

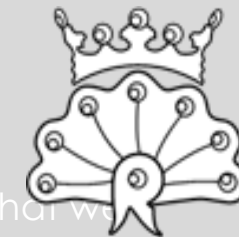


Corsham Regis
Primary Academy

SUBJECT LEADER IMPACT REPORT
SCIENCE
2022-2023

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.

Science

ELGs	Aims
<p>ELG: Understand the world</p> <p>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.</p> <p>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</p>	<p>The national curriculum for science aims to ensure that all pupils:</p> <ul style="list-style-type: none"> 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 are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
	Essential skills
	<p>'Working scientifically' is essential. We focus on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.</p>

Learning Objectives	End of Year 2	End of Year 4	End of Year 6
To work scientifically	<p>To work scientifically Ask simple questions, Identify and classify, perform simple tests, <u>Observe</u> closely, using simple equipment. Use observations and ideas to suggest answers to questions, gather and record data to help in answering questions</p>	<p>To work scientifically Ask relevant questions, Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions, Identify differences, similarities or changes related to simple, scientific ideas and processes, Use straightforward, scientific evidence to answer questions or to support their findings, Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers</p>	<p>To work scientifically Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. Use test results to make predictions to set up further comparative and fair tests. Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.</p>



PROGRESSION MAPPING

To investigate materials	<p>To investigate materials 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).</p>	<p>To investigate materials Compare and group together different kinds of rocks on the basis of their simple, physical properties, Relate the simple physical properties of some rocks to their formation (igneous or sedimentary), Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock, Compare and group materials together, according to whether they are solids, liquids or gases, <u>Observe</u> that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics, Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>To investigate materials Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. 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, oxidation and the action of acid on bicarbonate of soda</p>
	<p>To investigate materials (Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching, Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard).</p>		

Forces and magnets		<p>To understand movement, forces and magnets (Notice that some forces need contact between two objects and some forces act at a distance, observe how magnets attract or repel each other and attract some materials and not others, 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>To understand movement, forces and magnets (Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. Describe, in terms of drag forces, why moving objects that are not driven tend to slow down Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.)</p>




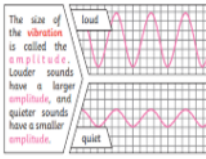
PROGRESSION MAPPING

Sound		<p>To investigate sound and hearing (Identify how sounds are made, associating some of them with something vibrating, <u>Recognise</u> that sounds get fainter as the distance from the sound's source increases).</p>	<p>To investigate sound and hearing Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p>
Light		<p>To investigate light and seeing Notice that light is reflected from surfaces. Associate shadows with a light source being blocked by something; find patterns that determine the size of shadows</p>	<p>To investigate light and seeing Understand that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.</p>
Electricity		<p>To understand electrical circuits 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. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators and associate metals with being good conductors.</p>	<p>To understand electrical circuits Identify and name the basic parts of a simple electrical circuit, including cells, wires, bulbs, switches and buzzers. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. 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>

PROGRESSION MAPPING

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	
<p>A shadow is caused when light is blocked by an opaque object. A shadow is larger when an object is closer to the light source. This is because it blocks more of the light.</p> 	<p>The size of the vibration is called the amplitude. Louder sounds have a larger amplitude, and quieter sounds have a smaller amplitude.</p> 



To understand animals and humans (Investigate and describe the basic needs of animals, including humans, for survival (water, food and air), Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene).

To investigate living things (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).

To understand animals and humans (Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates, 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 (birds, fish, amphibians, reptiles, mammals and invertebrates, 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, Notice that animals, including humans, have offspring which grow into adults,

To investigate living things Explore and compare the differences between things that are living, that are dead and that have never been alive

To understand animals and humans

Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat.

Describe the ways in which nutrients and water are transported within animals, including humans.

Identify that humans and some 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.

To understand animals and humans

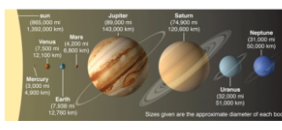
Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood (including the pulse and clotting).

