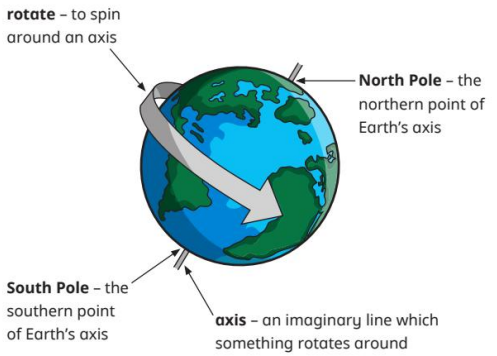
Ridgeway Farm CE Academy - Knowledge Organiser:

Topic	Science - Earth and Space	Theme	Explorers	Year Group	5

What should I already know?

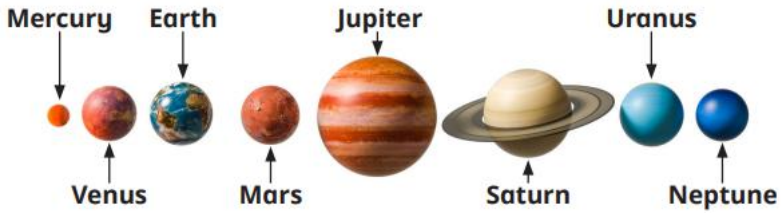
- The Sun provides light and warmth and is important for life on Earth.
- The Earth, Sun and Moon are separate objects in space.
- Day and night occur because Earth rotates on its axis.
- The Moon orbits the Earth, and its shape appears to change (phases).
- Shadows change length and position during the day as the Sun appears to move.



A mnemonic to remember the order of the planets is:
My (Mercury) Very (Venus)
Easy (Earth) Method (Mars)
Just (Jupiter) Speeds (Saturn)
Up (Uranus) Nothing (Neptune).

Key learning:

- The Solar System is made up of the Sun, eight planets, their moons, and other celestial bodies.
- The Sun, a star at the centre of the Solar System, provides heat and light.
- The eight planets orbit the Sun: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
- The inner planets (Mercury-Mars) have solid surfaces; the outer planets (Jupiter-Neptune) are mostly gas.
- Pluto is a dwarf planet, not one of the eight main planets.
- The Sun's gravity keeps all planets in orbit; Earth takes about 365 days to orbit once.
- Scientific models help us represent and understand how the Solar System works.
- Our understanding has changed over time – we now know the Sun, not Earth, is at the centre.
- Earth rotates once every 24 hours, causing day and night, and its tilted axis causes the seasons.
- The Moon, Earth's natural satellite, orbits every 27 days and reflects sunlight, not its own light.



Key Vocabulary

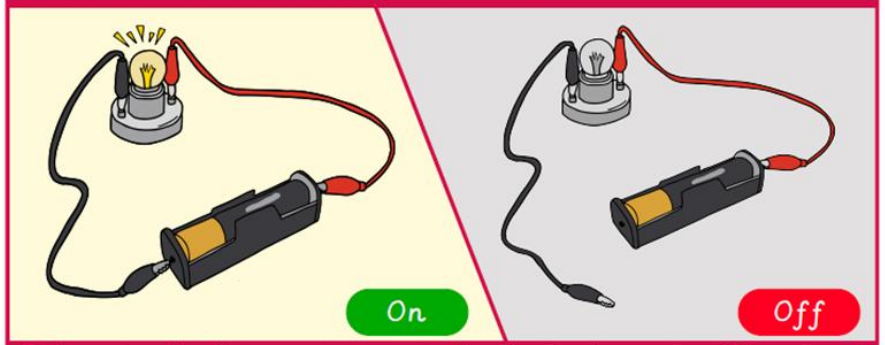
Solar System	the Sun and the other bodies that orbit it
planets	a roughly spherical object which orbits a star
orbit	the path an object takes around another object because of gravity
Sun	the star at the centre of our Solar System
Pluto	a former planet, that was reclassified as a dwarf planet
celestial body	an object in space
model	a representation of an idea or process
gravity	a non-contact force caused by objects with mass pulling each other
heliocentric model	a model that puts the Sun at the centre of the Solar System
geocentric model	a model that puts Earth at the centre of the Solar System
rotate	to spin around an axis
North Pole	the northern point of Earth's axis
South Pole	the southern point of Earth's axis
axis	an imaginary line which something rotates around
Earth	the planet that we live on
night	when it is dark on the half of Earth that is facing away from the Sun
day	when it is light on the half of Earth that is facing the Sun
moon	a natural satellite that orbits Earth
gravitational force	a non-contact force caused by objects with mass pulling each other
satellite	an object that orbits a planet or a star

