KNOWLEDGE ORGANISER

£2

NAME & FORM

YEAR 7
SPRING TERM

What is an Alter-Ego?

An alter ego is a person's secondary or alternative personality. In Latin, it translates as 'other self'; it is like having a hidden self.

Key Examples of Characters with 'Alter-egos'

- **Peter Parker and Spiderman**
Peter Parker is a shy, intelligent teenage boy who is bitten by a radioactive spider and transforms into a superhero character. He has spider-like abilities and grows in confidence.
- **The Witches in 'Roald Dahl'**
To the human eye, these Witches appear as normal women. They look very ordinary and have very ordinary lives. However, they have a hatred towards children and when they take off their masks they reveal terrifying witchlike faces.
- Can you provide your own idea?

_____

What skills should you use to create an effective alter-ego character? (Can you provide your own example next to some of them?)

- ✓ A wide range of synonyms e.g.
_____

- ✓ Detailed noun phrases e.g.
_____
_____

- ✓ Interesting verbs _____
- ✓ A range of language techniques e.g. simile, metaphor
_____

- ✓ Think about SPAG (spelling, punctuation and grammar).
- ✓ Try using a wide range of punctuation! E.g. _____
- ✓ Remember accurate paragraphing.

How can I begin a new paragraph? (Can you think of your own at the end?)

- ✓ It all began when…
- ✓ Moments later…
- ✓ From around the corner I could see…
- ✓ He/she emerged, and they were dressed in…
- ✓ While this was all happening…
- ✓ _____
_____

Punctuation Rules and Reminders:

: Use a colon to start a list or introduce an idea.
E.g. the girl enjoyed painting pictures as she found it: relaxing, reassuring and productive. There was only one thing for it: she had to jump.
; Use a semi colon to link to ideas together. Try replacing the word 'because' with a semi-colon. Remember, both parts of the sentence must make sense on their own.
e.g. the day was going to great; the sun was bright and shining.
- and ( ) Dashes and brackets are similar. Both are used to add additional information, and the sentence should still make sense if you took this information out.
e.g. the day was going to be difficult (even though it was sunny) because today was the day of the maths exam.
The day was going to be difficult-even though it was sunny- because today was the day of the maths exam.

Have a go at writing your own sentence with some of this punctuation in:

_____
_____
_____

WORD BANK:

Any ambitious vocabulary you find throughout the half term add into here!

What do these skills look like in action?

In a matter of moments, his porcelain, beautiful skin quickly transformed into a bloody thirsty, monstrous mask.

He was a murderous, decapitating machine.

Blood trickled down his chin; he longer after his prey in the distance. He began to pace slowly, but stealthily after the girl who was harmlessly wandering down the street.

Clumsily, he stood on a twig. It snapped. She whipped her head round like a catapult.

She could see nothing, the street was as empty as the bottom of the sea. This was his chance- he couldn't miss it- she was so close.

He could practically smell the blood pumping around her body.

Can you continue the rest of this description, using the skills you have practised?

_____
_____
_____
_____
_____
_____

3

What different sentence types should I use in my writing?
- **Minor** – very short and not actually grammatically correct – 'Stop!', 'Go now!'
- **Simple** – one main clause – 'You need to leave.', 'She's killing us.'
- **Compound** – two main clauses, linked with either a semi-colon or a connective – 'The mayor was so evil; she had killed everyone.', 'The people were dying because the bombing was overhead.'
- **Complex** – one main clause with one or more subordinate clauses – 'Slowly, the man rose to his feet - staggered slightly - then fell tumbling down the stairs, crunching his bones as he went.'

Different sentence types have different effects:
- Minor/simple sentences = slower pace and more tension
- Compound/complex sentences = faster pace, quick action, detailed description

Brief Summary of Poems:

Spellbound by Emily Brontë

This poem describes a storm, which appears to be 'trapping' the speaker like a spell. The storm is overpowering and threatening.

Below the Green Corrie by Norman MacCaig

This poem uses a lot of personification to describe the speaker's experience when he is surrounded by mountains. He experiences a range of emotions as a result of the beauty of the mountains.

Storm in the Black Forest by D.H. Lawrence

This poem describes the sheer power of nature over man- by describing the power and beauty of a storm. It goes into detail about the beauty and strength of the lightening.

Wind by Ted Hughes

In this poem, the speaker is trapped inside a house due to the ferocious winds outside. The poem describes how chaotic and dangerous the wind is outside. The speaker goes onto say how the wind and being trapped in the house takes a toll on their mental state.

The Moment by Margaret Atwood

This poem reminds us of the power of nature over humanity. In the poem nature is given a voice and it threatens humanity. It states even though humans feel they are in control, nature can take back that control at any time.

Whispering Waves by Edel T. Copeland

This poem describes the sea and expresses the power nature holds over humanity. It addresses the emotional impact nature can have on us.

Hurricane by James Berry

This poem portrays the aftermath of a hurricane and the physical effects of such a powerful storm.

Daffodils by William Wordsworth

This poem considers the positive effects of being around nature and how it positively affects the wellbeing of people.

What do we need to include in a successful paragraph?

✓ **Point**
✓ **Example**
✓ **Analysis**
✓ **Technique**

PEA!

Can you note down a key quote for each of these poems?

| Spellbound | Wind | Whispering Waves | Daffodils |

| Storm in the Black Forest | Below the Green Corrie | The Moment | Hurricane |

Add your quotes in here:

Key Themes in Poems:

Can you fill in the missing lines with themes of your choice as we cover the poems?

● **Nature**

● _____

● **Fear**

● _____

● **Weather**

● _____

English Knowledge Organiser

Key Quotes from Poems

Spellbound- What do these quotes show?
'A tyrant spell has bound me'
'The wild winds coldly blow'

The noun 'tyrant' suggests...
The adjective 'wild' could show...

Below the Green Corrie- What do these quotes show?
'The mountains gathered around me like bandits'
'Their leader swaggered up close in the dark light'

The verb 'gathered' makes us...
The verb 'swaggered' implies...

Storm in the Black Forest- What do these quotes show?

'Jugfull after jugfull of pure white liquid fire'
'A still brighter white snake wriggles among it'

The repetition of 'jugfull' could suggest...
The metaphor 'still brighter white snake' shows us...

Wind- What do these quotes show?
'This house has been far out at sea all night'
'Winds stampeding the fields'

The preposition 'far out' makes us think...
The verb 'stampeding' could portray...

Key Quotes from Poems

The Moment- What do these quotes show?
'The trees unloose their soft arms from around you'
'The air moves back from you like a wave and you can't breathe'

The personification in 'unloose' shows...
The simile 'like a wave' could make us...

Whispering Waves- What do these quotes show?
'Powerful and strong, it breathes and roars.'
'Cascading and caressing each grain of sand'

The personification in 'breathes and roars' could imply...
The alliteration in 'cascading and caressing' creates...

Hurricane- What do these quotes show?
'Zinc sheets are kites.'
'Then growling it slunk away.'

The metaphor 'zinc sheets are kites' is used to show...
The personification in 'growling' could make us think of...

Daffodils- What do these quotes show?
'Fluttering and dancing in the breeze.'
'Ten thousand saw I at a glance'

The personification in 'dancing' suggests...
The hyperbole in 'ten thousand' could indicate...

PEA Sentence Structures:

POINT:

In the poem, one way the poet displays _____ is...

EXAMPLE:

This is shown through the use of (mention a technique here) in ' ... '

ANALYSIS:

This suggests/this shows...

It could also suggest that...

The word _____ could highlight...

Another word that supports this is _____ because...

As a reader I understand...

Key Poetic Techniques:
Rhyme- The ends of the lines have the same sound *e.g. pie and sky.*
Repetition – A word or phrase is used more than once. *E.g. faster and faster, the cheetah ran…*
Onomatopoeia- When a word sounds as it is *e.g. boom.*
Metaphor- Two things are compared by saying one thing is the other *e.g. the sun was a glittering ball in the sky.*
Simile- Comparing something using 'like' or 'as. *E.g. the sun was like a glittering diamond.*
Personification- When an inanimate object is given human features. *E.g. the tree danced in the breeze.*
Hyperbole- Exaggeration *e.g. the sun melted my skin.*

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Hundertwasser

Key features:
Colourful- line- bold- bright- shape- pattern- repetitive- emotive- unique- architecture.

Working in the style of an artist:
You need to use these techniques and features in your own study.

KEY WORDS – test yourself! (definitions on the next page)
Scratchboard- Hatching- Crosshatching- Stippling- Scumbling- Negative space- Layering – Texture- Structure- Proportion- Perspective.
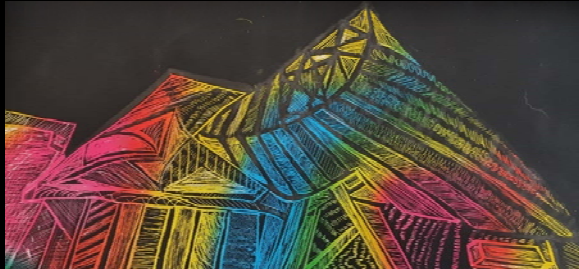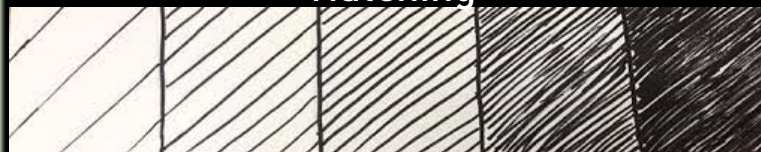

Architecture
Year 7 Spring term

Mark Making techniques

Stippling

Hatching

Scumbling

In the style of:
When creating a piece of art in the style of an artist it is very important you thoroughly understand their techniques in order to copy them effectively.
Besides using their techniques, you also need to take pride in your work and be as neat as possible. Here are some things to consider:

• Have you used directional lines?
• Have you used a range of mark making?
• Have you used correct proportions?
• Is the scale correct?
• Have you included all the detail?
• Is your colour scheme appropriate to the artist?