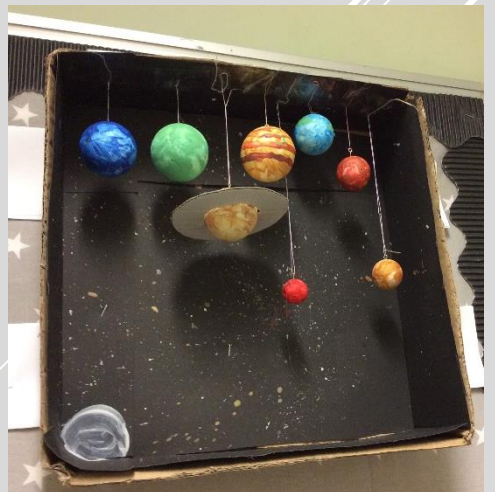


To understand plants	To understand plants (Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen, Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers, 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).	To understand plants (Identify and describe the functions of different parts of flowering plants: roots, stem, 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal).	To understand plants Relate knowledge of plants to studies of evolution and inheritance. Relate knowledge of plants to studies of all living things.
Living things and their habitats		To investigate living things Identify and name a variety of living things (plants and animals) in the local and wider environment, using classification keys to assign them to groups. Give reasons for classifying plants and animals based on specific characteristics. Recognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats.	To investigate living things Describe the life cycles common to a variety of animals, including humans (birth, growth, development, reproduction, death), and to a variety of plants (growth, reproduction and death). Explain the classification of living things into broad groups according to common, observable characteristics and based on similarities and differences, including plants, animals and micro-organisms. Describe the life process of reproduction in some plants and animals. Describe the changes as humans develop from birth to old age. Recognise the impact of diet, exercise, drugs and lifestyle on the way

Evolution and Inheritance		To understand evolution and inheritance Identify how plants and animals, including humans, resemble their parents in many features. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Identify how animals and plants are suited to and adapt to their environment in different ways.	To understand evolution and inheritance Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Describe how adaptation leads to evolution. Recognise how and why the human skeleton has changed over time, since we separated from other primates.
---------------------------	--	--	--

Earth and Space		To understand the Earth's movement in space Describe the movement of the Earth relative to the Sun in the solar system, Describe the movement of the Moon relative to the Earth.	To understand the Earth's movement in space Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night.
-----------------	--	--	--

