Year 5 - Term 3

Mountains, Earth and Space

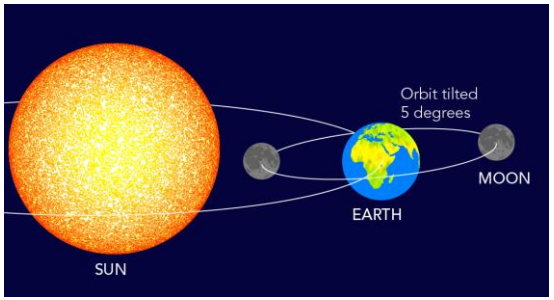
What's up there, what's out there?

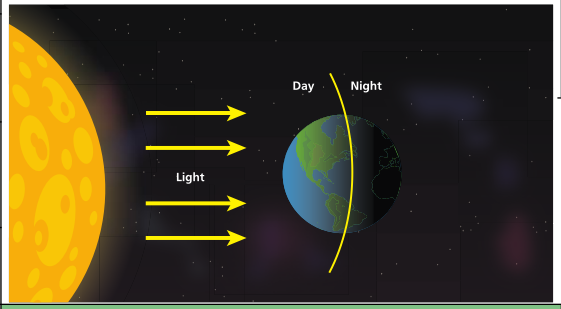
Science - Space

What's out there?

Subject Specific Vocabulary

astronomy	Astronomy is the study of outer space, focusing on **celestial bodies such as stars, comets, planets and galaxies**.
solar system	The solar system is made of the eight planets that orbit our sun; it is also made of asteroids, moons, comets and lots more.
orbit	An orbit is a repeating path that one celestial body takes around another.
planet	There are 8 planets in our solar system, they are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
rotation	Rotation is when an object is turned around a fixed point.
spherical	Spherical is something more or less round, in three dimensions like a ball.
crescent moon	It is a sliver of the moon that is lit up and can be seen. It is less than half the moon.
axis	An invisible line around which an object rotates.
eclipse	An eclipse occurs when an astronomical object is temporarily obscured. A lunar eclipse is when the Earth moves between the Sun and the Moon, therefore blocking the Sun's rays from striking the Moon.
lunar	Is anything related to the moon.





Science objectives

- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- Describe the movement of the Moon relative to the Earth
- Describe the Sun, Earth and Moon as approximately spherical bodies
- Use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky.

Extra points to know:

- ❑ Jupiter, Saturn, Uranus and Neptune are gas giants and all have rings.
- ❑ Pluto lost its status as planet – it is a dwarf planet.

Sticky Knowledge about Earth and Space

- ❑ The sun is a star. It is larger than Earth or the moon.
- ❑ The sun *appears* to move across the sky but actually our Earth spins on its own axis and takes 24 hours (1 day) to rotate. This is what causes day and night.
- ❑ The moon orbits the Earth – it takes 27 ½ days (1 month).
- ❑ As the Earth rotates, it also orbits (revolves around) the Sun. It takes the Earth one year, or 365 1/4 days, to completely orbit the Sun.
- ❑ Earth is the third planet from the sun and the only world known to support an atmosphere with free oxygen, oceans of liquid water on the surface, and life.
- ❑ The Earth, Moon, Sun and planets are roughly spherical shapes within our solar system.
- ❑ The geocentric model - In medieval times the Christian Church first thought that the Sun and the planets moved around the Earth.
- ❑ Copernicus and Galileo thought that the Earth and other plants moved around the sun. This was called the heliocentric model.