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KEY WORDS AND MEANINGS:

|	
Scratchboard	A form of direct engraving where the artist scratches off dark ink to reveal a white or coloured layer beneath.
Hatching	Small lines drawn quickly to represent specific textures such as fur. Hatch lines can be layered up to create tone.
Cross-hatching	A shading technique involving the use of small, intersecting lines. The closer the lines are together, the darker the tone.
Stippling	The creation of shading by using small dots. The closer the dots are together, the darker the tone.
Negative Space	The space around and between the subject of an image. Sometimes the negative space can form another image.
Layering	Placing one element over another. This could be coloured pencil, paint, collage etc…
Texture	The display of how an object would feel in reality. This can be created through mark making.
Structure	The underlying connection that holds up the subject, this could be a building or figure.
Proportion	How the sizes of different parts of a piece of art or design relate to each other.
Perspective	The representation of three-dimensional objects or spaces in two dimensional artworks.

Colour code: BLUE= Tier 3 words   ORANGE= Tier 2 words   Look out for colour coding during lessons!

Greek Theatre

Canon – moving one after another (the same movement)

Choral Speaking – Saying exactly the same lines as each other at the same time

Amphitheatre
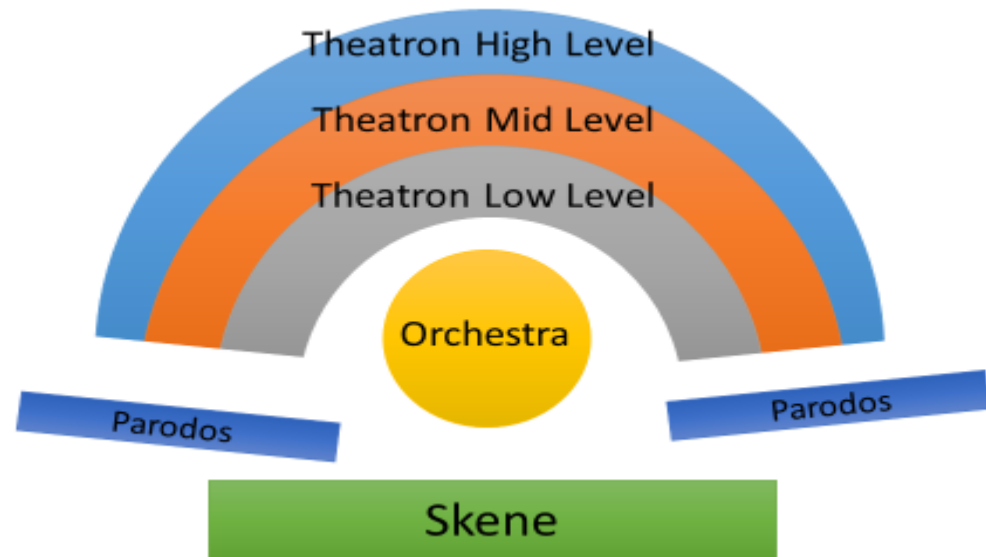
- The stage where the actors performed was called the **Skene**
- The **Theatron** was the semi-circular seating area.
- The semi-circular dancing space where the chorus performed was called the **Orchestra**
- The Skene had underground passages, trap doors and different staging levels
- **Parodos** on each side of the stage. They were used for the chorus to enter and exit the Orchestra.

The chorus was one of the most important components of the play.
They narrated and reflected on the action.
Without them, the audience would have no background information, and the play would be more confusing.
Originally the chorus had **twelve** members.
They moved and spoke as one **(Choral Speaking)**

They sang, or sometimes said, basic information.

KEYWORDS AND TECHNIQUES EXPLORED

Role Play - The act of pretending to be somebody else, of taking on a role

Split focus – Two separate scenes occurring at one time- once scene freezes whilst the other scene performs

Multi-role – When an actor plays more than one character onstage

Thought Track – When a character steps out of a scene to address the audience about how they're feeling

Levels – How high or low a character stands to show status (how powerful they are)

Devising - Creating your own performance using your own ideas

Tension - A growing sense of expectation within the drama, a feeling that the story is building up towards something exciting happening

Stereotypes - an idea or belief many people have about a thing or group that is based upon how they look on the outside, which may be untrue or only partly true.

Storytelling Theatre

Levels

Split Focus

Proxemics

Far apart

Close together
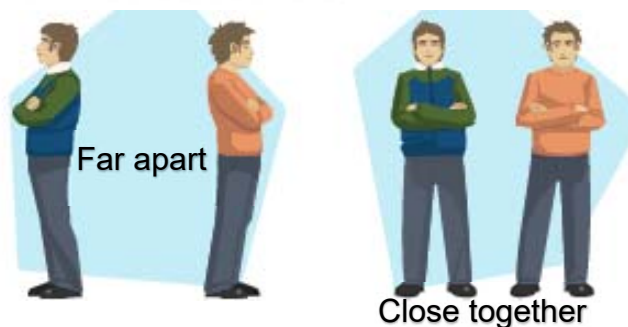
UPSTAGE RIGHT	UPSTAGE CENTRE	UPSTAGE LEFT
CENTRE STAGE RIGHT	CENTRE STAGE	CENTRE STAGE LEFT
DOWNSTAGE RIGHT	DOWNSTAGE CENTRE	DOWNSTAGE LEFT
AUDIENCE		

Key Skills:
Audience Awareness, Vocal projection, Facial Expressions, Body Language, Gestures, Pitch, Pace, Pause, Tone

Madame Tussauds

A famous wax work museum full of wax figures of famous people!

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RHYTHM and PULSE
Year 7 Spring Term

NOTE NAMES, VALUES AND RESTS

name	relative length	note	rest	in ¾ time
semibreve	whole note			4 beats
minim	half note			2 beats
crotchet	quarter note			1 beat
quaver	eighth note			½ beat
semi quaver	sixteenth note			¼ beat

TEMPO MARKINGS

The tempo of a piece of music is how fast or slow it is played.

Lento – Slowly

Largo – Slow and stately

Adagio – Leisurely

Andante – At a walking pace

Allegro – Fast

Vivace – Lively

Presto – Very quickly

Time signature

A time signature is found at the beginning of a piece of music and simply tells you how many beats to count in each bar (small section of music)

It looks like a fraction:

- indicates number of beats per bar
- indicates value of each beat
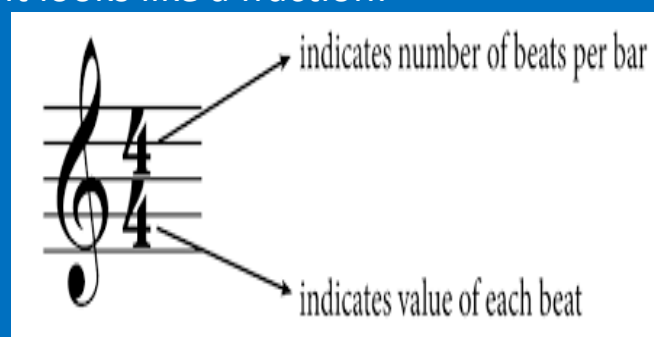
There are lots of different time signatures but you will be using this one which means you are counting 4 crotchet beats per bar.
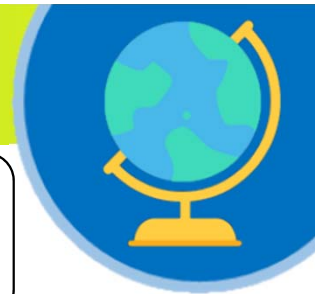
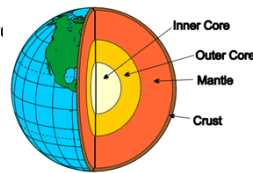| KEY WORDS AND MEANINGS (Tier 2 words in ORANGE, Tier 3 words in BLUE)	
Semibreve	A note that lasts for 4 beats
Minim	A note that lasts for 2 beats
Crotchet	A note that lasts for 1 beat
Quaver	A note that lasts for ½ of a beat
Semiquaver	A note that lasts for ¼ of a beat
Rhythm	Different lengths (durations) of notes mixed together create a rhythm. This fits into the beat.
Duration	The length of a note
Tempo	The speed of the music
Time Signature	A sign (looks like a fraction) that tells us how many beats are in each bar
Beat	The pulse in music

South America is a continent to the South West of UK. It consists of 12 countries including Brazil, Chile and Peru. Brazil is located in the East of South America. It borders 9 countries including Paraguay, Bolivia and Peru. The Atlantic ocean is on the East coast of Brazil

South America

Layers of the Earth: The inner core and the outer core are both made of nickel and iron. The mantle is made up of magma which is also called molten/melted rock. The outer layer of the earth is the crust. This is the layer of earth we live on. It is split up into sections called tectonic plates. These plates can either be oceanic or continental. The plates are constantly moving due to movement of the magma in the mantle below. Mountains form when two plates move towards each other. The Andes are located in South America. These were formed because of the North plate and the South American plate moving towards each other at a collision plate boundary.

