Corsham Regis Primary Academy

SUBJECT LEADER IMPACT REPORT
SCIENCE

Together **E**veryone **A**chieves **M**ore

INTENT

Our Curriculum intent at Corsham Regis is embedded in the working scientifically skills and the subject specific knowledge that we teach the children across both Key Stages.

How to communicate using appropriate vocabulary

In their science lessons, the children are encouraged to use technical scientific vocabulary. This high-quality vocabulary is modelled and explained by the teacher and then drip fed into the children's language. During science lessons children are given opportunities to talk about their learning, in pairs, groups or individually. Open-ended questioning and language scaffolds are used to challenge the children to think more critically and develop their command of English. Scientific vocab is displayed through topic boards and is provided for parents on the topic webs and the 'chatter topics' online. It might also be taught explicitly through Reading lessons to ensure children are confident in using the new vocabulary.

About Corsham and the local area

Where possible, teachers embed the children's learning through the different cross curricular topics. Examples might include learning about the geology, flora and fauna of their local area or observing minibeasts in the local habitats around school. Links are also made with other subjects such as DT. For example, while learning about the SS Great Britain children explored their local environment while also developing scientific, technological and historical knowledge.

Through experience inside and beyond the classroom

Children are encouraged to learn outside, particularly in FS2 and Year 1. The school allotment is used to support children's knowledge and understanding of plants and nature. They also develop an interest in the natural world through outdoor learning in FS2 which helps them with the jump to the National Curriculum objectives. School trips that link with the science topic are arranged when possible and when appropriate to enrich the children's learning.

New knowledge and understanding appropriate to their age

The children are taught the National Curriculum appropriate to their age and key stage. The rolling curriculum programme ensures that Milestones 1, 2 and 3 from Chris Quigley's Essentials resource are taught on an alternating basis over Years A and B. Working Scientifically skills are taught alongside each science topic and are threaded through the children's learning.

Topics are planned so that there is a clear progression in the level of challenge and depth as children get older. For example, Animals and Habitats in KS1 through to Evolution and Inheritance in UKS2.

How to keep themselves safe

When using the internet to access science resources, children are encouraged to search safely and use child friendly sites such as Swiggle. During lessons, children have access to a wide range of resources to support their learning and are taught to use equipment safely. When conducting scientific experiments, children are taught the importance of using whatever resources are provided safely from an early age. Staff are vigilant in preparing risk assessments prior to any out of the ordinary or off-site learning.

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Science

These 5 intentions underpin our curriculum because we want our pupils to have a love of learning which they can share, a sense of understanding and pride of where they live, and be safe in different situations.

- **How to communicate using appropriate vocabulary**
- **About Corsham and their local area**
- **Through experiences inside and beyond the classroom**
- **New knowledge and understanding appropriate to their age**
- **How to keep themselves safe**

These are the essential skills and knowledge that we want our pupils, to learn in science by the end of:

EYFS	KS1
ELG: Understand the world • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about the features of their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. In the EYFS, children use a range of 'Characteristics of Effective Learning' in their independent learning. These can be seen as complementing 'Working Scientifically'. Playing and exploring – engagement Finding out and exploring; playing with what they know; being willing to 'have a go' Active learning – motivation Being involved and concentrating; keeping trying; enjoying achieving what they set out to do Creating and thinking critically – thinking Having their own ideas; making links; choosing ways to do things.	Seasonal Change and daily weather Plants Animals, including humans Everyday materials Living things and their habitats Animals, including humans Uses of everyday materials Materials Plants Revisit: Living things and their habitats/Animals including humans
LKS2	**UKS2**
Rocks Animals, including humans Forces and magnets Plants Light Living things and their habitats States of matter Animals, including humans Electricity Sounds	Properties and changes of materials Animals, including humans Forces Earth in space Living things and their habitats Electricity Animals including humans Light Living things and their habitats Evolution and inheritance

PROGRESSION MAPPING

Corsham Regis Primary Academy

Science

Knowledge Retention

Our Science curriculum is planned so that the retention of knowledge is enhanced through Topic Talk Time and Explorify sessions. This enables children to retrieve key facts regularly whilst moving through the cumulative learning in our science lessons.

Working Scientifically

Science at Regis is taught through the three subject areas: biology, chemistry and physics. Working scientifically is threaded throughout our science lessons. Children are taught to think and act as scientists.