Ridgeway Farm CE Academy - Knowledge Organiser

Topic	Earth and Space	Theme	Explorers	Year Group	5
Key Question	What have we learned from our space explorations?				
Subject	Design Technology: Doodlers				

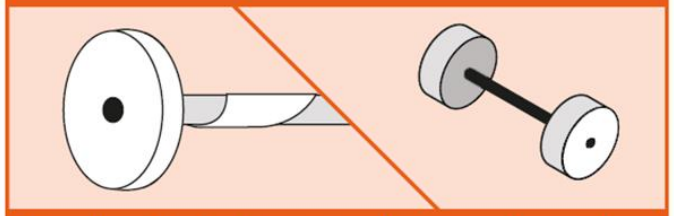
Circuit	A collection of components that make an electrical system.
Circuit component	One of several parts that complete a circuit (e.g. bulb).
Configuration	How different parts are put together to form an object.
Current	The flow of electricity.
Develop	Continue to work on something to make progress or improve it.
DIY	The acronym means 'Do it yourself' and represents various activities that someone chooses to do themselves at home, rather than through a service or professional.
Investigate	Research something by looking at it in greater detail.
Problem-solve	Develop and test solutions to an issue.
Product analysis	To look at an object and evaluate it based on certain criteria (e.g. function).
Stable	Object does not easily topple over.
Target user	A particular person at whom the product is aimed.

Series circuits only have one path for the electrical current to flow.



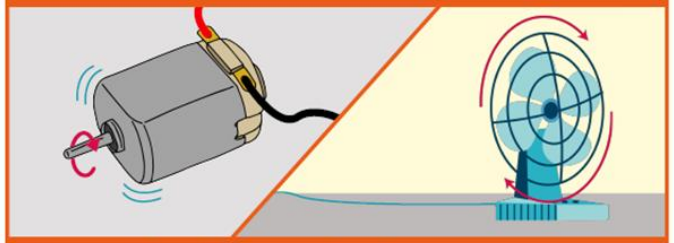
If there is a break in a series circuit, the electrical current will be cut and all the components will stop working. Causing a break in a series circuit can act as a switch to turn the circuit off.

Axles form part of the wheel mechanism in wheeled products such as toy cars, wheelbarrows and bicycles.



For a bicycle to function we need to use our legs and feet to push the pedals that rotate the axle and spin the wheels.

An electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. Motors use electricity instead of human force to move the axle.



A motorised product is an object that uses a motor to function.

Key Knowledge:

- To know that, in a series circuit, electricity only flows in one direction.
- To know when there is a break in a series circuit, all components turn off.
- To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin.
- To know a motorised product is one which uses a motor to function.

Key Skills:

- Look at products to see what works well and what could be better.
- Plan your design based on what the product needs and who will use it.
- Change and improve products by trying out new ideas.
- Write clear steps so someone else could make your product.
- Make your product carefully, including working circuits or motors.
- Check and share your work and help others improve theirs.

Prior Knowledge:

- Circuits need a battery, wires, and a bulb to work.
- Switches can turn a circuit on and off.
- Circuits can have bulbs, buzzers, or motors.
- Electricity can make things light up or make a sound.
- If a circuit is broken, things stop working.

Ridgeway Farm CE Academy - Knowledge Organiser

Topic	Earth and Space	Theme	Explorers	Year Group	5
Key Question	What have we learned from our space explorations?				
Subject	Computing: Online Safety				

Objectives

Online Reputation

- I can explain ways that some of the information about anyone online could have been created, copied or shared by others.

Online Bullying

- I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat).

Privacy and Security

- I can describe how connected devices can collect and share anyone's information with others.
- I can describe how and why people should keep their software and apps up to date (e.g. auto updates).

Managing Online Information

- I can explain the benefits and limitations of using different search engines (e.g. voice activation).
- I can explain how some technology can limit the information I am presented with.