Inner Core
Outer Core
Mantle
Crust

Magma is molten (melted) rock which is found in the mantle layer of earth.
Tectonic plates are large sections of the Earth's crust which move due to convection currents in the mantle

Year 7: South America continued

People use the Andes for a range of different things including **agriculture (farming), mining and tourism.** Each of these uses have different **opportunities** (good things) and **challenges** (negative things). There are two types of agriculture – **subsistence** which is when people grow food for themselves to eat, and **commercial** which is when people grow crops to sell for money.

WAGOLL paragraph – What are the opportunities and challenges of development in the Andes? 🙂 ☹

One of the uses of the Andes is for mining. Mining is when minerals are extracted from the earth. These minerals can then be sold for money which helps the economy of the country. In the Andes, one of the mining opportunities is at the Yanacocha gold mine in Peru. This is the largest gold mine in the world. One of the opportunities of this gold mine is the jobs that it provides. This is an opportunity because, this allows people to earn an income which can be spent on improving their quality of living. For example, the money could be spent on education for children or enough food to eat. However, because of the increase in the number of jobs, the population of the nearby town, Cajamarca has increased from 30,000 to 240,000. One of the challenges of this increase in population (people) is that there is now a lot of pressure on social services in the area such as health care, as more people are using these facilities. As well as this, with more people the crime rate has increased. Furthermore, to mine the gold, cyanide and dynamite are used. This is a challenge because, these chemicals can lead to contamination of water supplies which could lead to deaths of local people.

Tourism (Machu Picchu)   Mining (Yanacocha Gold mine)   Agriculture (Terraces)   The Andes

Tropical rainforests are found close to the equator, between the Tropics of Cancer and Capricorn. The Amazon rainforest in South America is located in the countries of Colombia, Peru, Bolivia and Brazil. Most of the Amazon rainforest is found in Brazil at 60%.

Desert
Grassland
Deciduous Forest
Rainforest
Savanna
Mediterranean
Alpine/Mountain

Rain forest area

Social = People
Environmental =Natural or built up surroundings
Biodiversity: The variety of flora and fauna in a given area

How valuable is the tropical rainforest? An example of a social use of the tropical rainforest is for hunting. For example, the Yanomami tribe hunt animals such as tapirs from the tropical rainforest. Therefore, they rely on the tropical rainforest for food. An example of an environmental use of the tropical rainforest is for flood prevention. This is because, the tree roots due to the high biodiversity of flora in the tropical rainforest are able to easily absorb water, helping to prevent flooding.

What are the advantages and disadvantages of ecotourism?

Ecotourism is environmentally friendly travel

The staff are often from the local area, providing job opportunities

The companies who run the trips, profit the most. Local people earn very little money as a result of ecotourism

Accommodation is constructed from local materials

Infrastructures built for ecotourism e.g. airports is often only beneficial to tourists. Local people cannot afford to use it.

Adaptation: The changes a species of flora (plant) or fauna (animal) makes to better survive in their environment.

The **toucan** has a long, large bill to allow it to reach and cut fruit from branches that are too weak to support its weight.

The **spider monkey** has long, strong limbs to help it to climb through the rainforest trees.

Drip tips - plants have leaves with pointy tips. This allows water to run off the leaves quickly without damaging or breaking them.

Year 7: South America continued

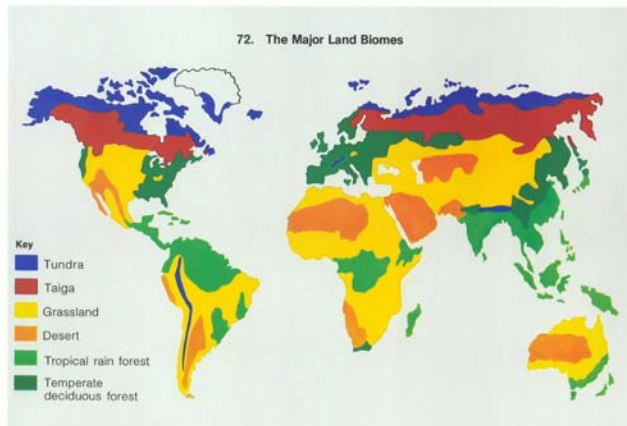WAGOLL paragraph – Should we continue to use the Amazon rainforest for its resources?

On the one hand, we should continue using the Amazon rainforest for palm oil. This is because, the palm oil industry provides thousands of jobs, especially to local people who otherwise would not be able to get a job. This is an advantage because, this allows those local people to earn an income and gain money which can be spent on improving their quality of life. For example, the money can be spent on sending children to school which in turn, with benefit their children's quality of life as they will gain an education and be able to get a well paid job in the future. On the other hand, we should not continue to use the Amazon for its resources. This is because, palm oil leads to deforestation which can result in habitat loss for rainforest species such as orangutans. This can cause the biodiversity of the tropical rainforest to decrease which can have huge environmental implications as food chains and rainforest processes are interrupted.

FOR living in a favela	AGAINST living in a favela
People within the favelas help each other – there is a strong sense of community.	Life expectancy is low (48 years) and infant mortality (babies who die before their first birthday) is high
Some favelas have had sports areas (such as football pitches) built for the local community	Favelas are often associated with gangs, violence and drugs and many people (including children) carry weapons. It can be very dangerous

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72. The Major Land Biomes

Key
- Tundra
- Taiga
- Grassland
- Desert
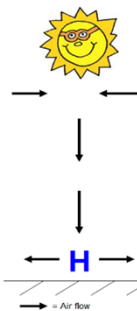- Tropical rain forest
- Temperate deciduous forest
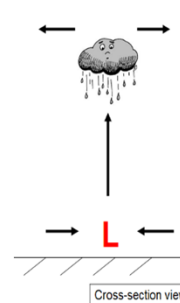
© Prentice-Hall, Inc.

A **biome** is a large ecosystem. The Earth has many different biomes, with each one containing many different flora and fauna that have adapted to the environment.

Areas of high pressure:

1. Air sinks
2. As it sinks, the air warms up.
3. Water droplets evaporate......
4. ......leaving clear skies and no precipitation.

H

Areas of low pressure:

1. Air rises
2. As it rises, the air cools.
3. Water vapour condenses to form clouds.
4. Precipitation occurs.

L

Cross-section view

The **permafrost** is a frozen layer of soil and dead plant material that in some places extends to almost 450 metres under the surface.

An example of a biome is the tundra. This biome is found in the North of Europe and North America, at very high latitudes. This biome is located north of the UK and north of the equator.

Tundra biomes form in areas of **high pressure**, where air is **sinking**. The **temperatures** stay **below 0°C** most of the year. The **ground remains frozen**, apart from a few centimetres of thaw in the summer. The **precipitation** is gentle and very low (due to it being in an area of high pressure), mainly falling as snow. The winds can be very strong. **Summers** may have many hours of continuous daylight. **Winters** are long, dark periods.
The **climatic conditions** mean that the landscape is quite bare, with little vegetation.
It is these harsh conditions of a tundra biome, which cause it to be classed as an extreme environment.

Year 7: Extreme Environments

| A challenge of the tundra is…	This challenge affects…	This is a challenge because…
The extremely harsh climate, with very cold temperatures, very low levels of precipitation and high winds	Anything which lives in the tundra, such as flora, fauna and people.	Plants and animals have to be very well adapted to survive in the tundra due to this harsh climate.
Global warming which can melt the permafrost	The permafrost layer of the ground which affects the flora that grow and the fauna that can survive in the tundra.	As the permafrost melts, shrubs and spruce that could previously not take root in the permafrost now dot the landscape, altering the habitat for native fauna.
Global warming which can melt the permafrost	The Earth's climate	As the permafrost melts, it no longer acts as a carbon sink and releases CO_2 into the atmosphere, contributing to global warming.

Alaska is located on the continent of North America.
Alaska is to the East of Russia and the West of Canada.
Alaska is located North West of the UK.

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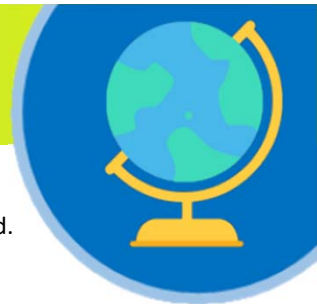
Oil and Gas in Alaska

Oil and gas is non renewable and the world is running out. Without oil and gas, the world will struggle to generate power.

In Alaska, the largest energy source is oil and gas with huge amounts located in Prudhoe Bay oil field.

In 1977, a pipeline, called the Trans-Alaskan Pipeline, was completed which transport this oil 1287km South from Prudhoe Bay to Valdez.

Once the oil reaches Valdez, it is then transported by tanker to the mainland USA.

Advantages and disadvantages of exploiting the tundra

The oil and gas industry in Alaska employs 110,000 people. This means that 110,000 people can earn a source of income

If pipelines are built directly onto the tundra or are buries, they can melt permafrost, impacting the fauna and flora which has adapted to life in the biome.
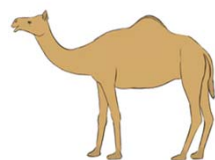
The pipeline transports 212 million barrels of oil every year, bringing in huge amounts of money.