Awareness Days

We celebrate Science Week as a whole school. We have whole school assemblies throughout the year that promote STEM and international women in science and engineering day.

Cross Curricular links

Across the school through our topic blocks, we link science learning to other subjects where relevant. Science links well with other subjects in particular STEM and DT. Children have opportunities to draw upon their science knowledge including links to other subjects such as maths through tables and graphs.

Range of Resources

Practical Equipment

- Magnifying glasses or hand lenses
- Microscopes/ visualizers (basic or digital)
- Thermometers
- Measuring jugs and cylinders
- Stopwatches and timers
- Scales or balances
- Magnets and magnetic materials
- Circuits kits (bulbs, wires, batteries, buzzers, switches)
- Seed trays, soil, and plant pots
- Pulleys, levers, and ramps
- Mirrors and prisms
- Torches and light boxes
- Skeleton and organ models

Digital & Interactive Tools

- Data loggers (for temperature, sound, light)
- iPads/tablets with science apps
- Online simulations and videos (e.g. BBC Bitesize, Explorify)
- Microscopes/visualizers with USB/digital display

Classroom Resources

- Science vocabulary on displays
- Topic boxes or kits (e.g., electricity, forces, habitats)
- Science books / encyclopedias
- Worksheets and investigation templates
- Dioramas or displays (e.g., life cycles, food chains)

Outdoor/Nature Resources

- Bug viewers
- Mini-beast identification guides
- School greenhouse / gardening supplies
- Bug hotel

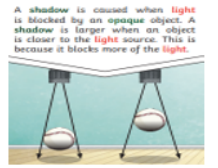
Key Vocabulary

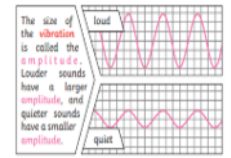
	Word	Definition
1	Light	A form of energy that travels in a wave from a source
2	Light source	An object that makes its own light
3	Dark	Dark is the absence of light
4	Vibration	A quick movement back and forwards
5	Amplitude	The size of the vibration A larger amplitude means a louder sound.
6	Volume	The loudness of a sound

Interesting facts

1	It takes 8 minute and 20 seconds for light from the sun to reach the Earth.
2	Dogs can hear much higher sounds than humans and bats and dolphins can hear lower sounds than humans.

Useful pictures/diagrams





As a scientist leaving Regis, every child will:

have the skills to work scientifically by asking meaningful questions, planning and carrying out investigations, observing and measuring accurately, recording and interpreting data, and drawing evidence-based conclusions with confidence and curiosity.

have a secure knowledge of the disciplines of biology, physics and chemistry with excellent knowledge and skills in which they can take to develop further in secondary school and beyond.

have experienced a wide range of investigations and demonstrations including WOW days and science and engineering visitors.

be inspired by diverse, famous scientists, to understand the range of science career opportunities and to understand the fact that science is ever changing and they could be part of a new discovery!

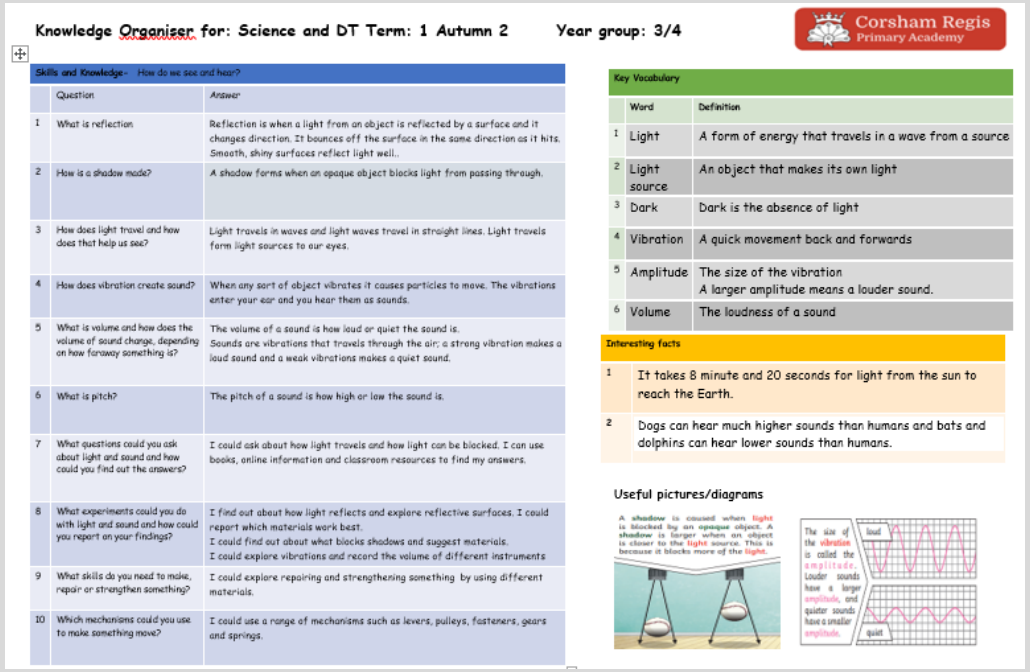
Together **E**veryone **A**chieves **M**ore

