Science Statement

SCIENCE

Science will be taught as a separate weekly lesson but will be linked to our Topic work where appropriate. We will encourage our pupils to be curious about natural phenomena and to be excited by the process of understanding the world around them.

Key scientific terminology will be introduced each lesson and knowledge will be built upon throughout the school. Pupils will be encouraged to work scientifically and will able to carry out simple tests and experiments using equipment and to gather and record data.

Whilst at Raunds Park Infant School, children will learn about plants, animals including humans, materials, seasonal changes and habitats.

KS1

National Curriculum Science Programmes of Study:

https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study#key-stage-1

EYFS

Early Years Foundation Stage Framework (Pages 10, 14-15)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/974907/EYFS_framework_-_March_2021.pdf

INTENT

At Raunds Park Infant School, we recognise the importance of Science in every aspect of daily life. As one of the core subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires.

The Scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

In conjunction with the aims of the National Curriculum, our Science teaching offers opportunities for the children who attend Raunds Park Infant School to:

- develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry and Physics.
- develop understanding of the nature, processes and methods of Science through different types of science enquiries that help them to answer scientific questions about the world around them;
- be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.
- develop the essential scientific enquiry skills to deepen their scientific knowledge.

- use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts.
- develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.
- develop an enthusiasm and enjoyment of scientific learning and discovery.

The National Curriculum will provide a structure and skill development for the science curriculum being taught throughout the school. There is a yearly plan for this subject that provides progression in scientific skills and understanding of the concepts taught across the key stages. Teachers plan for their class using a range of personal planning as well as published work.

At Raunds Park Infant School:

Children have weekly lessons in Science throughout Key Stage 1, using various programmes of study and resources. In Early years, science is taught through the children learning about the world around them in their learning through play. Additional opportunities are provided in Science, through the use of the local environment and educational.

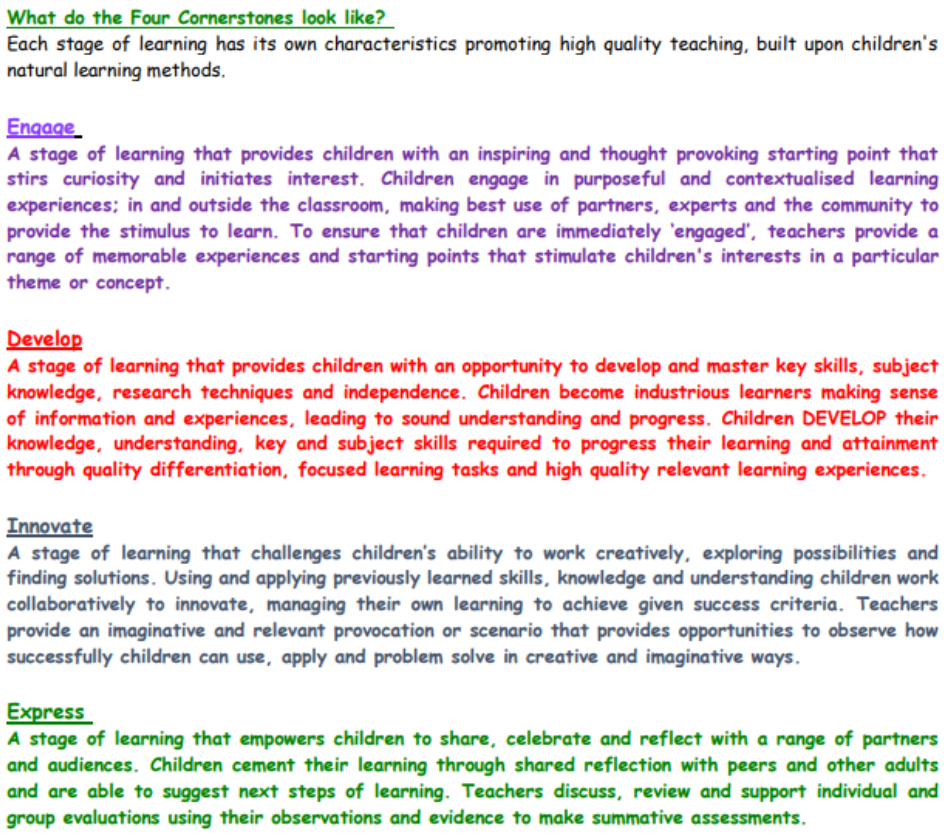
We endeavour to ensure that the Science curriculum we provide will give children the confidence and motivation to continue to further develop their skills into the next stage of their education and life experiences. Our children are supported within the teaching of Science taking into account ability levels and social backgrounds.

IMPLEMENTATION

At Raunds Park Infant School, teaching and implementation of the Science Curriculum is based on the National Curriculum and is planned using Cornerstones: Curriculum Maesto. The Science projects are well sequenced to provide a coherent subject scheme that develops children's scientific knowledge, skills and subject disciplines.