Machinery used to extract oil can disrupt local way of life. For example, the machinery could scare away wildlife which people rely on for hunting.

Year 7: Extreme Environments

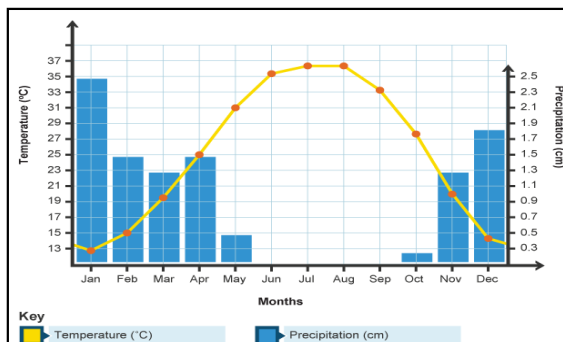Cotton grass is adapted to live in the tundra where it is extremely cold, dry and windy

Camels are adapted to live in the hot desert where temperatures can reach up to 53°C and there are very low levels of precipitation

This is a climate graph for a hot desert biome. The hottest months are July and **August at 36.5°C**. The wettest month is **January at 2.29cm**. The driest months are **June, July, August and September** where there is on average, **no precipitation**.

Why are deserts so dry?
Deserts form in areas of **high pressure**, where **air sinks**. As air sinks, it **warms** up and **water droplets evaporate**. Therefore, **clouds do not form** so there is very **little precipitation.**

Adaptations of cotton grass to the tundra:

1. Small seeds because these can then be easily dispersed by the wind.
2. Narrow leaves to reduce water loss by transpiration
3. Short in height to protect it from the wind and to allow it to be covered by snow in Winter, protecting it from the extreme cold

Adaptations of camels to the hot desert:

1. Humps which store fat because this allows them to go weeks without eating food
2. They can go weeks without drinking water because they can drink gallons in one go, this shows they are adapted to the arid (dry) conditions
3. Their body temperature can change because this allows them to reduce water loss from sweating

Desert Name	Thar Desert (World's seventh largest desert)
Location	Covers 200,000km squared on the border between Pakistan and India
Climate	Temperatures can reach as high as 53°C and there is less than 230mm of rainfall per year
Opportunities	**Mineral extraction** • The removal of mineral resources from Earth • For example, there are large amounts of gypsum which can be sold and used to make plaster **Tourism** • People visit the desert for recreation and their own leisure • There is an annual festival in the Thar desert which attracts thousands of people
Challenges	**Melting tarmac** • The extreme temperatures can cause tarmac roads to melt • This limits accessibility as people struggle to move between areas **Water insecurity** • As the population of the Thar desert has increased and agriculture and industry have developed, water has become a scarce resource

Topic 3: Medieval Religion

Why was the Church so important?
People in England were Christians. This religion had been introduced by the **Romans** and had been continued by the **Anglo-Saxons, Vikings and Normans.** People wanted to be good Christians and so they would listen to the Church and those who worked for it.

Medieval views of Heaven:
A Christian who lived their life in the right way and only did good was believed to go to heaven. This is believed to be a paradise to spend all eternity in after you died. To get to heaven, you could:

- Pray regularly
- Donate **tithes** (money to the Church)
- Travel on a **pilgrimage**
  Fight (or die) in a **crusade**

Medieval views of Hell:
On the other hand, a Christian could live their life in a wicked way and they could **sin.** For doing this they could risk going to Hell. Priests warned people about Hell in two ways:

- Speaking about the dangers of sinning in sermons
- Showing **peasants** horrible pictures of what Hell may look like called **doom paintings**

Who was powerful in the Church?

People believed priests were powerful and influential as they understood God, Heaven, and Hell. Many peasants were illiterate and could not read for themselves. Powerful **clergy** included:

- The **Pope** who was the head of the Catholic Church in all of Europe. He declared crusades to the Holy Land.
- The **Archbishop of Canterbury**. He was the head of the Church in England. He took his orders from the Pope.

What happened between Becket and King Henry II?
One famous Archbishop of Canterbury was Thomas Becket. He was Archbishop under King Henry II of England. The two were close friends until:

- Henry II was upset that Becket would not change the Church to make the Crown more powerful
- Becket fled to France from 1164 to 1170
- He returned and the pair still were not friends
- Four knights on behalf of the king killed Becket in Canterbury Cathedral

What were pilgrimages?
Christians who really wanted to show their dedication to God would become **pilgrims**. They would travel long distances to important locations linked with Christianity such as Walsingham, Lindisfarne or even important overseas locations like Jerusalem. They believed doing so could make them closer to God and they could even be healed or experience **miracles!**

Why did people fight over the Holy Land?
The **Holy Land** is territory in the Middle East. Multiple religious groups believe it is important for varying reasons. Christian warriors known as **crusaders** fought Muslim warriors known as **Saracens** for control of the region. Everyone from peasants to kings fought! The reason crusaders battled include:
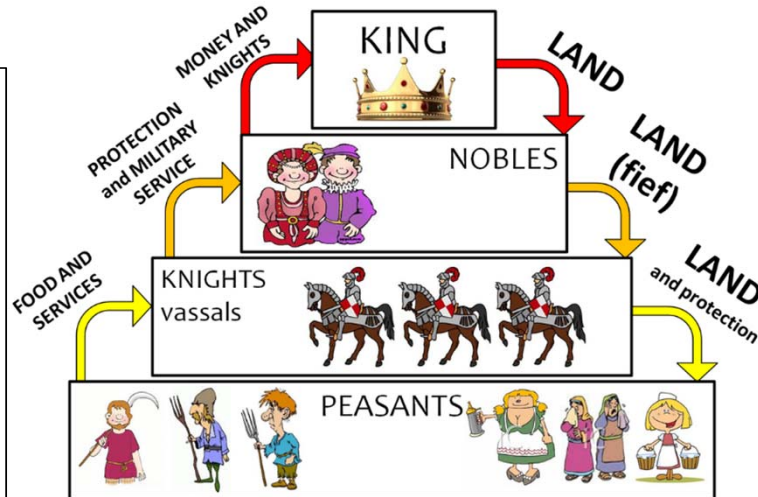
- Religious reasons. Crusaders were serving their God and their sins were forgiven if they went on crusade (even if they died!)
- Economic reasons. They could loot resources and take riches from the enemy. They could tax conquered people.
- Political reasons. They could set up powerful states and make themselves more powerful.

History Knowledge Organiser

Topic 4: Medieval Monarchs

Who had power in Medieval England?
When the Normans conquered England they realised that they needed help controlling the country. The King gave land in return for loyalty and taxes. Those further down the **feudal system** were meant to be loyal to those above them, even though at the very bottom the peasants had very little political and economic power. Those lower down the feudal system were not meant to challenge those above them. As well as this, the **monarch** was believed to have been chosen by God.

Feudal Pyramid of Power

- KING
- MONEY AND KNIGHTS / LAND
- NOBLES
- PROTECTION and MILITARY SERVICE / LAND LAND (fief)
- KNIGHTS vassals
- FOOD AND SERVICES / LAND and protection
- PEASANTS

Famous Medieval Queens of England:
Men were believed to be more powerful than women and were believed to be suited to ruling. This did not stop women from having a position of power and influencing English history:

Empress Matilda – In the 12th Century she had claim to the English throne. She did not get chance to rule for long but her son Henry II became heir and ruled next.

Eleanor of Aquitaine - In the 12th Century she travelled on a crusade, successfully demanded a divorce, and formed a rebellion and even spent time arrested.

Isabella of France - In the 14th Century she received a high quality education, joined her husband in battle against the Scots and started a rebellion for her son.

Margaret of Anjou – In the 15th Century she ruled on behalf of her husband when he was unwell to do so. She gathered troops and participated in battles.

Who was King John?
John ruled from 1199-1216. He was unlikely to have become King. He had very little political experience. He began ruling when England had no money – it had been spent on the Third Crusade! He became very unpopular by demanding high taxes.

Why did the barons challenge the Feudal System?
The barons were unhappy with King John. King John charged high taxes, lost land in France, and is believed to have killed his nephew Arthur. The barons demanded more power as they helped the monarch to rule the country.

What did the barons do?
In 1215 they forced King John to sign the Magna Carta. This was a legal document. It meant the King was not above the law and had to follow rules. For example, he could not raise taxes on his own. John and other kings agreed to the rules of the Magna Carta.

What did the Magna Carta change?
Kings now had to follow a legal system to raise taxes and to arrest people. He could not take more money from his subjects without their approval. This gave the barons more power, and eventually under Edward I a parliament was established. However peasants did not receive any legal protection and did not have any political status as a result of the Magna Carta.

Who was King Edward I?
Edward ruled from 1272-1307. He was a very experienced military king. Both Wales and Scotland were conquered by Edward and he ordered stone castles built to keep control of them. However Edward faced rebellions from the Scottish. Rebel leaders included Robert the Bruce and William Wallace.
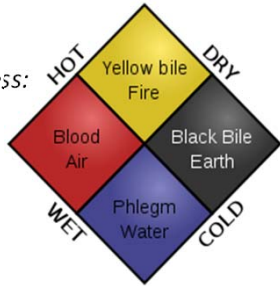
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Topic 5: Medieval Medicine

What was Medieval medicine like?
Before the discovery of germs they were very different ideas on what caused sickness:

Four Humours – the idea behind this theory was that the body was made up of four different parts and if there was an imbalance then the person would be ill.