Each Science topic includes our profound learning, which inspires and enthuses the children in their Science learning.

We use knowledge organisers to support the children with their scientific vocabulary, knowledge and understanding of key ideas.

‘Working Scientifically’ is weaved through all of our Science topics.

PROVISION



Knowledge Organiser for: Science and DT Term: 1 Autumn 2 **Year group: 3/4**

Corsham Regis Primary Academy

Skills and Knowledge- How do we see and hear?

	Question	Answer
1	What is reflection	Reflection is when a light from an object is reflected by a surface and it changes direction. It bounces off the surface in the same direction as it hits. Smooth, shiny surfaces reflect light well..
2	How is a shadow made?	A shadow forms when an opaque object blocks light from passing through.
3	How does light travel and how does that help us see?	Light travels in waves and light waves travel in straight lines. Light travels form light sources to our eyes.
4	How does vibration create sound?	When any sort of object vibrates it causes particles to move. The vibrations enter your ear and you hear them as sounds.
5	What is volume and how does the volume of sound change, depending on how faraway something is?	The volume of a sound is how loud or quiet the sound is. Sounds are vibrations that travels through the air; a strong vibration makes a loud sound and a weak vibrations makes a quiet sound.
6	What is pitch?	The pitch of a sound is how high or low the sound is.
7	What questions could you ask about light and sound and how could you find out the answers?	I could ask about how light travels and how light can be blocked. I can use books, online information and classroom resources to find my answers.
8	What experiments could you do with light and sound and how could you report on your findings?	I find out about how light reflects and explore reflective surfaces. I could report which materials work best. I could find out about what blocks shadows and suggest materials. I could explore vibrations and record the volume of different instruments
9	What skills do you need to make, repair or strengthen something?	I could explore repairing and strengthening something by using different materials.
10	Which mechanisms could you use to make something move?	I could use a range of mechanisms such as levers, pulleys, fasteners, gears and springs.

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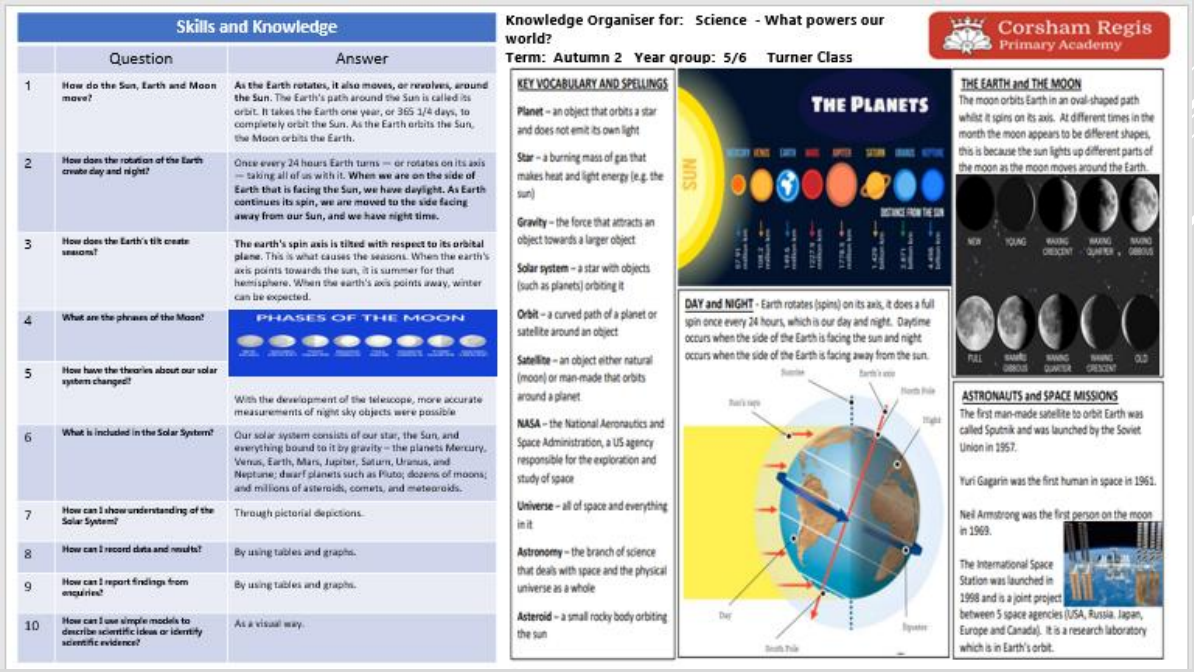


