Freegrounds Infant School - Our Curriculum

What aa we trying to achieve?

Our Vision	We encourage our children to develop confidence, a sense of identify and lead safe, healthy and fulfilling lives.		We want our children to grow into responsible citizens who make a positive contribution to local, national and global communities.		We enable our children to develop skills, knowledge, understanding and enjoyment that sustain a lifetime of successful learning.		
Our Aims	Working in close collaboration with each other, parents and other agencies, schools and the wider community.	Enabling or encouraging everyone to become confident to pursue their own interests, brave to take risks and independent and motivated to learn.	Creating a culture of inclusion and respect.	Valuing the ideas and celebrating the achievement, successes and individuality of everyone.	Creating an exciting, stimulating resource rich environment which supports learning through interactive displays and use of technology.	Providing high quality teaching and learning, first hand experiences, high levels of collaboration, challenge and support.	Building on previous learning, teaching key skills and creating opportunities to explore and be curious.
Our Values	Independence		Respect	Teamwork	Thinking	Engagement	Motivation

How do we implement this?

Our teaching intentions	Carefully planned, rich connected learning journey.	Teaching models respect pupil uniqueness, challenges prejudice and promotes social justice.	Parents and carers are supported and challenges to play a role in their child's learning.	Approaches to learning are sensitive to the needs of all learners and their self-esteem especially the vulnerable.	Classroom environment inspires and motivates all children.	
Effective teaching	Teachers have a deep learning of subjects to be taught.	Teachers have a clear understanding of cognition and learning..	All adults have high expectations and provide challenge for all, with support when necessary.	Teaches employ skilful and effective questioning to check and deepen understanding.	Teachers use a range of flexible and responsive strategies.	
Assessment for learning	Effective use of summative assessment to inform steps.	Oral and written feedback that has immediate impact.	Purposeful internal and external moderation to inform professional discussions.	Clear learning intentions and success criteria are shared with children and understood by all.		

Organisation	Units of work are based on key questions and cross-curriculum themes.	Stimulating indoor and outdoor learning environments. .	Daily routines and a range of enrichment experiences	Use children's own ideas and interests to shape learning.	Partnerships with other schools and the local community.	Hook that engages the children and gives the context for the learning.	A clear outcome which gives purpose to the learning.				
EYFS and National Curriculum	Personal & Social Development (PSED)	Physical Development (PD)	Communication and Language	Literacy	Mathematics	Understanding of the World				Expressive Arts and Design (EAD)	
	PSHE	PE	English		Mathematics	Science	RE	History	Geography	Computing	Art and Design	Design Technology	Music

What is the impact?

An inclusive curriculum for all	An inspiring and challenging curriculum for all.	Teaching that is consistently good or better for all pupil groups.	High levels of attainment and progress.	Positive climate for learners in all classrooms.	Children who are fluent in the language of learning.
Evaluation	Memorable connections Does the learning make links with prior and current learning within the subject and across the curriculum? Does learning excite to create memorable moments?	Is an enquiry based approach to learning journeys used in all subjects? Does the task or topic promote deeper thinking? Do children have choices at different points of the learning process? Do children reflect on their learning and generate new thinking?	Equity and enrichment Are there high expectations for all? Is there equity are all children able to access the learning? Do all children experience the whole curriculum? Are all year group leaders ensuring there is consistency in the curriculum across the year groups?	High quality outcomes and challenge for all? Do all adults have high expectations of all children at all times? Are there clear assessment criteria linked to the development of knowledge and skills? Has the learning journey spread to a purposeful outcome or product? Are children challenged to think and evaluate their learning? Are the children shown examples of the best outcomes to help and inspire them to achieve?	Is each subject area given integrity and taught well? Are children able to relate their values and experiences to British values? Is there a cohesive, entire planned curriculum across the school? Does the curriculum facilitate unlimited possibilities for rehearsing and honing English, Maths and Computing skills?