The scheme of lessons are based on the four cornerstones of teaching and learning. Lessons are sequenced using Engage, Develop, Innovate, Express to help develop a wide level of interest and understanding. Children revisit and review their understanding of

each of these areas as they progress through EYFS and Key Stage One.



What do the Four Cornerstones look like?

Each stage of learning has its own characteristics promoting high quality teaching, built upon children's natural learning methods.

Engage

A stage of learning that provides children with an inspiring and thought provoking starting point that stirs curiosity and initiates interest. Children engage in purposeful and contextualised learning experiences; in and outside the classroom, making best use of partners, experts and the community to provide the stimulus to learn. To ensure that children are immediately 'engaged', teachers provide a range of memorable experiences and starting points that stimulate children's interests in a particular theme or concept.

Develop

A stage of learning that provides children with an opportunity to develop and master key skills, subject knowledge, research techniques and independence. Children become industrious learners making sense of information and experiences, leading to sound understanding and progress. Children DEVELOP their knowledge, understanding, key and subject skills required to progress their learning and attainment through quality differentiation, focused learning tasks and high quality relevant learning experiences.

Innovate

A stage of learning that challenges children's ability to work creatively, exploring possibilities and finding solutions. Using and applying previously learned skills, knowledge and understanding children work collaboratively to innovate, managing their own learning to achieve given success criteria. Teachers provide an imaginative and relevant provocation or scenario that provides opportunities to observe how successfully children can use, apply and problem solve in creative and imaginative ways.

Express

A stage of learning that empowers children to share, celebrate and reflect with a range of partners and audiences. Children cement their learning through shared reflection with peers and other adults and are able to suggest next steps of learning. Teachers discuss, review and support individual and group evaluations using their observations and evidence to make summative assessments.

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children can achieve high standards in science.

Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught in planned and arranged topic blocks. This is a strategy to enable the achievement of a greater depth of knowledge.
- Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, they assess children regularly to identify those children with

gaps in learning, so that all children keep up. Outcomes are recorded on the school's system.

- We build upon the learning and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the area of study.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning.

The science curriculum and its delivery is monitored by the subject leader through observation, pupil voice, book monitoring and checking pupil progress. Staff are supported where needed to further enhance the teaching and learning within science.

SEND

When planning lessons, it is important to consider learners with SEND. We recognise the need to carefully consider the objective of each lesson and specifically what we want pupils to learn. We consider how the information can be broken down and presented to ensure all learners can access it. We carefully ensure that complex ideas are broken down into simpler parts for pupils to learn and practice. We use a variety of strategies including using objects, models and pictures. We encourage learners to ask questions and build in opportunities for partner talk, small group and whole class discussions.

Please also see separate documentation from the SEND:Teacher Handbook ‘Primary Science’.

IMPACT

The approach at Raunds Park Infant School results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first-hand experiences of the world around them. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this. Children have the understanding that science has changed our lives and that it is vital to the world’s future prosperity. Children learn the possibilities for careers in science. Pupil voice is used to further develop the Science curriculum, through questioning of pupil’s views and attitudes to science to support the children’s enjoyment of science and to motivate learners.

CORNERSTONES CURRICULUM OVERVIEW

Science programmes of study in the national curriculum are assigned to year groups. However, this is not compulsory and they must be covered before the end of the phase. Physics is not formally introduced until Key Stage 2. However, in Key Stage 1, children have opportunities to explore natural phenomena, such as shadows. In the Cornerstones Curriculum, the names of the science projects are matched to the national curriculum aspects, for example, Living things and their habitats and Earth and space. However, in Key Stage 1, the aspect of Animals, including humans has been separated so that children study humans before expanding to explore animals. The science projects are sequenced to develop both children's substantive and declarative knowledge, and if possible, make meaningful links to other projects. These links allow for children to embed their substantive knowledge in new and often real-life contexts. The sequencing of projects ensures that children have the substantive knowledge and vocabulary to comprehend subsequent projects fully. Each project's place in the year has also been carefully considered. For example, projects that involve growing plants or observing animals are positioned at a suitable time of year to give

children the best possible opportunity to make first-hand observations. Within all the science projects, disciplinary knowledge is embedded within substantive content.

EYFS

Topic		Term 3 **Starry Night** This project explores the differences in the world at night compared to during the day. It teaches children about the importance of a good night's sleep, and helps them to discover what is happening in the world while they are sleeping, including finding out about nocturnal animals.	Term 4 **Dangerous Dinosaurs** This exciting project teaches children about the different animals that roamed Earth millions of years ago and how they are related to animals that live on Earth today.	Term 5 **Sunshine and Sunflowers** This seasonal project provides opportunities for outdoor learning and teaches children how to care for the plants and animals in their local environment and how to stay safe in the sun.		
Mini projects	**Exploring Autumn -** This project teaches children about the natural changes that happen during the season of autumn, including how the weather changes, why trees lose their leaves and how wild animals prepare for winter.	**Sparkle and Shine** This project teaches children about the celebrations that take place during the autumn and winter seasons and focus on the significance and symbolism of light at this time of year.	**Winter Wonderland** This project teaches children about the changes that happen during winter, including the types of weather associated with winter. It also explores places that have snow all year round and the types of animals that live there.	**Puddles and Rainbows** This mini project teaches children about the weather that happens during spring and allows them to explore natural phenomena, including rainbows. It supports them to explore colour in the natural world.	**Shadows and Reflections** This project teaches children about natural phenomena, including shadows, reflections and echoes. They explore how shadows are formed and how they can change.	**Splash** This project teaches children about water, including floating and sinking, freezing and melting, and why it is important for living things to stay hydrated.