Skills and Knowledge

	Question	Answer
1	How do the Sun, Earth and Moon move?	As the Earth rotates, it also moves, or revolves, around the Sun. The Earth's path around the Sun is called its orbit. It takes the Earth one year, or 365 1/4 days, to completely orbit the Sun. As the Earth orbits the Sun, the Moon orbits the Earth.
2	How does the rotation of the Earth create day and night?	Once every 24 hours Earth turns — or rotates on its axis — taking all of us with it. When we are on the side of Earth that is facing the Sun, we have daylight. As Earth continues its spin, we are moved to the side facing away from our Sun, and we have night time.
3	How does the Earth's tilt create seasons?	The earth's spin axis is tilted with respect to its orbital plane. This is what causes the seasons. When the earth's axis points towards the sun, it is summer for that hemisphere. When the earth's axis points away, winter can be expected.
4	What are the phases of the Moon?	PHASES OF THE MOON
5	How have the theories about our solar system changed?	With the development of the telescope, more accurate measurements of night sky objects were possible
6	What is included in the Solar System?	Our solar system consists of our star, the Sun, and everything bound to it by gravity – the planets Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune; dwarf planets such as Pluto; dozens of moons; and millions of asteroids, comets, and meteoroids.
7	How can I show understanding of the Solar System?	Through pictorial depictions.
8	How can I record data and results?	By using tables and graphs.
9	How can I report findings from enquiries?	By using tables and graphs.
10	How can I use simple models to describe scientific ideas or identify scientific evidence?	As a visual way.

Knowledge Organiser for: Science - What powers our world?

Term: Autumn 2 Year group: 5/6 Turner Class

Corsham Regis Primary Academy

KEY VOCABULARY AND SPELLINGS

Planet – an object that orbits a star and does not emit its own light

Star – a burning mass of gas that makes heat and light energy (e.g. the sun)

Gravity – the force that attracts an object towards a larger object

Solar system – a star with objects (such as planets) orbiting it

Orbit – a curved path of a planet or satellite around an object

Satellite – an object either natural (moon) or man-made that orbits around a planet

NASA – the National Aeronautics and Space Administration, a US agency responsible for the exploration and study of space

Universe – all of space and everything in it

Astronomy – the branch of science that deals with space and the physical universe as a whole

Asteroid – a small rocky body orbiting the sun

DAY and NIGHT - Earth rotates (spins) on its axis, it does a full spin once every 24 hours, which is our day and night. Daytime occurs when the side of the Earth is facing the sun and night occurs when the side of the Earth is facing away from the sun.

THE EARTH and THE MOON

The moon orbits Earth in an oval-shaped path whilst it spins on its axis. At different times in the month the moon appears to be different shapes, this is because the sun lights up different parts of the moon as the moon moves around the Earth.

ASTRONAUTS and SPACE MISSIONS

The first man-made satellite to orbit Earth was called Sputnik and was launched by the Soviet Union in 1957.

Yuri Gagarin was the first human in space in 1961.