EYFS Science Key knowledge & working Scientifically Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Communication and Language	Learn new vocabulary Asks questions to find out more Use new vocabulary in different contexts		Articulating thoughts and ideas in well-formed sentences. Describes events in some detail. Use talk to help work out problems and organise thinking and activities, and to explain how things work and they might happen.		Make comments about what they have heard and ask questions to clarify their understanding.	
Personal, Social and Emotional Development	• Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating		• Know and talk about the different factors that support their overall health and wellbeing: - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine being a safe pedestrian		Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	
Understanding the World	Explore the natural world around them. Describe what they see, hear and feel while they are outside.		Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them.		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.	

Key Stage 1 Year 1 Science Key knowledge & working Scientifically Overview

Term **Topic** **Science key knowledge**	**Year 1 Term 1** New Beginnings, Let it Shine, Magic of toys		**Year 1 Term 2** What big eyes you've got!, Pets/Animals, Under the sea/minibeasts		**Year 1 Term 3** Through the keyhole!, Fire Fire!, Let it grow!	
	Describing Materials	Working scientifically	Animal Survival Habitats	Working scientifically	Seasons Plants	Working scientifically
Identify and **name** a variety of **common wild and garden plants**, including deciduous and evergreen trees			Wellie walks using identification sheets	observing closely, using simple equipment	Wellie walks using identification sheets- link to seasonal change	-asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment
Identify and **describe** the **basic structure** of a variety **of common** flowering **plants**, including trees.					Labelling plants Plant investigation	observing closely, using simple equipment perform simple test using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions
Identify and **name** a variety of **common animals** including fish, amphibians, reptiles, birds and mammals			Animal sorting	Identifying and classifying		
Identify and **name** a variety of common animals that are **carnivores**, **herbivores** and **omnivores**			'Do all animals eat the same food?' investigation Sorting activity	Observe closely gathering and recording data to help in answering questions		
Describe and **compare** the **structure** of a variety **of common animal**s (fish, amphibians, reptiles, birds and mammals, including pets)			Compare different types of animals	Observing closely Identifying and classifying		
Identify, **name**, **draw** and **label** the **basic parts** of the **human body** and say which part of the body is associated with each sense.			Explore senses using the outside world to label senses on the body.	Performing simple tests using their observations and ideas to suggest answers to questions		-asking simple questions and recognising that they can be answered in different ways

			'Which sense is the most accurate at identifying food?' investigation			
Distinguish between an **object** and the **material** from which it is made	Materials game to separate object from material.	identifying and classifying				
Identify and **name** a variety of **everyday materials**, including wood, plastic, glass, metal, water, and rock	Describe and identify objects made from different materials.	observing closely, using simple equipment identifying and classifying				
Describe the simple **physical properties of** a variety of everyday **materials**	Property chain Materials investigations	-asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions				
Compare and **group** together a variety of **everyday materials** on the basis of their simple physical properties.	Hoops/ venn diagram to compare materials	observing closely, using simple equipment identifying and classifying				
Observe changes across the four **seasons**					Draw and label trees Seasonal change investigation	-asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests
Observe and describe weather associated with the seasons and how day length varies.					Weather observations	observing closely, using simple equipment

Key Stage 1 Year 2 Science Key knowledge & working Scientifically Overview

Term **Topic** **Science key knowledge**	**Year 2 Term 1** Reach for the stars, Transport		**Year 2 Term 2** Around the world, Unsinkable		**Year 2 Term 3** Bees, seeds and enormous trees, Brilliant Brazil	
	Pushes and Pulls	Working Scientifically	Changing materials	Working Scientifically	Plants Animal life cycles	Working Scientifically
Explore and **compare** the **differences** between things that are **living**, **dead**, and things that **have never been alive.**					Discuss and compare pictures of owls (or other animals linked to NFWP)	Identifying and classifying
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					Create a suitable habitat for an animal- labelling how the habitat is providing for the animals basic needs.	Identifying and classifying
Identify and **name** a variety of **plants and animals** in their **habitats**, including microhabitats					Data gathering on numbers of animals/ plants seen in the schools grounds habitats- note possible lack of animals/ plants why? Link to suitable habitats	Gathering and recording data to help in answering questions. Observing closely, using simple equipment Asking simple questions and recognising that they can be answered in different ways
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**.					Draw a simple food chain of local known animals labelling producer and consumer.	Identifying and classifying