Geography

Subject Specific Vocabulary

Mountain	A large natural elevation of the earth's surface rising abruptly from the surrounding level; a large steep hill
Rock	Rocks are solid, natural masses of mineral material that are formed at different times and are a result of the environment present during that time
volcano	A volcano is an opening in the Earth's crust that allows magma, hot ash and gases to escape.
hot spot	An area on Earth over a mantle plume or an area under the rocky outer layer of Earth, called the crust, where magma is hotter than surrounding magma.
crust	The rocky outer layer.
mantle	The thickest section of the Earth.
magma	Molten liquid rock which collects under volcanoes.
lava	This is magma once it reaches the surface.
summit	Highest point on a mountain

Key skills

- **Identify, locate** and **describe** the location of the largest ranges of mountains in the world and the countries that they cover;
- **Explain** how the movement of plates of the Earth's crust can form ranges of fold mountains;
- **Reflect** upon, **evaluate** evidence and reach a **conclusion** and **judgement** regarding the success or failure of expedition of Mallory and Irvine to climb Mount Everest in 1924;
- Demonstrate that they **understand** how fossils form and can **explain** why Edmund Hillary and Tenzing Norgay discovered fossils of sea animals on the summit of Mount Everest in 1953;
- **Measure, record, compare** and **contrast** climate data for Derek's farm with where they live and begin to offer **reasons** for their **observations**;
- **Identify, locate, describe** and **explain** the tourist attractions of the Cambrian Mountains by **interpreting** and **making judgements** from evidence presented on Ordnance Survey maps;
- **Evaluate** a range of evidence to make a **judgement** as to why reservoirs were constructed by the City of Birmingham in the mountains of central Wales over one hundred years ago;

Sticky Knowledge about Mountains

- A mountain is a large mass of earth or rock taller than 304.8m.

A mountain range is a large area where many mountains can be found.

- George Mallory and Andrew Irvine were two British mountaineers who, in 1924 with basic equipment and very little supplementary oxygen by modern standards, attempted to climb to the summit of Everest. At 12:50 pm on 8 June 1924, they were seen for the last time by Noel Odell. They were never seen again until the body of Mallory was discovered in 1999. Irvine has never been found

- Fossils are the remains of animals and plants that lived long ago. To be classified as a fossil the remains must be over 10 000 years old and are either *body fossils* or *trace fossils*. Body fossils are the remains of animals or plants such as bones, shells and leaves. Sometimes this includes whole animals such as woolly mammoths that have been frozen in ice or insects caught in the sap of trees, which fossilises to form amber.

- The mountain ranges of Britain are all very much lower, less rugged and more rounded than the fold mountains. This is mainly because they are a great deal older. Most of the rocks, for example, that make up the Cambrian Mountains of Wales are around 400 million years old compared with the much younger age of the rocks of the Himalayas, which are around 55 million years old.

Maths – fractions

Fractions — Knowledge Organiser

Key Vocabulary

- numerator
- denominator
- unit fraction
- non-unit fraction
- whole
- equivalent
- mixed number
- improper fraction
- simplest form
- multiple
- common denominator
- common numerator

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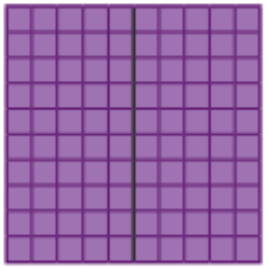
Equivalent Fractions

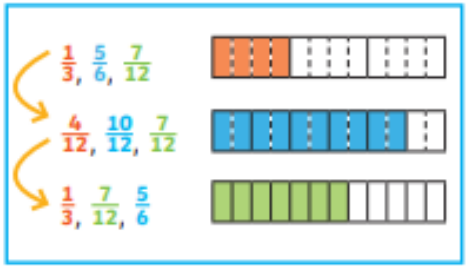
To find equivalent fractions, we multiply or divide the numerator and denominator by the same number.

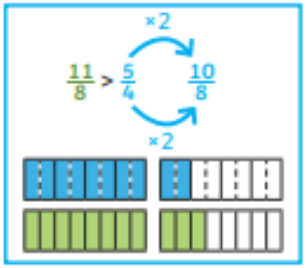


$\frac{1}{2} = \frac{5}{10} = \frac{50}{100}$ (×5, ×10; ×5, ×10)

Compare and Order Fractions

We can compare and order fractions by using common denominators.