Supernatural – many believed in superstitious causes of disease. Ghosts or witches could cause somebody to fall ill. If the planets were in the wrong position then it could cause people to become unwell.

Religion – people in Medieval times believed if they were good then God would reward them. If they were sinful then God would punish them with disease. Some believed the plague was God ending all life on Earth.

Miasma (bad smells) – Medieval towns were very filthy places and some people believed bad smells caused by butchers, tanners and other businesses could pollute the atmosphere and cause disease.

What was the Black Death?
The Black Death is also known as the **bubonic plague**. It was spread by fleas carrying a deadly type of bacteria. The fleas, spread by rats, would bite humans. Symptoms included swellings, black marks on the skin, high fever, and eventually death.

What cures did people use for the Black Death?
The **barber surgeons** and **monks** of Medieval Europe tried to do what they could to treat the disease. It killed 30-60% of Europe. Those who did survive were often left disfigured and ill. Treatments included:

Prayer – they believed God would forgive them and their disease might go away. Some extreme Christians known as **flagellants** would even hurt themselves to be forgiven.

Bloodletting – bloodsucking leeches and medical tools would be used in an attempt to drain blood from a sick patient.

Natural cures – herbs and plants found in nature were used to try and relieve the symptoms

What were the consequences of the Black Death?
The Black Death arrived in England in 1348 and lasted until 1350. However it caused lasting changes:

Plague epidemics – every few years cases of plague would return and many more would die of disease

Starvation – farmland was abandoned and villages were deserted. Crops were not looked after and so there was a decrease in food leading to starvation.

Increase in food price – those who did still have crops to sell started to charge people more money for their goods.

Increase in crime – people began to live as if they were living their last day. They drank heavily and broke the law.

Why did the peasants challenge the Feudal System?
The Black Death had killed lots of peasant workers. Fewer peasant workers had to work even harder to collect food to feed their lords. Many of these did not receive wages. In 1381 peasants rebelled in the Peasants Revolt. They marched on London, met with King Richard II and left believing that Richard II would give them more power and wages.
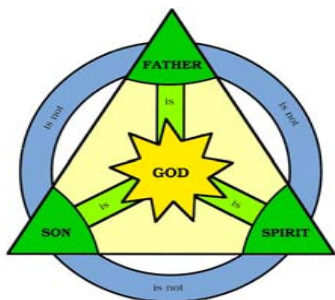
The King went back on his word and killed the peasant leaders. Over time unpopular taxes were stopped and lords of villages had to pay their peasants more and charged them less rent. Within 50 years peasants were allowed to buy their own freedom and move around the country freely.

Year 7 Knowledge Organiser – Who was Jesus?

Christians believe Jesus is part of the Trinity. This means they believe he is God in human form, otherwise known as the Christ or King sent to teach people what God wants.

The 3 parts of the One God in Christianity are: The Father, the Son (Jesus) and the Holy Spirit

When Jesus was **baptised** in the river Jordan, it signals the start of his **ministry**. This is the point where Jesus goes out to teach people parables and perform **miracles** to teach what God wants. According to the Bible it states that God spoke (like a father) to Jesus and the Holy Spirit descending on Jesus like a dove. This shows Jesus is part of the **Trinity.**

Jesus taught people about what makes good behaviour. His most famous teaching is 'Love your neighbour'. This means to **respect** and care for everyone because everyone is your neighbour.

He also taught to care for the **vulnerable** and the poor . He also taught to forgive people in order to let go of hate and bitterness. He also taught to never use violence.

Top Quotes from Jesus:
- '*Love your neighbour*'
- *'Blessed are the 'peacemakers*
- *'Forgive 70 times not 7'*
- *'Turn the other cheek'*
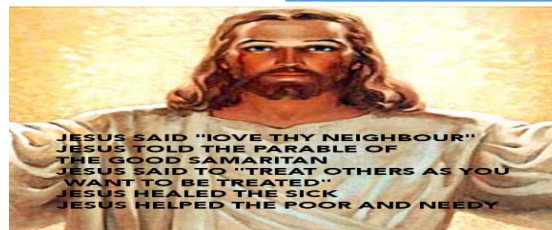
The Disciples:
Jesus chose 12 men who he recruited to be his main followers to help him spread his messages to the people.

Jesus taught **parables,** such as the **Prodigal Son**
Parables are stories with a hidden meaning and he taught them about God and how to behave. One of his parables was the Prodigal Son. In this story, a son turns his back on his family and spends all of his father's money. When he runs out of money and is left jobless he returns to his father to say sorry. His father has a big party and welcomes him home.
- The father represents God
- The Prodigal (Lost) son represents the oldest son who leaves home with the money but returns
- The meaning of this story was that G od will always **forgive** if you say sorry and mean it by showing it through actions and not just saying it.

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Jesus' miracles over nature.

We studied the traditional interpretation that Jesus has power over nature & could do the impossible, which shows his connection to God. However, we also considered an alternative, more modern interpretation where perhaps the miracles were co-incidence but Jesus still shows himself to be a special leader of people and leader from God.

Alternative Interpretation:
The crowd are described like *'sheep without a shepherd'.* This means they were lost and had no leader. Jesus stops to teach them because he feels compassion. This means he cared that they were in need so he compelled to help them. Five thousand people are fed with only 5 loaves and 2 fish, which would not be enough to go round. The miracle is that Jesus multiplied the food to feed everyone. However, it states that the crowd were satisfied. Perhaps their hunger was NOT satisfied but instead they are now satisfied spiritually as they now have a leader to guide them and they are not lost in their way.

The Feeding of the 5000 people:
Jesus landed his boat and saw a large crowd of about 5000 people. He had **compassion** on them as they *'looked like sheep without a shepherd'* and so he stopped to teach them. The crowd grew hungry. Jesus said,' what food is there?' "We have here only five loaves of bread and two fish," they answered. Taking the five loaves and the two fish and looking up to heaven, he gave thanks and broke the loaves. They all ate and *were satisfied.*

The Calming of the Storm:
A furious **squall** (storm) came up, and the waves crashed over the boat, so that the boat nearly sank. Jesus was at the front sleeping. The disciples woke him and said to him, **"Teacher, don't you care if we drown?"** He got up and shouted at the wind and waves, **"Quiet! Be still!"** Then the wind died down and it was completely calm. He said to his disciples, "Why are you so afraid? *Have you no faith?"* They were amazed and asked each other, "Who is this? Even the wind and the waves obey him!"

Alternative Interpretation:
Jesus was asleep on the boat and the disciples woke him up. Perhaps he was telling the disciples to be quiet and not the storm because they had woken him up. This is supported by him telling them , 'Have you no faith?'.

Jesus was criticising the lack of faith in him or in God that God would protect them. The disciples were panicking and likely to tip the boat over.
Jesus is teaching them and us not to panic in a crisis but to put faith in God and in each other to solve the problem.
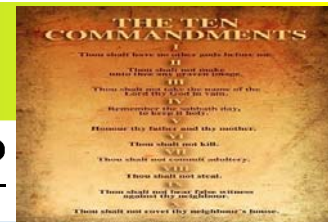
Unit 3: Spring 2 What are the beliefs and religious practices in Judaism?

What do Jews believe about God?

Jewish people will never have an image of God. God reveals himself through prophets. Moses and the Burning Bush show God to be powerful and mysterious but that he will also save his people (the Jews/Hebrews).

- God is a saviour
- God is mysterious
- God is like a shepherd – a guide and a leader
- God protects
- God punishes evil

Passages from Jewish scripture, like the Torah, reveal that God cares for the Jewish people and will do anything to save them against their enemies. This is shown in the story of David and Goliath and in the 10 Plagues of Egypt.

How and why do Jews remember the Passover (Pesach)?

Approximately 4000 years ago the Hebrew (Jewish) people were held as slaves in Egypt. God sent the prophet Moses to deliver 10 plagues to convince the Pharaoh (King) to let God's people go free. The Pharaoh was stubborn and refused until the final most deadly plague. The 10th plague was known as the Passover because *the angel of death passed over the Jewish houses but passed into the Egyptian houses killing the first born sons.*

Jews remember this time because:

a) Remember their ancestors held in slavery
b) To say thank you to God for saving them from Egypt and starting the Jewish faith.

Jewish families read the Haggadah story of what happened and eat a special meal called the Seder. The Seder meal has symbolic items present which reminds them of the Passover story.

The Seder Plate for Passover

The seder plate

- Bitter herbs, the bitter times as slaves
- Matzah (unleavened bread), as there was no time in the Escape to let it rise
- Roasted egg; a new life after Egypt
- Parsley, a spring vegetable and sign of new life
- Charoset (a mix of apples, cinnamon, nuts and wine), the mortar used making bricks as slaves
- Lamb bone, the sacrifice on the last night
- Salt water, the tears of the slaves

What are the 10 Commandments?

God gave Moses the 10 Commandments to keep the Jewish community faithful to God and to help them behave in a way that God wants. The 4th rule is 'Remember the Sabbath Day and keep it holy'. This meant that God would be remembered every week. Rules 5-10 are about respectful and safe behaviour. E.g Do not kill and Do not steal.