Online Reputation - What I will know

- I understand that others may search my name online to find information about me.
- I know that not all information about me online may have been posted online by me.
- I understand that people may alter information or put untrue information about me online with or without my knowledge.

Online Bullying - What I will know

- I know different types of media online.
- I can explain the different features of different media.
- I can simply describe what bullying online may look like on these different forms of media.

Privacy and Security - What I will know

- Recognise that smart devices often collect and share personal information and other information about people (e.g. tech usage).
- I can describe why people should keep their software and apps up to date.
- I can describe how people can keep their software and apps up to date e.g. auto updates.

Managing Online Information - What I will know

- I can use different search technologies.
- I can evaluate digital content and can explain how I make choices from search results.

Ridgeway Farm CE Academy - Knowledge Organiser

Topic	Earth and Space	Theme	Explorers	Year Group	5
Key Question	What have we learned from our space explorations?				
Subject	Computing: Spreadsheets				

Key Learning

- To use formulae within a spreadsheet to convert measurements of length and distance.
- To use a spreadsheet to model a real-life problem.
- To use spreadsheet tools to investigate probability.
- To use the count tool to answer hypotheses about common letters in use.

Prior Learning:

- Navigate spreadsheets using cells, rows, and columns.
- Add and move content, including text and images.
- Copy, paste, and format cells, including using the formula wizard.
- Use calculations and tools, like addition, totals, timers, random numbers, and spin buttons.
- Organise and plan data in tables or budget sheets.
- Create charts and graphs, including block and line graphs.

Key Spreadsheet Vocabulary

Budget
The amount of money available to spend on a project.

Columns
Boxes running vertically in a spreadsheet.

Computational model
Creating or using a simulation (a model) of a real-life situation, on a computer.

Count tool
Counts how many of a variable there are in a spreadsheet.

Data
A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making

Dice tool
Simulates the roll of a die to a random number between 1 and 6 when you click on it.

Expenses
A cost associated with a project. For example, the cost of buying ingredients for a cake sale, materials for making banners etc.

Format
The way that text looks. Formatting cells is helpful for interpreting a cell's contents for example you might want to format a cell to show a fraction e.g. 4 ½ or include units such as £ or $.

Formula
A group of letters, numbers, or other symbols which represents a scientific or mathematical rule. The plural of formula is formulae.

Formula Bar
An area of the spreadsheet into which formulae can be entered using the '=' sign to open the fomula.

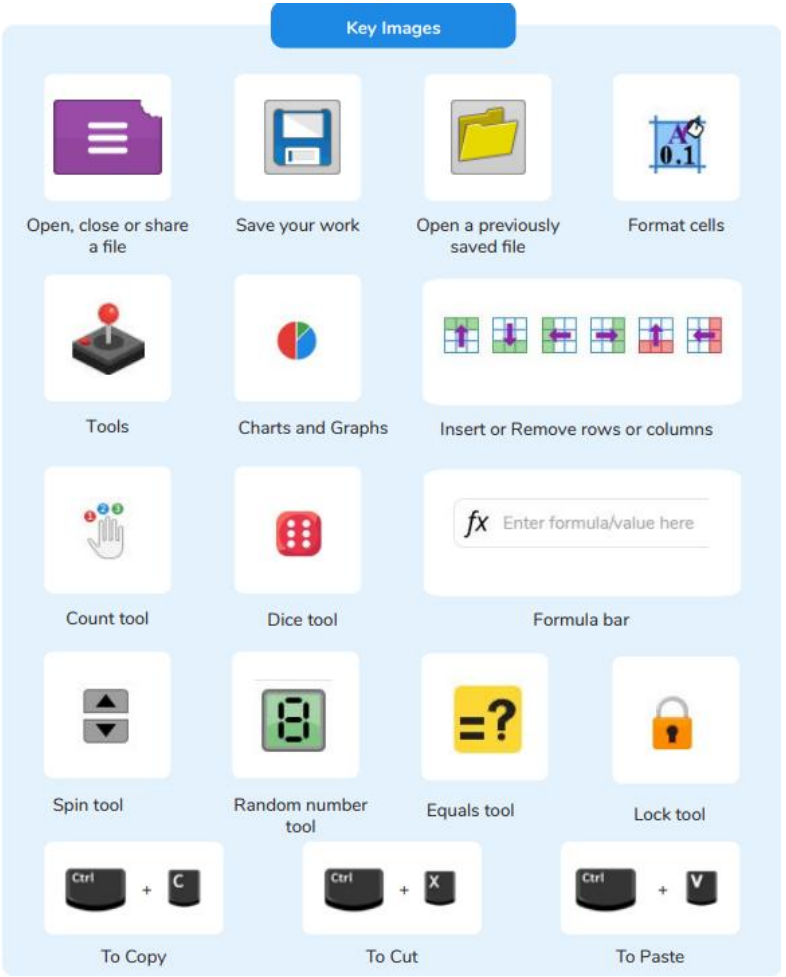
Hypothesis
A concept or idea that you test through research and experiments. The plural of hypothesis is hypotheses.