Neil Armstrong was the first person on the moon in 1969.

The International Space Station was launched in 1998 and is a joint project between 5 space agencies (USA, Russia, Japan, Europe and Canada). It is a research laboratory which is in Earth's orbit.

I led staff meetings to support staff with their science assessment. We moderated books from every class.

I completed a staff questionnaire to find out areas for development in science. These will form our action plan in Science next year.

I ran our Eco-council and they ran an Eco-day for the school.
I ran Science Week.

IMPLEMENTATION

IMPLEMENTATION

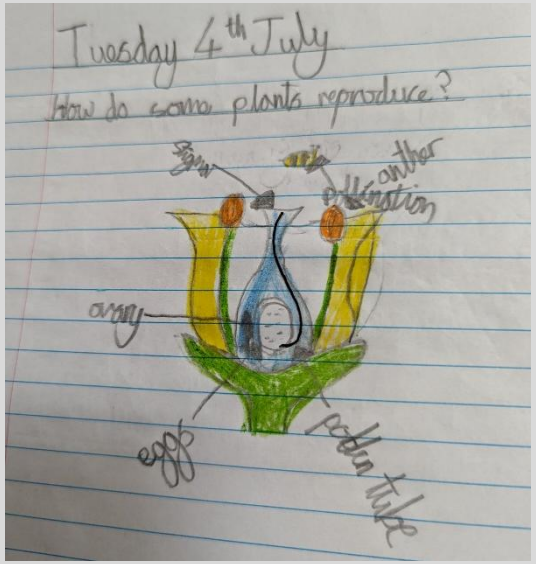
The Eco-council completed lots of litter picking.
They entered and won a competition to win a penguin bin.

I made links with our local climate campaigners and they came to visit and share ways Science is helping planet Earth.
We took part in an Eco-Assessment with Corsham Town Council.

I utilised our Science Ambassadors this year.
They supported Science week and helped in Explorify lessons with the younger children.