What is Shabbat?

Jews celebrate Shabbat every Friday evening to Saturday evening to remember God and say thank you for creating the world. In their creation story God makes the world in 6 days and rests on the 7th, which is Saturday.

What do Jews do?

- Light candles and drink wine called a Kiddush blessing to start Shabbat
- Eat a family meal on the Friday evening
- Jews don't do any cooking, cleaning, school work and rest like God in the creation story
- End Shabbat by lighting a 6 wick Havdalah candle and smelling a spice box to symbolise that God has giving **them sweet blessings for the rest of the week.**

What is Kosher Food?

Kosher means 'clean' and concerns itself with food hygiene and what Jews can eat according to laws given by God to Moses. Jews still follow these rules today show commitment to God.
Forbidden/Trefer food = pigs, shell fish, mixing meat and dairy products, unwashed veg.
Meat eaten is only considered kosher if it is killed by the throat of the animal being slit and the blood drained from its body.

ANGLES

Key Concepts
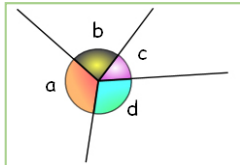
Angles at a point add to 360°

Angles on a line add to 180°
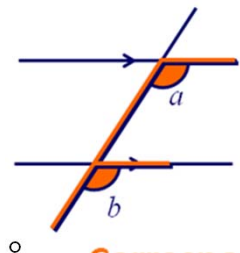
Corresponding angles are equal.
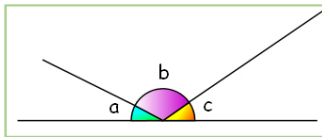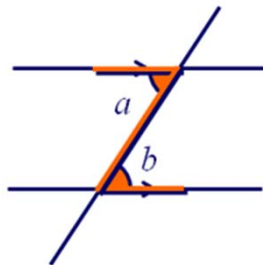
Alternate angles are equal.

Key Words

Angle: This is formed by two lines joined by a common endpoint

Quadrilateral: 4 sided shape

Intersect: Two lines which cross

Parallel: Two lines which never intersect. Marked by an arrow on each line

Transversal: A line which intersects two parallel lines

Examples

$29° + 72° = 101°$
$180° − 101° = 79°$
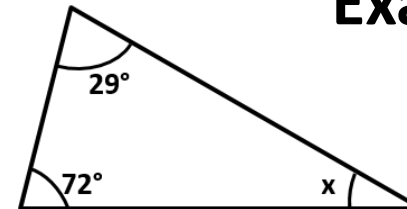
$169° + 31° + 90° = 290°$
$360° − 290° = 70°$
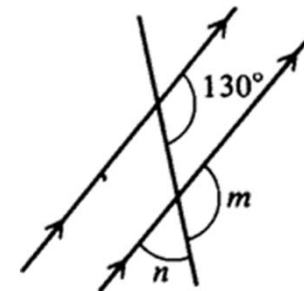
m = 130° as corresponding angles are equal.
n = 50° as angles on a line add to 180°
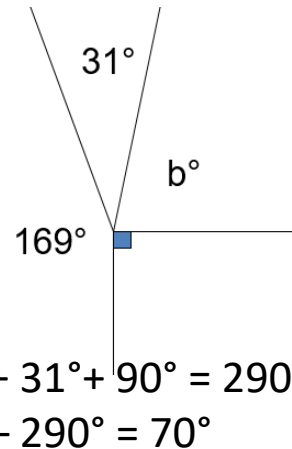
Year 7

Tip
These angle properties can be used alongside all the other angle properties that you have learnt.

Questions

1) Find the missing angles:

2)

ANSWERS: 1) 56° 2) x = 120°, y = 120°, z = 120°
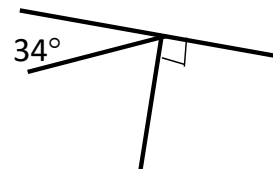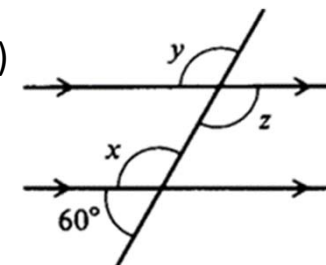
Maths Knowledge Organiser
DECIMALS

Key Concept
Multiply/Divide by powers of 10

10 000	1000	100	10	1	•	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					•			

Multiplying

X 10   digits move LEFT **1** space
X 100   digits move LEFT **2** spaces
X 1000   digits move LEFT **3** spaces

←

Dividing

÷ 10   digits move RIGHT **1** space
÷ 100   digits move RIGHT **2** spaces
÷ 1000   digits move RIGHT **3** spaces

→

Rounding rules:
A value of 5 to 9 rounds the number up.

A value of 0 to 4 keeps the number the same.

Key Words
Decimal: A number that contains a point
Ascending Order: Place in order, smallest to largest.
Descending Order: Place in order, largest to smallest.

Round 3.527 to:

a) 1 decimal place

    3 . 5 2 7 → 3.5

b) 2 decimal places

    3 . 5 2 7   3.53
         →

Examples

Ordering Decimals
    0.3, 0.21, 0.305, 0.38, 0.209
Add zeros so that they all have the same number of decimal places.
    0.300, 0.210, 0.305, 0.380, 0.209
Then they can be placed in order:
    0.209, 0.21, 0.3, 0.305, 0.38

Multiplying/Dividing by powers of 10
    3.4×100

100	10	1	$\frac{1}{10}$
		3	4
3	4	0	

Year 7

Tip
- Add digits when ordering decimals.
- The number of zeros tells you the number of places to move the digits.

Questions
1) Order   1.52,   1.508,   1.5,   1.05,   1.51
2) Work out   a) 1.35×10 b) 0.6×100 c) $4.5 \div 100$
3) Round 5.657 to 2dp

ANSWERS: 1) 1.05, 1.5, 1.508, 1.51, 1.52   2) a) 13.5   b) 60   c) 0.045   3) 5.66

Linear Graphs

Key Concept

Substitution – This is where you replace a number with a letter

If a = 5 and b = 2

a + b =	5 + 2 = 7
a – b =	5 – 2 = 3
3a =	3 × 5 = 15
ab =	5 × 2 = 10

Key Words

Co-ordinate: A pair of numbers which describe the position on a grid

Intercept: Where two graphs cross

Linear: A linear graph is a straight line

Gradient: This describes the steepness of the line.

y-intercept: Where the graph crosses the y-axis.

Examples

A: y = 2   B: x = 1
C: y = -3   D: y = x

Draw the graph of y = 2x - 1

X	- 2	- 1	0	1	2
Y	-5	-3	-1	1	3

Tip
Parallel lines have the same gradient

Year 7
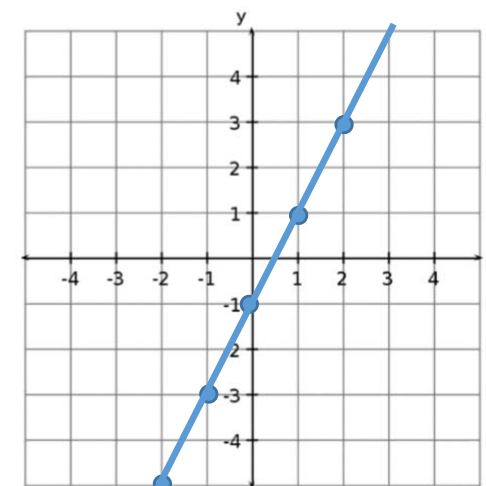
Questions
1) Draw the graph of y = 3x – 2 for x values from -3 to 3 using a table.

24

PERCENTAGES

Key Concept

Fraction

Decimal ↔ Percentage

×100

÷100

Numerator ÷ denominator

Write over 100
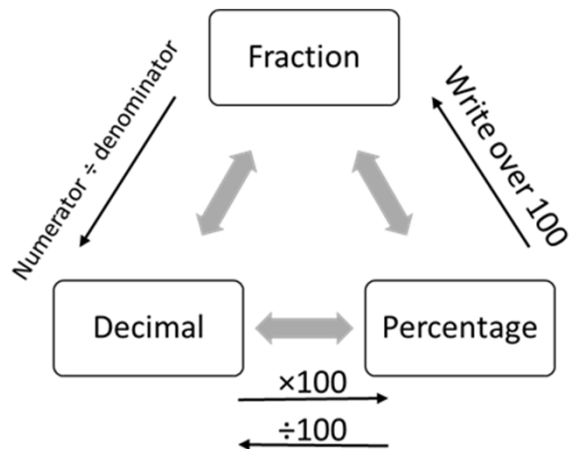
Key Words

Percentage: Is a proportion that shows a number as parts per hundred.

Fraction: A fraction is made up of a numerator (top) and a denominator (bottom).

.

Examples

Non-Calculator

$$\frac{3}{4} \ of \ 32 =$$
$$32 \div 4 \times 3$$
$$= 24$$

$16\% \ of \ 240$

$10\% = 24$
$5\% = 12$
$1\% = 2.4$

$= 24 + 12 + 2.4$
$= 38.4$

Calculator

Find **32%** of 54.60 =
0.32 × 54.60 = 17.472

Year 7

Tip

There is a % function on your calculator.