Knowledge Organiser for: Science-Is the Force With You? Term: 2 Year group: 4/5	Corsham Regis Primary Academy																																		
Skills and Knowledge <table border="1"> <thead> <tr> <th>Question</th><th>Answer</th></tr> </thead> <tbody> <tr> <td>1 How does gravity work?</td><td>Gravity is a force that pulls objects downward. Gravity is what holds the planets in orbit around the sun and what keeps the moon in orbit around Earth.</td></tr> <tr> <td>2 How do forces such as drag and motion work?</td><td>As a moving object pushes the liquid or gas out of its way, the fluid pushes back on the object. This drag force is always opposite to the object's motion, and unlike friction between solid surfaces, the drag force increases as the object moves faster.</td></tr> <tr> <td>3 How could you appropriately plan, predict and describe a scientific experiment?</td><td>A question is created from the information available. A plan/method is put together about how to test it. Predictions are made. The experiment is carried out.</td></tr> <tr> <td>4 How could you appropriately measure, record, and report a scientific experiment?</td><td>Observations are made, results are recorded, maybe in a table. In this way, it is put to the test with an experiment to prove or disprove it.</td></tr> <tr> <td>5 What methods can I use to present a scientific experiment?</td><td>Experiments can be presented on different media: written, recorded or shown in a lecture or exhibition.</td></tr> <tr> <td>6 How does the Earth move?</td><td>It spins and it moves around the sun. The spinning of the earth is called rotation. It takes the earth about 24 hours, or one day, to make one complete rotation. At the same time, the earth is moving around the sun. This is revolution.</td></tr> <tr> <td>7 What are the effects of the movement of the Earth?</td><td>Since the Earth orbits the sun and rotates on its axis at the same time we experience seasons, day and night, and changing shadows throughout the day.</td></tr> <tr> <td>8 What is the Earth's relationship with other parts of the solar system?</td><td>The Solar System is made up of the Sun and all of the smaller objects that move around it. Apart from the Sun, the largest members of the Solar System are the eight major planets. Nearest the Sun are four fairly small, rocky planets - Mercury, Venus, Earth and Mars.</td></tr> <tr> <td>9 How could you describe the movement of the Earth relative to the Sun in the solar system and the movement of the Moon relative to the Earth.</td><td>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.</td></tr> <tr> <td>10 How can you represent the movement of a planet in a model?</td><td>We can use cones, rods and DT skills.</td></tr> </tbody> </table>	Question	Answer	1 How does gravity work?	Gravity is a force that pulls objects downward. Gravity is what holds the planets in orbit around the sun and what keeps the moon in orbit around Earth.	2 How do forces such as drag and motion work?	As a moving object pushes the liquid or gas out of its way, the fluid pushes back on the object. This drag force is always opposite to the object's motion, and unlike friction between solid surfaces, the drag force increases as the object moves faster.	3 How could you appropriately plan, predict and describe a scientific experiment?	A question is created from the information available. A plan/method is put together about how to test it. Predictions are made. The experiment is carried out.	4 How could you appropriately measure, record, and report a scientific experiment?	Observations are made, results are recorded, maybe in a table. In this way, it is put to the test with an experiment to prove or disprove it.	5 What methods can I use to present a scientific experiment?	Experiments can be presented on different media: written, recorded or shown in a lecture or exhibition.	6 How does the Earth move?	It spins and it moves around the sun. The spinning of the earth is called rotation. It takes the earth about 24 hours, or one day, to make one complete rotation. At the same time, the earth is moving around the sun. This is revolution.	7 What are the effects of the movement of the Earth?	Since the Earth orbits the sun and rotates on its axis at the same time we experience seasons, day and night, and changing shadows throughout the day.	8 What is the Earth's relationship with other parts of the solar system?	The Solar System is made up of the Sun and all of the smaller objects that move around it. Apart from the Sun, the largest members of the Solar System are the eight major planets. Nearest the Sun are four fairly small, rocky planets - Mercury, Venus, Earth and Mars.	9 How could you describe the movement of the Earth relative to the Sun in the solar system and the movement of the Moon relative to the Earth.	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.	10 How can you represent the movement of a planet in a model?	We can use cones, rods and DT skills.	Key Vocabulary <table border="1"> <thead> <tr> <th>Word</th><th>Definition</th></tr> </thead> <tbody> <tr> <td>1 Rotation</td><td>Rotation is when something turns or spins around a point located at its centre.</td></tr> <tr> <td>2 Revolution</td><td>The earth is moving around the sun. This is called a revolution.</td></tr> <tr> <td>3 Orbit</td><td>An orbit is the path of an object around a particular point in space, for example the path the Moon takes around the Earth.</td></tr> <tr> <td>4 Solar</td><td>Adjective: of or relating to the sun.</td></tr> <tr> <td>5 Axis</td><td>An axis is an imaginary line an object turns around. This imaginary line runs directly through the object's centre, from the north to the south poles. Although we can't feel the Earth spinning, it makes one complete turn, each day, around its own axis.</td></tr> </tbody> </table> Interesting facts <ol style="list-style-type: none"> Luckily the moon is travelling at the perfect speed. If the speed was any different, it would go off into another direction or come closer to Earth! A day is longer than a year on Venus Useful pictures/diagrams 	Word	Definition	1 Rotation	Rotation is when something turns or spins around a point located at its centre.	2 Revolution	The earth is moving around the sun. This is called a revolution.	3 Orbit	An orbit is the path of an object around a particular point in space, for example the path the Moon takes around the Earth.	4 Solar	Adjective: of or relating to the sun.	5 Axis	An axis is an imaginary line an object turns around. This imaginary line runs directly through the object's centre, from the north to the south poles. Although we can't feel the Earth spinning, it makes one complete turn, each day, around its own axis.
Question	Answer																																		
1 How does gravity work?	Gravity is a force that pulls objects downward. Gravity is what holds the planets in orbit around the sun and what keeps the moon in orbit around Earth.																																		
2 How do forces such as drag and motion work?	As a moving object pushes the liquid or gas out of its way, the fluid pushes back on the object. This drag force is always opposite to the object's motion, and unlike friction between solid surfaces, the drag force increases as the object moves faster.																																		
3 How could you appropriately plan, predict and describe a scientific experiment?	A question is created from the information available. A plan/method is put together about how to test it. Predictions are made. The experiment is carried out.																																		
4 How could you appropriately measure, record, and report a scientific experiment?	Observations are made, results are recorded, maybe in a table. In this way, it is put to the test with an experiment to prove or disprove it.																																		
5 What methods can I use to present a scientific experiment?	Experiments can be presented on different media: written, recorded or shown in a lecture or exhibition.																																		
6 How does the Earth move?	It spins and it moves around the sun. The spinning of the earth is called rotation. It takes the earth about 24 hours, or one day, to make one complete rotation. At the same time, the earth is moving around the sun. This is revolution.																																		
7 What are the effects of the movement of the Earth?	Since the Earth orbits the sun and rotates on its axis at the same time we experience seasons, day and night, and changing shadows throughout the day.																																		
8 What is the Earth's relationship with other parts of the solar system?	The Solar System is made up of the Sun and all of the smaller objects that move around it. Apart from the Sun, the largest members of the Solar System are the eight major planets. Nearest the Sun are four fairly small, rocky planets - Mercury, Venus, Earth and Mars.																																		
9 How could you describe the movement of the Earth relative to the Sun in the solar system and the movement of the Moon relative to the Earth.	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.																																		
10 How can you represent the movement of a planet in a model?	We can use cones, rods and DT skills.																																		
Word	Definition																																		
1 Rotation	Rotation is when something turns or spins around a point located at its centre.																																		
2 Revolution	The earth is moving around the sun. This is called a revolution.																																		
3 Orbit	An orbit is the path of an object around a particular point in space, for example the path the Moon takes around the Earth.																																		
4 Solar	Adjective: of or relating to the sun.																																		
5 Axis	An axis is an imaginary line an object turns around. This imaginary line runs directly through the object's centre, from the north to the south poles. Although we can't feel the Earth spinning, it makes one complete turn, each day, around its own axis.																																		