Mixed Numbers

Mixed numbers contain a whole number and a fraction.

whole → $2\frac{1}{4}$ ← fraction

Improper Fractions

An improper fraction has a numerator which is greater than or equal to the denominator. $\frac{5}{3}$

Convert an Improper Fraction to a Mixed Number

$\frac{9}{4}$

$9 \div 4 = 2r1$ → $2\frac{1}{4}$

Divide the numerator by the denominator.

This shows you the whole number and the fraction.

Convert a Mixed Number to an Improper Fraction

Multiply the whole by the denominator to make an improper fraction.

$2\frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$

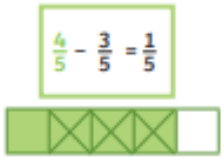
Add the fractions together.

Adding and Subtracting Fractions

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$



$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$

Maths – fractions

Fractions — Knowledge Organiser

Add Fractions Where the Total is Greater Than 1

$\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4}{8} + \frac{6}{8} + \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$

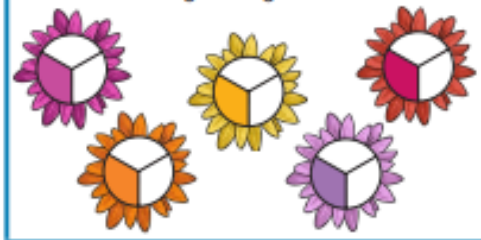
Add Mixed Numbers

$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$

$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$

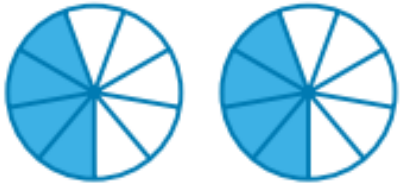
Multiply Unit Fractions by an Integer

$\frac{1}{3} \times 5 = \frac{5}{3}$



Multiply Non-Unit Fractions by an Integer

$2 \times \frac{4}{9} = \frac{8}{9}$



Multiply Mixed Numbers by Integers

Convert to an improper fraction and multiply the numerator by the integer.

$2\frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4\frac{2}{4} = 4\frac{1}{2}$

Use repeated addition.

$2\frac{1}{4} \times 2 = 2\frac{1}{4} + 2\frac{1}{4} = 4\frac{2}{4} = 4\frac{1}{2}$

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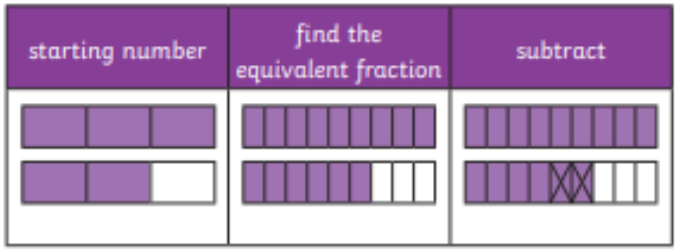
Subtract from a Mixed Number

$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$

starting number	find the equivalent fraction	subtract



Subtract Two Mixed Numbers

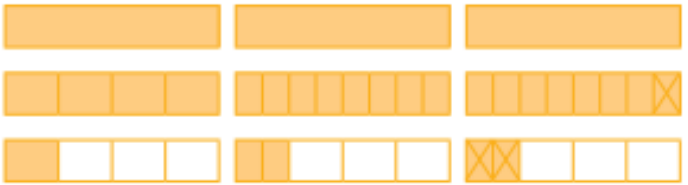
$2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$

$2 - 1 = 1$

$\frac{3}{4} - \frac{5}{8} = \frac{1}{8}$

Subtract from a Mixed Number - Breaking the Whole

$2\frac{1}{4} - \frac{3}{8} = 2\frac{2}{8} - \frac{3}{8} = 1\frac{10}{8} - \frac{3}{8} = 1\frac{7}{8}$



PSHE

Year 5 - Being My Best

SCARF

Knowledge Organiser

Key questions

Growing Independence and Taking Responsibility

How does someone become more independent as they grow older?

What responsibilities do teenagers have?

Does having more independence mean having more responsibility? Why?

Media Awareness and Safety

Are media images of celebrities true? How can media images of celebrities make someone feel?