To find 25% of 14 on a calculator:

2, 5, SHIFT, (, ×, 1, 4, =

Questions

1) Find these fractions of amounts:

a) $\frac{1}{3} \ of \ 15$ a) $\frac{1}{5} \ of \ 65$ a) $\frac{2}{7} \ of \ 14$ a) $\frac{4}{9} \ of \ 45$

2) a) 35% of 140   b) 21% of 360

25

3D SHAPES

Key Concept

Cube
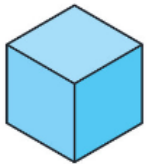
Faces – 6
Edges – 12
Vertices – 8

Cuboid
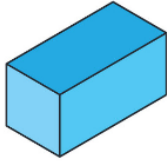
Faces – 6
Edges – 12
Vertices – 8

Hexagonal Prism
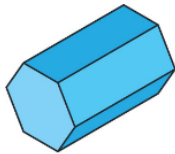
Faces – 8
Edges – 18
Vertices – 12

Triangular Prism
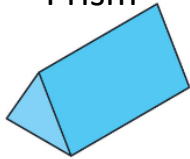
Faces – 5
Edges – 9
Vertices – 6

Key Words

Volume: The amount of space that an object occupies.

The **surface area** of an object is the sum of the area of all of its faces. It is measured in units squared e.g. cm^2.

Cuboid: 3D shape with 6 square/rectangular faces.

Vertices: Angular points of shapes.

Face: A surface of a 3D shape.

Edge: A line which connects two faces on a 3D shape.

Examples

$$Volume = 4 \times 9 \times 2$$
$$= 72 cm^3$$

Surface area:
$$Front = 4 \times 2 = 8$$
$$Back = 4 \times 2 = 8$$
$$Side\ 1 = 9 \times 2 = 18$$
$$Side\ 2 = 9 \times 2 = 18$$
$$Bottom = 4 \times 9 = 36$$
$$Top = 4 \times 9 = 36$$
$$Total = \mathbf{124 cm^2}$$

Tip

Remember the units are cubed for volume.

Year 7

Formula

$$Cuboid\ Volume = l \times w \times h$$
$$Prism\ Volume =$$
$$area\ of\ cross\ section \times length$$

Questions

Find the volume and surface area of the cuboid:

8 cm
40 cm
18 cm

26

ANSWERS: Volume = 5760 cm³ Surface area = 2368 cm²
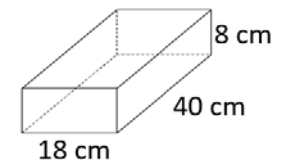
INTRODUCTION TO PROBABILITY

Key Concept

Chance

Impossible — Even Chance — Certain

Unlikely — Likely

Probability

0	0.25	0.5	0.75	1
0%	25%	50%	75%	100%
0	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
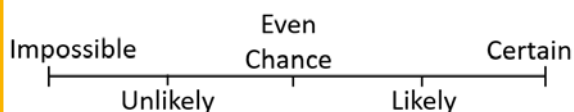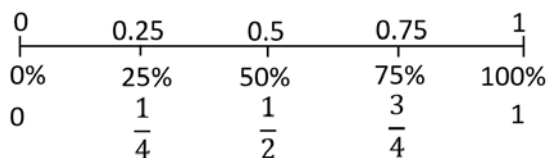
Probabilities can be written as:
- Fractions
- Decimals
- Percentages

Key Words

Probability: The chance of something happening as a numerical value.

Impossible: The outcome cannot happen.

Certain: The outcome will definitely happen.

Even chance: The are two different outcomes each with the same chance of happening.

Expectation: The amount of times you expect an outcome to happen based on probability.

Examples
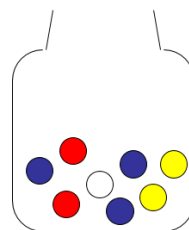
1) What is the probability that a bead chosen will be **yellow**.
Show the answer on a number line.

$$Probability = \frac{Number\ of\ favourable\ outcomes}{Total\ number\ of\ outcomes}$$

$$P(Yellow) = \frac{2}{8} = \frac{1}{4}$$

0    $\frac{1}{8}$ $\frac{2}{8}$ $\frac{3}{8}$ $\frac{4}{8}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ 1
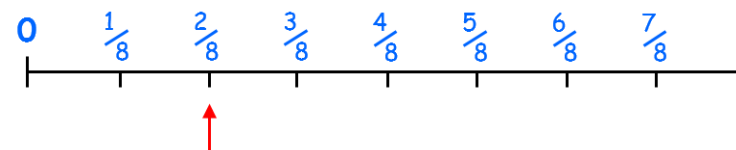
2) How many **yellow** beads would you **expect** if you pulled a bead out and replaced it 40 times?

$$\frac{1}{4} \times 40 = \frac{1}{4}\ of\ 40 = 10$$

Year 7

Tip
Probabilities always add up to 1.

Formula
Expectation
$= Probability \times no.of\ trials$

Questions
In a bag of skittles there are 12 red, 9 yellow, 6 blue and 3 purple left.
Find: a) P(Red) b) P(Yellow) c) P(Red or purple) d) P(Green)

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ANSWERS: 1) a) $\frac{12}{30} = \frac{2}{5}$ b) $\frac{9}{30} = \frac{3}{10}$ c) $\frac{15}{30} = \frac{1}{2}$ d) 0

Maths Knowledge Organiser

RATIO

Key Concept

2 parts → **2:6** ← 6 parts

$$= 1:3$$

$$= \frac{1}{4}$$
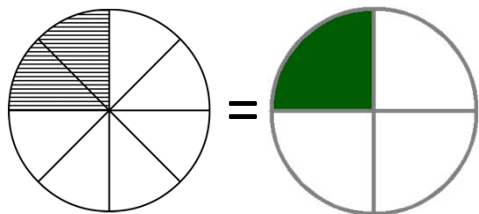
Key Words

Ratio: Relationship between two numbers.
Part: This is the numeric value '1' of, would be equivalent to.
Simplify: Divide both parts of a ratio by the same number.
Equivalent: Equal in value.
Convert: Change from one form to another.

Examples

Simplify $60 : 40 : 100$

$\div 10$

This could have been done in one step by dividing by 20.

$6 : 4 : 10$

$\div 2$

$3 : 2 : 5$

Write $2 : 5$ in the form $1 : n$

$2 : 5$

$\div 2 \qquad \div 2$

$1 : 2.5$

Share £45 in the ratio $2 : 7$

$45 \div 9 = 5$

£10 : £35

2	:	7
5	5	
5	5	
=10	5	
	5	
	5	
	5	
	5	
	=35	

Joy and Martin share money in the ratio $2 : 5$. Martin gets £18 more than Joy. How much do they each get?

$18 \div 3 = 6$

£12 : £30

2	:	5
6	6	
6	6	
	6	
	6	
	6	
=12	=30	

Tip

Its often useful to write the letters above the ratio. This helps you keep the order the correct way round.

Year 7

Questions

1) Simplify a) $45 : 63$ b) $66 : 44$ c) $320 : 440$
2) Write in the form $1 : n$ a) $5 : 10$ b) $4 : 6$ Share 64 in the ratio $3 : 5$ 4) Write the ratio $1 : 4$ as a fraction.

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ANSWERS: 1) a) 5 : 7 b) 3 : 2 c) 8 : 11   3) 24 : 40   4) $\frac{1}{5}$ 2) a) 1 : 2   b) 1 : 1.5

Son= they are
Hay - there is
Es - is
Tiene - has

Tenses

PRESENT	-ar verbs	-er verbs	-ir verbs
I	-o	-o	-o
you	-as	-es	-es
he/she/it	-a	-e	-e
we	-amos	-emos	-imos
you (pl)	-áis	-éis	-ís
they	-an	-en	-en

PRESENT	-tener – to have	Ser – to be	Llevar – to wear
I	Tengo	Soy	Llevo
you	Tienes	Eres	Llevas
he/she/it	Tiene	Es	Lleva
we	Tenemos	Somos	Llevamos
you (pl)	Tenéis	Sois	Lleváis
they	Tienen	Son	llevan

Opinions & Pronouns

Me gusta (mucho)

Me encanta

me chifla

Me interesa

Me asignatura preferida es

No me gusta (nada)

Odio

detesto

Me irrita

Me molesta –annoys me

Connectives

También	also
Pero	but
sin embargo	however
que	which
Donde	where
Porque	because

Complexity

Suelo estudiar – I tend to study
Quiero estudiar – I want to study
Tengo que estudiar... - I have to study
Me gustaría estudiar – I would love to have

aburrido - boring
Bueno -good
Divertido - fun
Difícil – difficult
Duro - hard
Fácil - easy
Interesante -interesting
Relajante - relaxing
Simpático – nice
Estricto – strict
Emocionanate – exciting
Práctico – practical
Útil – useful
inútil - useless

El español es divertidO

La historia es divertidA

Las ciencias SON divertidAS

El español y la historia SON divertidOS

29

Los países	Countries
¿de dónde eres? Where are you from?	
Soy de…	I'm from…
Australia	Australia
Escocia	Scotland
España	Spain
Estados Unidos	United States
Gales	Wales
Inglaterra	England
Irlanda	Ireland
Jamaica	Jamaica
México	Mexico
Nigeria	Nigeria
Paquistán	Pakistan