Observe and **describe** how **seeds** and **bulbs grow** into mature plants					Experiment- seed planting describing observations	Using their observations and ideas to suggest answers to questions Performing simple tests
Find out and **describe** how plants **need water**, **light** and a suitable **temperature** to grow and stay healthy.					Experiment- changing the environment (led by chn's previous knowledge)	Asking simple questions and recognising that they can be answered in different ways Using their observations and ideas to suggest answers to questions Performing simple tests
Notice that **animals**, including humans, **have offspring** which grow into adults					Life cycles of familiar animals	Identifying and classifying
Find out about and **describe** the **basic needs** of **animals**, including humans, for survival (water, food and air)					Create a suitable habitat for an animal- labelling how the habitat is providing for the animals basic needs. Data gathering on numbers of animals/ plants seen in the schools grounds habitats	Gathering and recording data to help in answering questions. Observing closely, using simple equipment Asking simple questions and recognising that they can be answered in different ways
Describe the **importance** for humans of **exercise**, eating the right amounts of different types of **food**, and **hygiene**.					Investigate then create a healthy food plate for Usain Bolt Exercise investigation	Identifying and classifying Using their observations and ideas to suggest answers to questions Performing simple tests
Identify and **compare** the **suitability** of a variety **of** everyday **materials**, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses			Discuss materials and their uses Experiment suitability of materials as floatation devices.	Identifying and classifying Using their observations and ideas to suggest answers to questions Performing simple tests		
Find out **how** the **shapes** of solid objects made from some materials **can be changed** by squashing, bending, twisting and stretching.	Investigate solid objects moving down a slope	Using their observations and ideas to suggest answers to questions Performing simple tests	Experiment in groups using different forces on different materials	Using their observations and ideas to suggest answers to questions Performing simple tests		

Key Stage 1 Year 1 Language Overview: Science

Term	Year 1 Term 1 **New Beginnings, Fire Fire!, The Magic of Toys**	Year 1 Term 2 **Through the Keyhole, What big eyes you've got! Under the sea/minibeasts**		Year 1 Term 3 **Fire Fire! Let it grow!**	
Topic	**Describing Materials**	**Animal Survival**	**Habitats**	**Seasons**	**Plants**
Previously learnt key knowledge vocabulary - Tier 1	Wood, Plastic, Glass, Metal, Water, Rock, Brick, Paper, ,card/cardboard,	pets wild animals	Herbivore, omnivore, carnivore, reptile, mammal, bird, fish, amphibians, beak, fur, feathers, fin, scales, skin, wing, claw, tail, names of common animals, taste, touch, smell, see, hear, senses, hands, back, shoulders, chest, waist, hips, leg, ankle, nails, fingers, toes, feet, tongue, teeth, mouth, hair, nose, eyes, ears, face, knees, legs, elbow, arm, head, body, survive, water, light	day, trees, leaves, food, sun, red, brown, green cold, dark, season, sleep, daylight, night, weather, wind, cloud, rain, cold, warm, bright, flowers garden, birds, bird feeder	Leaf, grow, trunk, branches, daisy, grass, Plant, Leaf, Water Soil
Previously learnt working scientifically vocabulary - Tier 1	Question	Question	observe, identify, sort	changes, question,	Find out
Taught during the key knowledge topic - Tier 2	Object, material, Fabrics, Elastic, Foil, Rubber, Wool, Clay, soil, Hard, Soft, Stretchy, Stiff, bendy/floppy Rough, Smooth, Shiny, Dull, see through, not see through, waterproof/not waterproof	Herbivore, omnivore, carnivore, reptile, mammal, bird, fish, amphibians, beak, fur, feathers, fin, scales, skin, wing, claw, tail, names of common animals, taste, touch, smell, see, hear, senses, hands, back, shoulders, chest, waist, hips, leg, ankle, nails, fingers, toes, feet, tongue, teeth, mouth, hair, nose, eyes, ears, face, knees, legs, elbow, arm, head, body, survive	Wild plants, ferns, daisies, nettles, dandelions, garden plants, roses, tulips, poppies, daffodils, habitats, adapted, living things,	Autumn, season, berries, nuts, seeds, fruits, acorns, conkers, Bird feeder, Winter, freezing, ice, snow, hail, shorter days, bare trees, hours, temperature, Earth, moon, longer days, new life, showers, summer, June, July, August, bees, year, evenings, deciduous, evergreen, habitats	Evergreen, deciduous, oak, silver birch, sycamore, fir, conifer, hawthorn, beech, holly, bark, roots, blossom, ivy hawthorn bramble bulb, seed Seedling Shoot, Petal, Roots,
Taught during working scientifically -Tier 2	investigate, find out, test,	Same, different, compare, explain, sort, group, observe, identify	observe, identify, sort, equipment, record	most popular, prediction, differences, information, record, different, measure, observe,	Same, different, compare, name, observe
Deeper Learning key knowledge vocabulary - Tier 3	Translucent, absorbent, opaque,	Wrist, trunk, thigh, calf, predator, Prey, food chain	variation	Data, horse chestnut deciduous, evergreen, hibernate, transition	Living, alive, dead, Compost
Deeper Learning working scientifically vocabulary - Tier 3	answer	Classify, identify,	Classify, identify	change, same (fair test), data,	Classify, identify,