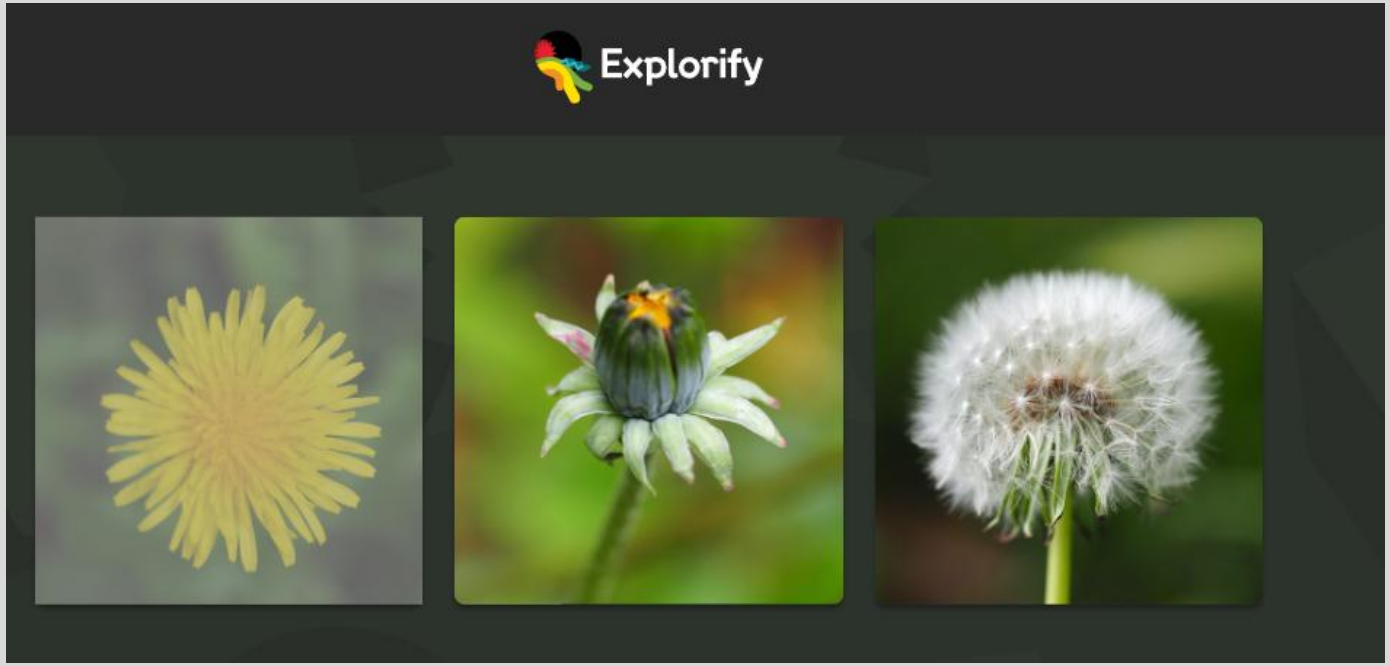
IMPLEMENTATION

- Science lessons are assessed against the milestones document. Teachers use what they have seen in lessons and books to assess the children and record their assessment. On this document are sections showing the pupils on the SEN register, EAL and pupil premium for tracking.



	A	B
1		
2	**Key- Girls, Boys, P.P, SEN, EAL**	
3	**Working Scientifically**	
4	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	
5	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	
6	recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	
7	using test results to make predictions to set up further comparative and fair tests.	
8	reporting and presenting 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.	
9	identifying scientific evidence that has been used to support or refute ideas or arguments.	
10		
11	**Living Things & Their Habitats**	
12	describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	
13	describe the life process of reproduction in some plants and animals.	
14		

Explorify lessons

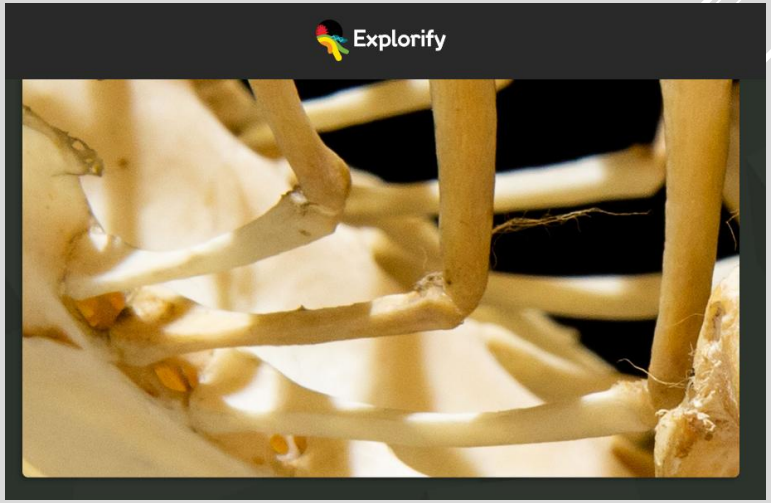


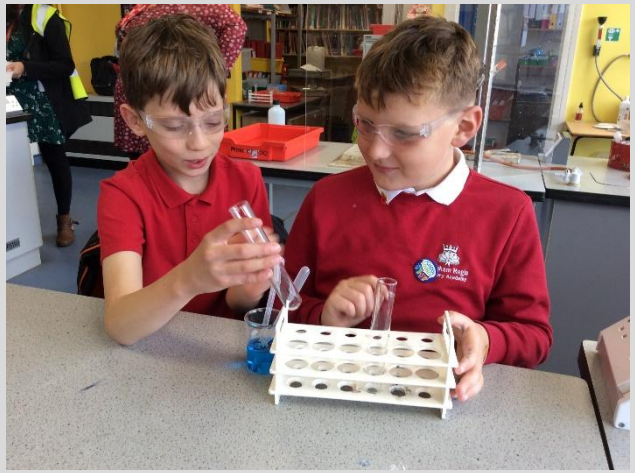
PROVISION

The children take part in weekly explorify science lessons.