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 from 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 far away something is?	The volume of a sound is how loud or quiet the sound is. Sounds are vibrations that travel through the air; a strong vibration makes a loud sound and a weak vibration 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.

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

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

Useful pictures/diagrams

A shadow is caused when light is blocked by an opaque object. A shadow is longer when an object is closer to the light source. This is because it blocks more of the light.

The size of the vibration is called the amplitude. Louder sounds have a larger amplitude and quieter sounds have a smaller amplitude.

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?	 <p>With the development of the telescope, more accurate measurements of night sky objects were possible.</p>
5	How have the theories about our solar system changed?	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.
6	What is included in the Solar System?	Through pictorial depictions.
7	How can I show understanding of the Solar System?	By using tables and graphs.
8	How can I record data and results?	By using tables and graphs.
9	How can I report findings from enquiries?	As a visual way.
10	How can I use simple models to describe scientific ideas or identify scientific evidence?	

Knowledge Organisation for: Science - What powers our world?

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

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.

Corsham Regis Primary Academy

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 teaching and assessment.



I completed a staff audit to find out areas for development in science. This informed the content of my staff meeting.



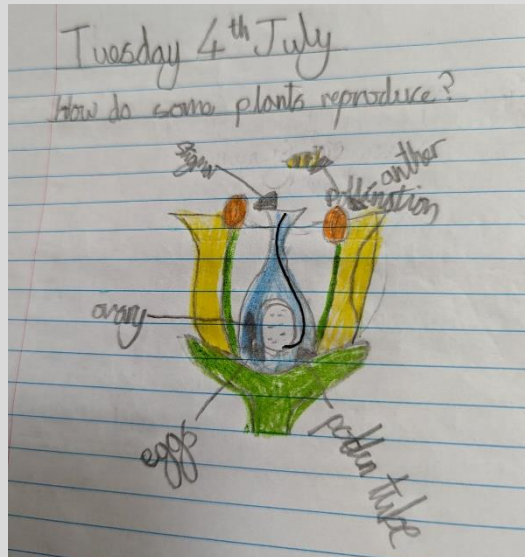
I established an Eco-council. The children created an action plan and helped lead an eco-day in science week.