Key Stage 1 Year 2 Language Overview: Science

Term	Year 2 Term 1 **Reach for the Stars, Transport**	Year 2 Term 2 **Around the world, Unsinkable**	Year 2 Term 3 **Bees, seeds and enormous trees, Brilliant Brazil**	
Topic	**Pushes and Pulls**	**Everyday materials**	**Plants**	**Animal Life Cycles (Animals and Living things and their habitats)**
Previously learnt key knowledge vocabulary - Tier 1	Rolling, crawling, walking, jumping, running, hopping, skipping, climbing, bounce, push, pull, materials, properties	Object, material, Fabrics, Elastic, Foil, Rubber, Wool, Clay, soil, Hard, Soft, Stretchy, Stiff, bendy/floppy Rough, Smooth, Shiny, Dull, see through, not see through, waterproof/not waterproof, rock, paper, cardboard, wood, metal, plastic, glass, brick	Growth, Evergreen, deciduous, oak, silver birch, sycamore, fir, conifer, hawthorn, beech, holly, bark, roots, blossom, ivy hawthorn bramble bulb, seed Seedling Shoot, Petal, Roots,	Water, food, habitats, Herbivore, omnivore, carnivore, reptile, mammal, bird, fish amphibians, beak, fur, feathers, fin, scales, skin wing, claw, tail, names of common animals, survive, baby, child, adult, grow, taste, touch, smell, see, hear, senses, hands, back, shoulders, chest, waist, hips, leg, ankle, nails, fingers, toes, feet, tongue, teeth, mouth, hair, nose, eyes, ears, face, knees, legs, elbow, arm, head, body, food chain, exercise, river, seasons, trees, grass, pond, river
Previously learnt working scientifically vocabulary - Tier 1	Investigate, describe, find out, same, different	investigate, find out, test,	Same, different, compare, name, find out	investigate, find out, test, measure, count same, different, look, describe.
Taught during the key knowledge topic - Tier 2	Motion, physical force, pushing, pulling, slow down, speed up, direction, steep, slope, elastic,	Cars, twisting, squashing, bending, matches, cans, spoons,	seeds, bulbs, temperature, roots, stem, leaf, flower, measure, diagram, life cycle, life process,	Nutrients, healthy food plate, protein, carbohydrates, fruit and vegetables, dairy, fats and sugars, examples of foods, heart, heart rate, muscles, germs, washing, transfer, air, shelter, micro-habitats, food, sea shore, woodland, ocean, conditions, damp, shade, micro-habitats, food, food chain, leaf litter, shelter, living, dead, never alive, micro-habitats, food chain, predator, prey, producer, consumer, leaf litter, shelter, sea shore, woodland, ocean, rainforest, conditions, desert, damp, shade, lifecycle, age, size, reproduce, parents, grandparents Local plants and animals
Taught during working scientifically - Tier 2	Observe, record	Observe, test, classify, predict	Observe, compare, record, predict, measure,	Observe, compare, explain, record, predict, measure Test, same, different (fair test), results, predict, conclusion.
Deeper Learning key knowledge vocabulary - Tier 3	forces	Forces	germinate, grain	Environment, human impact, nature reserves, Pulse, oxygen.
Deeper Learning working scientifically vocabulary - Tier 3	Data, fair testing	Data, fair testing	comparative tests,	Data, fair testing