Key Stage 1

In Year 1, children start the autumn term with Everyday Materials, linking this learning to the design and technology project Shade and Shelter. In the Human Senses project, they learn about parts of the human body and those associated with the senses. In the spring project Seasonal Changes, they learn broadly about seasonal changes linked to weather, living things and day length. They revisit some of this learning in the following summer term project Plant Parts. They finish with the project Animal Parts, linking back to their knowledge about body parts and senses and identifying commonalities. In Year 2, children begin the autumn term with the project Human Survival, learning about the survival needs of humans, before expanding to study animals within their habitats in the project Habitats. Building on learning from Year 1, children learn about the uses of materials in the spring project Uses of Materials and begin to understand changes of materials through simple physical manipulation, such as bending

and twisting. The spring Plant Survival project also explores survival, with children observing what plants need to grow and stay healthy. Finally, in the project Animal Survival, children bring together learning from the autumn term, thinking about what animals need to survive

	Autumn Term	Spring Term	Summer Term
Year 1	 Everyday Materials — This project teaches children that objects are made from materials. They identify a range of everyday materials and their sources. Children investigate the properties of materials and begin to recognise that a material's properties define its use.	 Seasonal Changes — This project teaches children about the seasons, seasonal changes and typical seasonal weather and events. They learn about measuring the weather and the role of a meteorologist. Children begin to learn about the science of day and night and recognise that the seasons have varying day lengths in the UK.	 Plant Parts — This project teaches children about wild and garden plants by exploring the local environment. They identify and describe the basic parts of plants and observe how they change over time.
	 Human Senses — This project teaches children that humans are a type of animal, known as a mammal. They name body parts and recognise common structures between humans and other animals. They learn about the senses, the body parts associated with each sense and their role in keeping us safe.		 Animal Parts — This project teaches children about animals, including fish, amphibians, reptiles, birds, mammals and invertebrates. They identify and describe their common structures, diets, and how animals should be cared for.
Year 2	 Human Survival — This project teaches children about the basic needs of humans for survival, including the importance of exercise, nutrition and good hygiene. They learn how human offspring grow and change over time into adulthood.	 Uses of Materials — This project teaches children about the uses of everyday materials and how materials' properties make them suitable or unsuitable for specific purposes. They begin to explore how materials can be changed.	 Animal Survival — This project teaches children about growth in animals by exploring the life cycles of some familiar animals. They build on learning about the survival of humans by identifying the basic needs of animals for survival, including food, water, air and shelter.
	 Habitats — This project teaches children about habitats and what a habitat needs to provide. They explore local habitats to identify, and name living things and begin to understand how they depend on one another for food and shelter.	 Plant Survival — This project teaches children about the growth of plants from seeds and bulbs. They observe the growth of plants first-hand, recording changes over time and identifying what plants need to grow and stay healthy.	

Science Knowledge

EYFS

UTW – The Natural World	**ELG: The Natural World** TNW1 Explore the natural world around them, making observations and drawing pictures of animals and plants. TNW2 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. TNW3 Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Year 1

Science	**Every Day Materials –** children identify a range of materials and learn about their properties. **Human Senses –** children learn that humans are mammals. They name body parts and recognise structures common between humans and animals. They learn about the senses and the body parts linked to these senses.	**Seasonal Changes –** this project teaches children about the seasons, seasonal change and typical weather patterns. They learn about measuring the weather and the role of meteorologists. They learn about the science of day and night, and that the seasons have differing day lengths in the UK.	**Plant Parts -**children learn about garden and wild plants by exploring their local environment. They identify basic plant parts and observe change over time. **Animal Parts –** children learn about animals including fish, mammals, amphibians, birds, invertebrates and reptiles. They identify and describe their common structure, their diets and how they should be cared for.

Year 2

Science	**Human Survival –** children learn about the elements needed for survival. They learn how human offspring grow and change to adulthood. **Habitats –** children learn about habitats and what animals need to survive. They explore local habitats and begin to understand how animals depend on each other for survival.	**Seasonal Changes –** this project teaches children about the seasons, seasonal change and typical weather patterns. They learn about measuring the weather and the role of meteorologists. They learn about the science of day and night, and that the seasons have differing day lengths in the UK.	**Animal Survival –** children explore the life cycles of different animals. This builds on the learning about human survival.

Vocabulary Grids

Please see separate documentation