IMPLEMENTATION



IMPLEMENTATION

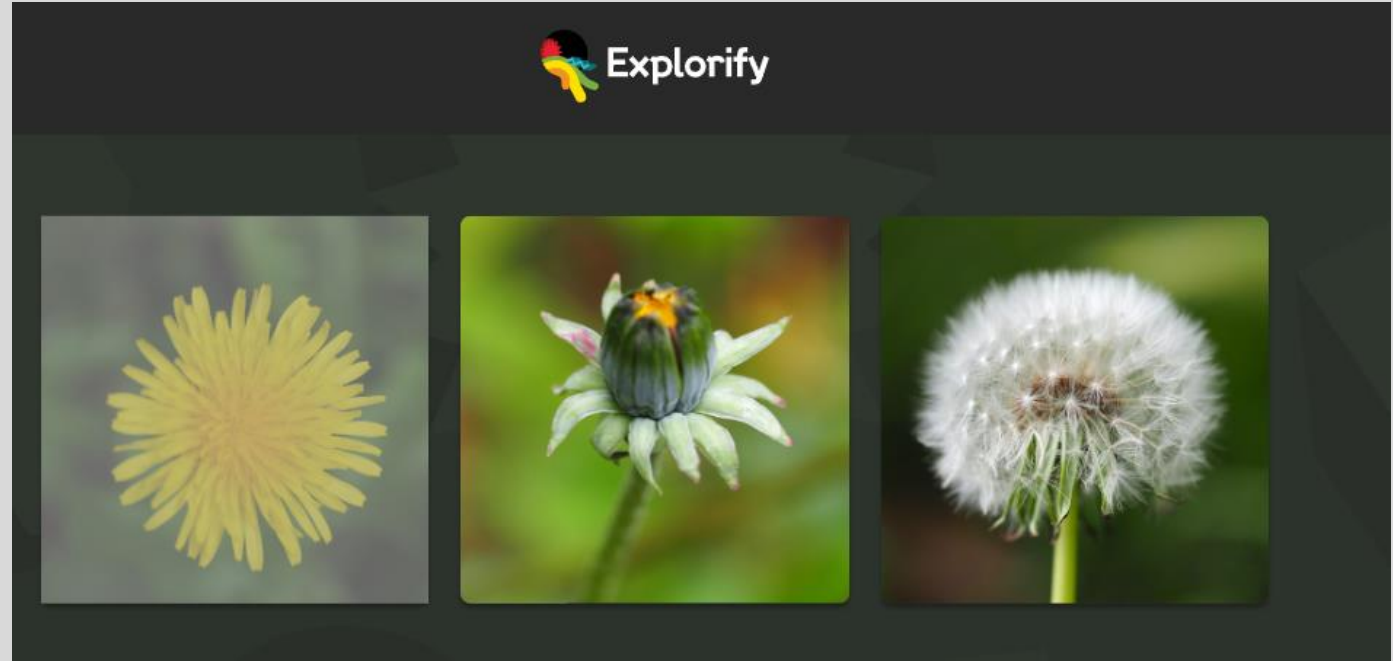
- Science lessons are assessed against the milestones document. Teachers use what they have seen in lessons and books to assess the children and record their assessment. On this document are sections showing the pupils on the SEN register, EAL and pupil premium for tracking.



	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

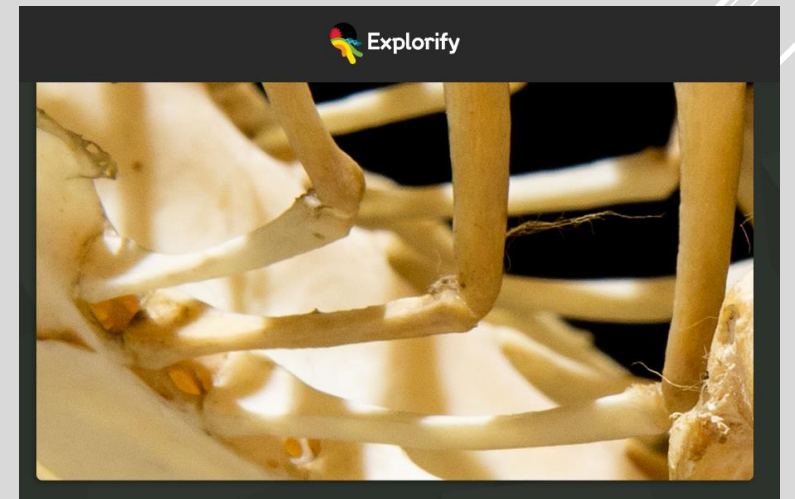


PROVISION

The children take part in weekly explorify science lessons.