EYFS & Key Stage 1 Working Scientifically Progression

Year	EYFS	Year 1	Year 2
Questioning	Ask simple questions about the world around us Respond to questions about how to find things out	Ask how, why, what will happen if	Ask relevant questions linked to the topic Ask a wider variety of questions
Observing, measuring, pattern seeking	Talk about what is the same and different Observe more than 1 feature Observe a change Use non standard measures	Make observations and comparisons using their senses Observe and describe changes over time Say what I am looking for and what I am measuring Begin to notice patterns Talk about what they see Begin to use standard measurements Realise that their observations have a purpose - to answer the original question Use simple equipment	Plan what measurements to take Observe, describe and explain changes over time Notice patterns Explain how their observations link to their investigation Use equipment effectively to support investigation Use simple equipment to measure volume, time, distance use standard measurements
Predicting	Say what they think what might happen	Think about what might happen before deciding what to do Predict what might happen based on personal experiences	Think about what might happen before deciding what to do Predict what might happen based on personal experiences
Investigating	Make suggestions about what to do Carry out given instructions Show an awareness of treating things in the same way Make own suggestions about how to find the answer Talk about how they will find the answer	Make their own suggestions about how to find things out Suggest how to collect evidence to answer questions and begin to appreciate why this is important Talk about what they want to find out Talk about how they will find the answer Plan what they want to do Plan what they want to record Show an awareness of fair testing Use simple tests to find information Recognise hazards	Suggest own ideas for an investigation Sequence ideas in a sensible order Talk about what information they need to gather
Recording and reporting	Speech Drawings Labelled pictures Lists Teacher models recording in a table	Talk about what they have seen/done Labelled drawings Pictograms Use a 2 column table to record results Use measurements in tables with support	Make own simple table of results Use measurements in tables Labelled drawings Transfer information from a table to a bar chart Explanation statements
Identifying, grouping and classifying	Use appropriate Scientific vocabulary Sort using given criteria Begin to sort using own criteria	Use appropriate Scientific vocabulary Sort, group and classify using their own criteria Use Venn diagrams to record sorting Explain how they have sorted the objects	Use appropriate Scientific vocabulary Sort, group and classify using their own criteria using Carroll diagrams Explain why an object belongs to a particular set
Conclusions	Describe and show what they did Say what happened Respond to questions from the adult	Make comparisons between their results and observations Rank results in order Say if their prediction about what might happen was correct Compare what did happen with what they thought would happen and give a simple reason Suggest how an investigation could be improved with support	Explain what they have found out Give a cause and effect explanation Begin to identity simple patterns Explain why their prediction was/wasn't correct Compare what did happen with what they thought would happen and give a explanation Suggest how the investigation could be improved
Research	Knows that information can be gained from different sources	Searches for information with support using internet, 'experts', books	Searches for information independently using internet, 'experts', books

Understanding	Know that an activity relates to everyday life Begin to recognise when things might be dangerous	Appreciates that Science can be useful in our daily lives I can describe, in familiar contexts, how science helps people do things I can express personal feelings or opinions about scientific or technological phenomena Am beginning to understand that Science can sometimes be dangerous Begin to identify potential hazards	I can name some everyday things that Science has helped to develop I can identify aspects of our lives, or of the work that people do, which are based on scientific ideas Identify aspects of science used within particular jobs or roles Identifies how Science can sometimes be dangerous Identify potential hazards and overcome them with support

An inspiring and challenging curriculum for all.	Children who are fluent in the language of learning.

