

Progression in Science



Who's who?

Subject Leader: Mr Armstrong

Teaching staff: Mrs Watts, Mrs Lancaster Mr Armstrong, Miss Dixon

Our Aims

At Rosley CE School, we believe that all students should be provided with the necessary scientific skills and knowledge to develop their understanding of the world around them. Students should become curious and excited by a variety of opportunities to test, explore and question things encountered and often taken for granted on a daily basis. Science has the potential to help unlock a huge expanse of opportunities, vital to the world's sustainability, and we want to provide our children with the building blocks for developing ideas and scientific working.

We encourage our children to collaborate and build upon one another's ideas. Through observations, research and practice of scientific skills children can begin to utilise and embed scientific vocabulary and build on this within their topics as they move through our school. We allow children to make sense of different ideas through investigations and opportunities to explore the outdoor environment. With this immersion in learning and vocabulary, we aim to draw predictions, explanations and analysis to ensure our pupils are developing a well-rounded and secure understanding of each concept before they revisit and develop these ideas across future key stages

Working scientifically

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

YEAR A 2021 - 2022

YEAR RECEPTION, 1 & 2		
TERM	UNIT OF STUDY	LEARNING/KEY SKILLS
Autumn	Materials	<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, and 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 suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Spring	Animals including humans	<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
Summer	Plants	<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 • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees

<p>Spring</p>	<p>Animals including Humans</p>	<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 • 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
<p>Summer</p>	<p>Living Things and Their Habitats</p> <p>Plants</p>	<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 • 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

ENRICHMENT OPPORTUNITIES

Annual REACT Science Show
Dyson Project
STEM activities

HOW TO SUPPORT YOUR CHILD'S LEARNING

- Value your child's questions and discuss the questions your child asks. Encourage them to share their perspective and observations. Explore and find the answers together.
- Invite curiosity and support further exploration. Give children time and space to explore and accept that explorations are often messy!
- Encourage children to record their observations. Writing, drawing, or taking photographs are all ways to record observations - an important scientific skill.
- Make good use of your electronic devices. E.g. Take pictures of a stunning butterfly, record frog sounds, use a website or app to learn more about a specific phenomenon or creature.
- Visit museums and science centres