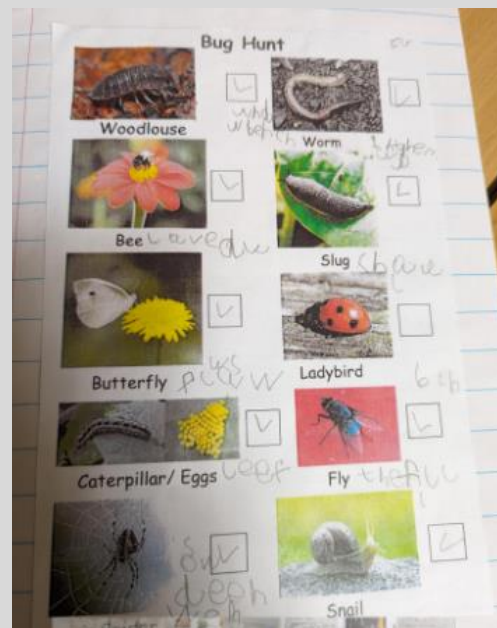
IMPACT

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





Studying famous scientists – Mary Anning and fossils



Outdoor learning



Science lessons in the secondary school lab



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.





I love experiments!

I really enjoy our lessons where I get to do a science experiment.

I love finding out the answers to questions in Science.

I loved doing a chemical reaction experiment in Science club.

Science is my favourite time.

WHAT DO CHILDREN
AT REGIS SAY ABOUT
SCIENCE?

I like it when my teacher asks us for a mini prediction and we get to see if we are right.



Detailed study
of animals and
plants



Anatomy of a plant



Middlewick House
Animal studies



Mini beast hunting

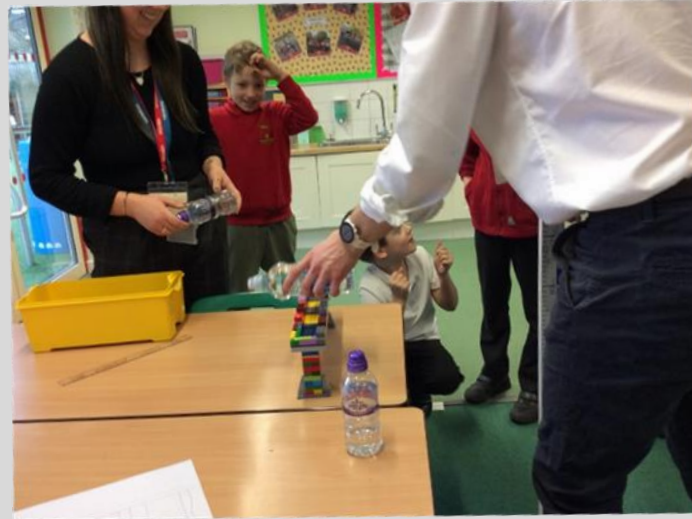
REGIS WOW DAYS



Models of the eye




Floating and sinking



STEM OPPORTUNITIES





I learned a lot in
my Science
reading time with
different books.

I loved the
experiments with
my buddy.

I loved getting the
magnets out and
testing all the
things in our
classroom.

The best thing about
Science week was
knowing all of my
Science facts to get
all my stickers.

WHAT DID CHILDREN SAY ABOUT SCIENCE WEEK?



- ▶ Continue to monitor and evaluate 'Working Scientifically' in Science lessons.
- ▶ Embed Explorify planning and review the Explorify lessons.
- ▶ Embed and review new Science assessments.
- ▶ Continue to invite visitors to enhance our Science provision.

**FINAL REFLECTION/NEXT STEPS FOR
NEXT ACADEMIC YEAR- 2023/24**