CURRICULUM INTENT

Subject Name: Science

At Freegrounds Infant School we provide a science curriculum which is accessible for all children. We strongly believe that high-quality science lessons inspire children to be curious about the world around them as well as allowing them to develop skills to work scientifically. This in turn motivates them to learn, think and act as scientists.

Our curriculum design allows children to develop their subject knowledge, skills and understanding whilst promoting their spiritual, moral, social, cultural and mental development which prepares them for future opportunities and experiences. We provide our children with opportunities for them to learn about British Values, their rights and responsibilities and appreciate what it means to be a member of a diverse society with an age appropriate understanding of the protected characteristics. For example, through using diverse representations, images, positive role models and promoting discussion.

At Freegrounds Infant School we link learning through a range of topics, which give children the essential characteristics to help them to become scientists. Through careful planning our children have the opportunities to develop a sense of curiosity about science and how to observe, gather, identify and describe a range of scientific concepts.

We aim to increase and develop children's scientific skills, thinking and attitudes by immersing them in scientific learning through first hand experiences of experiments, observations and active learning. We plan purposeful outcomes which enable children the chance to show what they have learnt.

Teaching that is consistently good or better for all pupil groups.	High levels of attainment and progress.

CURRICULUM IMPLEMENTATION

Subject Name: Science

At Freegrounds Infant School we ensure high standards of teaching and learning in science, by implementing a curriculum that is progressive throughout the whole school. We aim to challenge, motivate and involve all learners and through science lessons teachers will encourage all children to develop a growth mindset, accepting that they may not have all the skills but determinedly strive to work scientifically and demonstrate key science knowledge. Science is taught through our topics, focusing on the knowledge, practical scientific methods, processes and skills stated in the National Curriculum and curriculum guidance for Protected Characteristics and British Values .

At Freegrounds Infant School each scientific journey builds on previously taught scientific skills and knowledge, with the opportunity to apply knowledge to observations made. Teachers ensure that children are engaged in science through providing a range of opportunities to develop their knowledge and skills. Their ability to classify, gather, explore and observe in scientific concepts will enable them to begin to develop an understanding of science.

Children have opportunities to explore a wide range of scientific concepts and equipment and we offer scientific experiences to evoke the children's interest, creating memories and positive attitudes towards the subject. As scientists, they will develop the ability to explore the uses and implications of science, today and for the future.

At Freegrounds Infant school we believe that the promotion of a language rich Science curriculum is essential to the successful acquisition of scientific methods, processes, skills and key knowledge so it is carefully planned for across the school.

Practical scientific methods and observations are key aspects of scientific learning and provides an opportunity for the children to explore and apply their understanding of the key knowledge and working scientifically skills. Through a rich

science curriculum, the children will feel prepared and well equipped for a successful future in science regardless of their race, religion, sex, disability or age.

Positive climate for learners in all classrooms.

CURRICULUM IMPACT

Subject Name: Science

The impact and measure of our curriculum is to ensure that children at Freegrounds Infant School are equipped with scientific skills and knowledge that will enable them to be ready for the curriculum at Key Stage 2 and for life as an adult in the wider world.

We want our children to have thoroughly enjoyed learning about science, therefore encouraging them to undertake new life experiences now and in the future. We want our children to talk about their science learning with passion and enthusiasm both within school and at home.

On leaving Freegrounds Infant school we want children to know more, remember more and understand more about science. Children will understand and use key knowledge and apply these alongside the working scientifically skills that they have learnt. Children will be well prepared for their future lives physically, mentally and value everyone's differences.

Assessment activities have been created for Teachers to assess and reflect on the learning throughout a science learning journey and against the carefully planned outcomes. Standards are monitored by the science leader through learning walks, pupil conferencing and book scrutiny.