What non-physical qualities make people attractive? Why?

Key vocabulary

perseverance media-influence
kindness celebrities
independence patience
resilience consideration
confidence
personal qualities

I can ...

I can give an example of when I have had increased independence and how that has also helped me to show responsibility.

I can name several qualities that make people attractive that are nothing to do with how they look, but about how they behave.

Computing – programming CRUMBLE

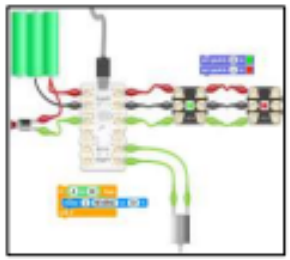
COMPUTING: PROGRAMMING

Y5

KNOWLEDGE ORGANISER

Overview

Selection in Physical Computing



- Programming is when we make and input a set of instructions for computers to follow.

-Microcontrollers are devices that can be programmed to control output devices that are connected to them.

-We use algorithms which we can plan, model, trial and debug, in order to create accurate command sequences, involving multiple output devices (e.g. LEDs and motors).

Microcontrollers, LEDs and Motors

-**Microcontrollers:** A microcontroller is a small device that can be programmed to control devices that are connected to it.

-One brand of widely used microcontroller is called a Crumble controller, which can be used to control many things, e.g. LEDs and motors.

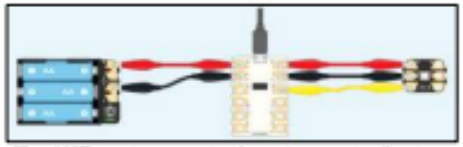
LEDs:

-LEDs are output devices that are emit light. When electricity is passed through an LED it produces light. One type of LED light, controlled by a Crumble controller, is called a Sparkle.

Motors:

-Motors are another output device. A motor can start, stop, spin forwards, spin backwards, and go at different speeds.

Creating Circuits:



-The USB port connects the microcontroller to a computer. Crocodile clips pass electricity and data through to the LED/motor.

-The + and - power pads on the Crumble should be connected with the + and - power pads on the Sparkle and battery box. The D pads on the Crumble and Sparkle should also be connected.

Programming Commands

-For programming, we should use the microcontroller software.

-Crumble uses command blocks (like Scratch).

-**Adding/Removing Commands**: To add a command block, drag it from the menu towards the program. When the grey arrow appears, the command will snap into the program. To remove a command block, drag it away from the program and back to the menu.

-**Modifying Commands:** Clicking on the colour square in the command block allows us to change the Sparkle's colour. To change the time of commands, click on the value. Delete the current value and type in the new value. Press enter after completed.

-**Count Controlled Loops:** These allow us to put programs on a loop. Count Controlled Loops are found in the 'Control' options. Drag the desired program into the Count Controlled Loop command block. 'Do until' loops allow commands to happen until a condition is met.

Sequencing and Algorithms

-A **sequence** is a pattern or process in which one thing follows another.

-We design **algorithms** (sets of instructions for performing a task) to help us program sequences involving multiple output devices (e.g. LEDs and motors).

-**Programming** is the process of keying in the code recognized by the computer into the software (using your algorithm).

Trialling and Debugging

-Programmers do not put their computer programs straight to work. They **trial** them first to find any errors:

-Sequence errors: An instruction in the sequence is wrong or in the wrong place.

-Keying errors: Typing in the wrong code.

-Logical errors: Mistakes in plan/thinking.

-If your algorithm does not work correctly the first time, remember to **debug** it.

Important Vocabulary

Programming	Circuit	Electricity	Microcontroller	Code	LED	Algorithm	Motor	Modify	Debugging

RE - Hinduism

Discovery RE Knowledge Organiser

This knowledge organiser is a guide, offering key information to point the teacher in the right direction as to the beliefs underpinning the particular enquiry. The summaries must not be taken as the beliefs of ALL members of the particular religion.

