR 6

AUT 1: CASTAWAY	AUT 2: BEATS & BREATHS	SPRING 1: WORLD WAR II	SPRING 2: MAYAN MYSTERIES	SUMMER 1: SURVIVAL OF THE FITTEST	SUMMER 2: TASTE OF THE CARIBBEAN
<p><u>LIVING THINGS AND HABITATS</u></p> <p>*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</p> <p>*give reasons for classifying plants and animals based on specific characteristics.</p>	<p><u>ANIMALS INCLUDING HUMANS</u></p> <p>*identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>*recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>*describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>(SEE WWII science)</p>	<p>(SEE MAYA SCIENCE)</p> <p><u>LIGHT & ELECTRICITY (BLOCK)</u></p> <p><u>LIGHT</u></p> <p>*recognise that light appears to travel in straight lines</p> <p>*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</p> <p>*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</p> <p>*use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p><u>ELECTRICITY</u></p> <p>*associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>*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</p>	<p><u>EVOLUTION AND INHERITANCE</u></p> <p>*recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>*recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>*identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	

			*use recognised symbols when representing a simple circuit in a diagram.		
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*Identify scientific evidence that has been used to support or refute ideas or arguments.