Profit
Money that is earned in trade or business after paying the costs of producing and selling goods and services. For example, the amount of money there is from a cake sale when the cost of creating them has been subtracted.

Totalling tool
Adds up the value of every cell above it, next to it or diagonal to it according to which total tool is selected.

Rows
Boxes running horizontally in a spreadsheet.

Key Images



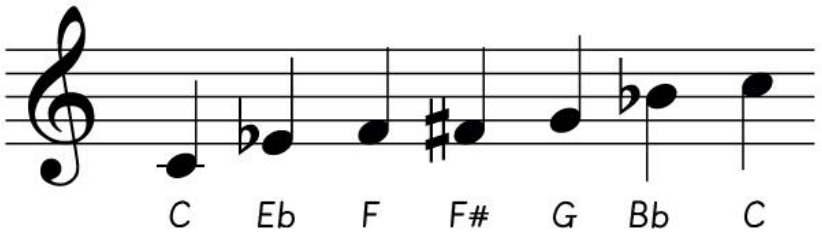
Ridgeway Farm CE Academy - Knowledge Organiser

Topic	Earth and Space	Theme	Explorers	Year Group	5
Key Question	What have we learned from our space explorations?				
Subject	Music: The Blues				

Blues music is often sad and emotional, which is why we say we have 'the blues' when we feel sad. Its main features are the 12-bar blues and the blues scale, and it includes a lot of improvisation.

The Blues scale

The Blues scale to accompany our 12-bar Blues is made up of these notes:



Vocabulary

12-bar blues	A series of chords played in a specific order.

1 C C C C	2 C C C C	3 C C C C	4 C C C C
5 F F F F	6 F F F F	7 C C C C	8 C C C C
9 G G G G	10 F F F F	11 C C C C	12 C C C C

chord	Two or more notes that are played at the same time and work in harmony.
scale	Any set of musical notes which are in order of their pitch.
ascending scale	A scale in which the pitch of the notes goes up.
descending scale	A scale in which the pitch of the notes goes down.
blues scale	A set of notes used to play a melody over a 12-bar blues.
improvisation	Making up music as it is played or performed.
bent notes	A musical note that varies in pitch usually going up slightly at the end.
bar	A section of music with a specific number of beats (in blues there are usually 4 beats in a bar).
quaver	A note which last for half a beat.

Key Learning:

- A **chord** is made by playing several pitches at the same time.
- **12-bar Blues** uses a repeating pattern of 12 bars built from three main chords.
- **Blues music** expresses emotions, often sadness or worry.
- A **bent note** changes its pitch slightly, sliding up or down.
- **Blues songs** use rhythm and melody to communicate feeling and tell a story.

Prior Knowledge:

- Sing and play in tune and in time with others and backing tracks.
- Remember and perform lyrics accurately.
- Identify musical structure and represent it with notation.
- Improvise and compose melodies, using both non-standard and stave notation.
- Contribute confidently and meaningfully to group performances and compositions.

Ridgeway Farm CE Academy - Knowledge Organiser

Topic	Earth and Space	Theme	Explorers	Year Group	5
Key Question	What have we learned from our space explorations?				
Subject	Spanish: Los planetas (The Planets)				

Los planetas

phonics

qu sound in:
- pequeño
- por qué

v sound in:
- Venus
- vivo

b sound in:
- bastante
- describir

z sound in:
- azul

vocabulary

As this is a unit that explores writing longer and more complex language, there is a wider range of vocabulary than in other units.