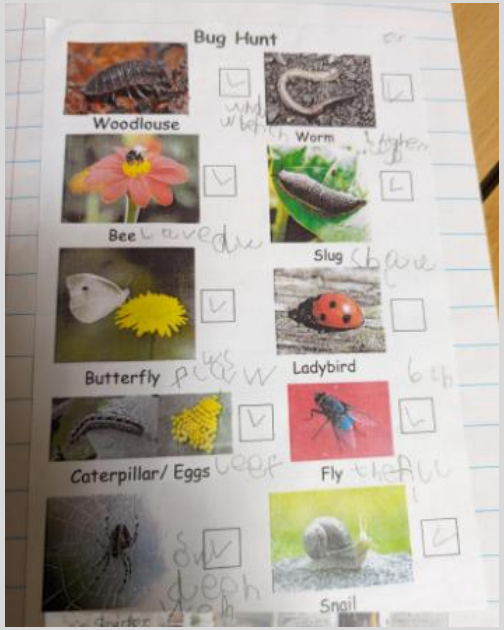
IMPACT

The children are excited to find out more about the images and facts behind each explorify starter. They revise and learn new scientific knowledge.





Outstanding chemistry, biology and physics.



Outdoor learning

Science lessons in the secondary school lab.

Science through LEGO.

PROVISION

Teachers deliver excellent lessons in Science.

IMPACT

The children learn in a variety of exciting ways.

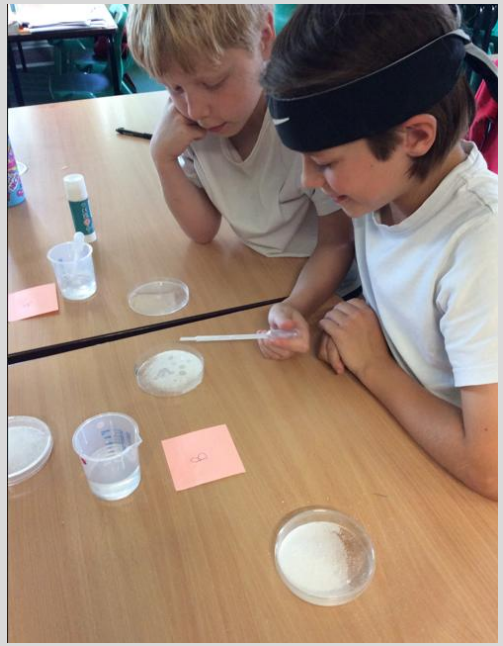
SCIENCE CLUB

PROVISION

We have a Science Club at Regis.

IMPACT

The children are enthusiastic about Science and love learning more through experiments.



WHAT DO CHILDREN AT REGIS SAY ABOUT SCIENCE?

I love finding out things and watching science videos!

I really loved the wildlife park Wow day because I found out more about animals.

Science is my bestest and my teacher is so good at science.

I loved doing a chemical explosion experiment in the science lab.

When I think about Science I think about all the fun things I've done this year.

Predicting is fun because we can test our own theories and be right or learn something.

REGIS WOW DAYS

Detailed study of animals and plants

Chemical reactions

Cotswold Wildlife Park

Mini beast hunting

Models of the eye

Floating and sinking

Reading for knowledge

Experiments

SCIENCE WEEK

STEM OPPORTUNITIES

I liked collecting my stickers because I could see how much fun Science I had done.

I loved the science books- finding out cool stuff about the world.

I loved getting the food colouring out for an experiment. We made some awesome colours move up the flowers and celery.

The best thing about Science week was doing extra Explorify and finishing my challenge booklet.

WHAT DID CHILDREN SAY ABOUT SCIENCE WEEK?

DATA HIGHLIGHTS FOR 2024 - 2025

From looking at our assessment data for the school year 2024-2025, the following trends appear:

- *Year 1 / 2 had 78% of children achieving expected and above in Science overall.*
- *In year 3, 88% of the children achieving expected in Science.*
- *Year 4 had 74% of the children achieving expected in Science overall.*
- *Year 5 had all of the class reach expected or above in Electricity so all of the SEN children achieved expected in this area. Year 5 had 86% expected and above across all Science topics.*
- *In Year 6, 90% of children achieved expected or above in Science overall . They had 17% at greater depth for Electricity.*
- As part of the SIP targets, my data analysis next year will conitinue to look at tracking SEN and ways to support all learners.

- Monitor ‘Working Scientifically’ in Science lessons and through staff meeting moderation.
- Monitor Explorify lessons.
- Monitor Science assessments on the third year of the cycle.
- Continue to invite visitors to enhance our Science provision.
- Introduce and monitor the use of the ‘Making it last’ board in Science.

FINAL REFLECTION/NEXT STEPS FOR NEXT ACADEMIC YEAR- 2024/25