Religion /Worldview: Hinduism	**Enquiry Question: How can Brahman be everywhere and in everything?**	**Age: 9/10**	**Year Group 5 Spring 1**
In this enquiry, the children look at the Hindu belief that we all have a part of Brahman within us. They will consider how this belief could impact on their lives and the choices they make			

Core Knowledge (see also background information documents)	**Link to other aspects of belief**	**Personal connection / resonance**
Hindus believe in a universal soul or God called Brahman and that there is a part of Brahman in everyone and this is called the Atman <u>Atman</u> • The atman is translated into English as the eternal self, spirit, essence, soul, or breath. It is the true self which moves on after death or becomes part of Brahman (the force underlying all things). • The final stage of moksha (liberation) is the understanding that your atman is, in fact, Brahman. <u>Trimurti</u> Trimurti, a term meaning "having three forms," refers to the three main aspects of Brahman.	• The Caste system • Karma – actions • Dharma – duties that need to be performed • Personal choice of deities to worship • Pilgrimage to the Ganges (a way to help achieve Moksha)	• What do I think about a soul? • How am I unique? • Why is it a good to be me? • How can I use my strengths to help others?

Key Terms and definitions	**History/Context**	**Impact on believer/daily life**	**Spiral curriculum link**
Atman: eternal self **Trimurti**: three deities working together to reflect the laws of nature - namely • Brahma: creator • Vishnu: preserver • Shiva: destroyer	The cycle of life and death has always been a key part of Hindu beliefs. Accepting your place in life and the part you should play was crucial to the proper working of society through the caste system. This is not so popular now particularly in the western world.	• Beliefs about your own place in the cycle of life and death influence daily life • What actions will bring the greater chance of a better life next time? • What duties should a Hindu perform? • Do they believe in the caste system?	This enquiry builds on prior Year 3 enquiries. A deeper understanding of the connection between each person and Brahman should result from this enquiry

Home learning ideas/questions:
What do we think is the meaning of life? How can we make the best decisions to look after the people around us? Can we list each other's strengths?

Spanish - Seasons

Las estaciones

phonics

j — sound in:
- ho**j**as

ñ — sound in:
- oto**ñ**o

silent letters — 'H' is always a silent letter in Spanish (unless the word is of foreign origin). Hojas is pronounced without the 'h' as is hace.

accents — Accents indicate the vowel is stressed. As seen in the word dí-a.

vocabulary

The 4 seasons in Spanish and key language associated to each season.

En invierno hace frío.

In winter it snows.

How to link sentences together using the conjunction 'y' (and).

En invierno hace frío y nieva.

In winter it snows and it is cold.

grammar

There are 4 different ways of saying 'the' in Spanish.

el — la

Singular definite article/determiner 'the'

los — las

Plural definite article/determiner 'the'

What I will learn:

- [ ] Objective 1: I will learn the 4 seasons in Spanish with their determiners.
- [ ] Objective 2: I will learn a short phrase about winter in Spanish.
- [ ] Objective 3: I will learn a short phrase about spring in Spanish.
- [ ] Objective 4: I will learn a short phrase about summer in Spanish.
- [ ] Objective 5: I will learn a short phrase about autumn and will learn how to say which season is my favourite in Spanish.

PE - Hockey

SCHEME OF WORK: **HOCKEY:** YEAR 5

LESSON	OUTLINE OF LESSON
1	To explore the shake hands grip and the reverse grip when travelling with the ball.
2	To dribble with direction and explore the reverse stick.
3	To explore passing over distance whilst on the move and learn how to stop the ball.
4	To explore how to attack.
5	To explore how to defend and tackle.
6	To implement skills and technique learnt in competitive matches.

PE - Swimming

SCHEME OF WORK: **SWIMMING:** ADVANCED

LESSON	OUTLINE OF LESSON
1	To focus on swimming 25 meters front crawl using different breathing techniques.
2	To develop breathing techniques relating to swimming speeds in front crawl.
3	To use sculling to assist in floatation and movement in self-safety.
4	To introduce the basics of breaststroke.
5	To develop back and breast stroke.
6	To look at different self-rescue techniques and complete assessment.