Not all will be learnt from memory but there will be an opportunity to learn 10 key elements from the Solar System from memory in Spanish along with a wider range of adjectives and question words.

grammar

To use a range of adjectives, conjunctions and intensifiers to describe the Solar System, and make sentences longer, more complex and interesting.

Júpiter es bastante frío, muy grande y luminoso.

Jupiter is quite cold, very big and bright.

Apply adjectival agreement rules:

pequeño/pequeña | azul | grande

Add an 'a' to make the adjective agree with feminine nouns.

If the adjective ends in a consonant or 'e' then there is no change.

Use a wider range of adjectives to describe character

paciente (*patient*) | calmado/calmada (*calm*) | curioso/curiosa (*curious*)

What I will learn:

- ☐ Objective 1: I will improve my range of vocabulary by learning 10 key elements of the Solar System in Spanish and will be able to label them on a map.
- ☐ Objective 2: I will learn how to apply my increasing knowledge of adjectival agreement to describe the Solar System in Spanish.
- ☐ Objective 3: I will extend my sentences by using conjunctions and intensifiers to create more complex descriptions in Spanish.
- ☐ Objective 4: I will learn how to ask key questions in Spanish to be able to conduct an interview with an astronaut.
- ☐ Objective 5: I will learn how to present myself as an astronaut by answering the questions in Spanish and learn how to describe my qualities/character.

It would help if I already know:

- The letter sounds (phonics & phonemes) from 'Phonics & Pronunciation' lessons 1, 2, 3 & 4
- Language introduced from Early Language and Intermediate units such as 'Presenting Myself', 'My Home', and 'Clothes'.
- What an adjective is in English.
- Basic adjectival agreement rules in Spanish from Intermediate units like Me presento' and 'La ropa'

Ridgeway Farm CE Academy - Knowledge Organiser

Topic	Earth and Space	Theme	Explorers	Year Group	5
Key Question	What have we learned from our space explorations?				
Subject	Religious Education: Incarnation: Was Jesus the Messiah?				

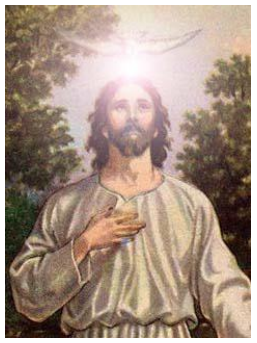
What we have already learnt...

- Christians believe Jesus is one of the three persons of the Trinity: Father, Son and Holy Spirit.
- Christians believe God the Father sends the Son who saves his people.

While investigating this question we will:

- Explain the place of Incarnation and Messiah within the 'big story' of the Bible.
- Identify Gospel and prophecy texts, using technical terms.
- Explain connections between biblical texts, Incarnation and Messiah, using theological terms.
- Show how Christians put their beliefs about Jesus' Incarnation into practice in different ways in celebrating Christmas.
- Comment on how the idea that Jesus is the Messiah makes sense in the wider story of the Bible.
- Weigh up how far the idea that Jesus is the Messiah – a Saviour from God – is important in the world today and, if it is true, what difference that might make in people's lives.

Key vocabulary	
Advent	The coming or second coming of Christ.
Bible	The sacred text used by Christians, consisting of the Old and New Testaments.
Christ	The title given to Jesus.
Jesus	The man that Christians believe is the son of God.
Incarnation	A person who embodies the flesh of a spirit or God.
Messiah	Regarded as the saviour of Christians.
New Testament	The second part of the Bible which includes stories after the birth of Jesus.
Old Testament	The first part of the Christian Bible which includes stories before the birth of Jesus



PUPILS WILL KNOW THAT:

- The Old Testament is the first part of the Christian Bible which is written about time before Jesus.
- The life of Jesus was planned by God to restore the relationship between humans and God.
- Christians believe that when Jesus was born, God became present on earth as a human. This is referred to as the incarnation of Jesus, as it was when God took on human form, becoming fully God and fully human at the same time.
- Jesus is referred to as Christ or Messiah, and he showed Christians how they should live. The Messiah is also known as ' The Promised Saviour.'
- Advent is the period leading up to the birth of Jesus.
- Each year, Christians celebrate Christmas as a time when Jesus was brought to the earth as 'God in the flesh'.
- The Gospel is the teaching of the life of Jesus.