La nacionalidad	Nationality
¿Cuál es tu nacionalidad?	What nationality are you?
Soy …	I am …
¿Eres …?	Are you …?
australiano/a	Australian
escocés/escocesa	**Scottish**
español/a	**Spanish**
estadounidense	American
galés/galesa	**Welsh**
inglés/inglesa	**English**
irlandés/irlandesa	**Irish**
jamaicano/a	Jamaican
mexicano/a	Mexican
nigeriano/a	Nigerian
paquistaní	Pakistani

Hablo	I speak…
e.g. hablo inglés	I speak English
alemán	German
catalán	Catalan
español	Spanish
francés	French
galés	Welsh
inglés	English
italiano	Italian

El horario	The timetable
Empieza a …	It begins at …
Termina a …	It finishes at …
¿A qué hora empiezan/ terminan las clases?	What time do the lessons begin/end?
Las clases empiezan/ terminan a …	Lessons begin/end at…
Tenemos … (a)	We have … (at)
después	then/afterwards
por la tarde	in the afternoon
¿Cuándo es la hora de comer?	When is the lunchbreak?
La hora de comer es a la/las	Lunchtime is at…
A la una	AT 1 o'clock
A las dos	AT 2 o'clock

La hora	Time
¿Qué hora es?	What time is it?
Es la una.	It's one o'clock.
Son las cinco.	It's five o'clock.
Son las cinco y diez	It's 10 past 5
Son las cinco y cuarto	It's quarter past 5
Son las cinco y veinte	It's 20 past 5
Son las cinco y media.	It's half past 5.
Son las seis menos cinco	It's 5 to 6.
Son las seis menos cuarto	It's quarter to 6
Son las seis menos veinte	It's 20 to 6
Son las doce.	It's twelve o'clock.
Es mediodía	it's midday
Es medianoche	it's midnight
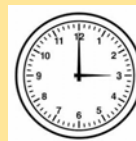
Las asignaturas subjects	School
la educación física	PE
El deporte	Sport
el inglés	English
el español	Spanish
el francés	French
el alemán	German
el teatro	Drama
el dibujo/el arte	Art
la geografía	Geography
la historia	History
la informática	ICT
las matemáticas	Maths
las ciencias	sciences
la música	Music
la religión	RE
la tecnología	Technology
la física	Physics
La quimica	Chemistry
La biología	Biology

Son= they are
Hay - there is
Es - is
Tiene - has

Tenses

PRESENT	-ar verbs	-er verbs	-ir verbs
I	-o	-o	-o
you	-as	-es	-es
he/she/it	-a	-e	-e
we	-amos	-emos	-imos
you (pl)	-áis	-éis	-ís
they	-an	-en	-en

Key verbs
Desayunar – to have breakfast
Tomar – to have (food and drink)
Comer – to eat
Beber – to drink
Merendar – to snack
Cenar – to eat dinner/tea

Meal times
el desayuno   breakfast
la comida   lunch/dinner
la merienda   afternoon snack
la cena   evening meal (tea)

Opinions & Pronouns

Me gusta (mucho)
Me encanta
 me chifla
Me interesa
Me asignatura preferida es

No me gusta (nada)
Odio
detesto
Me irrita
Me molesta –annoys me

Connectives

También	also
Pero	but
sin embargo	however
que	which
Donde	where
Porque	because

Complexity

Suelo comer – I tend to eat
Quiero cenar– I want to est for dinner
Tengo que beber… - I have to drink
Me gustaría merendar – I would love to snack (on)

Delicioso (a)	delicious
asqueroso	disgusting
soso	bland
Sano / saludable	healthy
malsano	unhealthy
Grande	Big
Pequeño	small
Antiguo	old
Moderno	modern
Limpio	Clean
Sucio	Dirty
Rápido	fast
Lento	slow

El agua es SanO

La hamburguesa es sabrosA

Unos espaguetis SON deliciosOS

Las patatas fritas SON ricAS

El café y la limonada SON ricOS

31

¿A qué hora desayunas/ comes / meriendas/cenas?

What time do you have breakfast / lunch/an afternoon / dinner?

¿Qué comes/bebes/ tomas?
What do you eat/ drink/have?

La comida y las bebidas Food and drinks
Un agua mineral (m)	mineral water
un bocadillo	a sándwich
Un café	a black coffee
un café con leche	a white coffee
Un té	a tea
una Coca Cola	a Coca Cola
una ensalada	a salad
unos espaguetis	spaghetti
fruta	fruit
una hamburguesa	a hamburger
una limonada	lemonade
una naranjada	an orangeade
unas patatas fritas	chips
una pizza	pizza
una tostada	(a piece of) toast
un zumo de naranja	an orange juice

Mi instituto — **My school**
¿Dónde estudias?	Where do you study?
Estudio en …	I study in …
un instituto femenino	a girls' school
un instituto masculino	a boys' school
un instituto mixto	a mixed school
los alumnos	pupils
los chicos	boys and girls
los profesores	teachers
el recreo	break
la secretaria	secretary
el uniforme	uniform

¿Qué tiene tu instituto? — **What does your school have?**
Mi instituto tiene …	My school has …
un aula (f)	a classroom
una biblioteca	a library
una cafetería	a cafeteria
un comedor	dining hall
el despacho de la directora	the headmistress's office
un gimnasio	a gym
un laboratorio	laboratory
un laboratorio de idiomas	a language lab(oratory)
un patio	playground
unas pistas polideportivas	sports' pitches
una sala de profesores	a staffroom
un salón de actos	a hall
unos servicios	toilets

Frequency phrases
a veces	sometimes
generalmente	usually
normalmente	usually
nunca	never
siempre	always
a tiempo	on time
pronto	early
tarde	late

¿Cómo llegas al instituto?   How do you get to school?
Llego al instituto …	I get to school
Llega …	He/She/It arrives
en autobús	by bus
en bici	by bike
en coche	by car
en metro	by underground
en moto	by motorbike
en tren	by train
Llego a pie.	I walk.
A qué hora llegas?	What time do you arrive?
Llego a la(s) …	I arrive at …
Llego/llegamos/llegan a casa a la(s) …	I/We/They arrive home at …
Llega a casa a la(s) …	He/She gets home at

7I Energy

1. Energy from Food

Energy	Needed to live, helps us to grow and repair our bodies, move and keep warm. Food is a source of energy.
Joule	A unit for measuring energy.
Kilojoule	1000J = 1kJ
Diet	The food that a person eats.
Weight	The amount of force with which gravity pulls things- measured in Newtons (N).
Balanced Diet	Eating a variety of foods to provide all the things that the body needs.
Nutrients	Substances needed from food.

2. Energy Stores and Transfers

Transferred	When energy is moved from one store into another.
Forces	A push, pull or twist and a type of energy transfer.
Electricity	A way of transferring energy through wires.
Stored	When energy is captured within an object and can be moved to another store by energy transfers.
Chemical Energy	Energy stored in chemicals (such as food, fuel and batteries).
Kinetic Energy	Energy stored in moving things.
Thermal Energy	Energy stored in hot objects.
Strain Energy	Energy stored in stretched or squashed objects. Also called elastic potential energy.
Gravitational Potential Energy	Energy stored in objects in high places that can fall down.

Nuclear Energy	Energy stored inside materials (also called atomic energy).
Law of Conservation of Energy	The idea that energy can never be created or destroyed, only transferred from one store to another.

3. Fuels

Fuel	A substance that contains a store of chemical or nuclear energy that can easily be transferred.
Nuclear Fuels	Used in nuclear power stations to generate electricity.
Uranium	A radioactive metal that can be used as a nuclear fuel.
Generate	To produce electricity.
Fossil Fuels	A fuel formed from the dead remains of organisms over millions of years.
Coal	A fossil fuel made from the remains of plants.
Oil	A fossil fuel made from the remains of microscopic dead plants and animals that lived in the sea.
Natural Gas	A fossil fuel made from the remains of microscopic dead plants and animals that lived in the sea.
Non-Renewable	An energy resource that will run out because we cannot renew our supplies of it.
Renewable	An energy resource that will never run out (such as solar power)
Biofuels	A fuel made from plants or animal droppings.
Hydrogen	Can be used as a fuel by combining with oxygen from the air to produce electricity.

4. Other Energy Resources

Solar Power	Generating electricity using energy from the Sun.
Solar Panel	Flat plats that use energy from the Sun to heat water.
Solar Cell	Flat panels that use energy transferred by light from the Sun to produce electricity.
Solar Power Station	A large power station using the Sun to heat water to make steam which then generates electricity.
Wind Turbine	Generates electricity using energy transferred from the wind.
Hydroelectric Power	Electricity generated by moving water turning turbines and generators.
Geothermal Power	Electricity generated using heat from rocks underground.
Photosynthesis	Carbon dioxide + water → glucose + oxygen

5. Using Resources

Fossil Fuel Advantages	Cheap compared to the others and convenient to use in cars/vehicles.
Fossil Fuel Disadvantages	Non-renewable Releases polluting gases when burnt.
Nuclear Advantages	No polluting gases generated.
Nuclear Disadvantages	Non-renewable Very expensive Dangerous waste materials
Renewable Advantages	No polluting gases Renewable

Renewable Disadvantages	Most not available all the time and only available in specific locations.
Climate Change	Fossil fuels are making the earth warmer due to the carbon dioxide given off when they are burnt.
Efficiency	How much of the energy transferred by a machine is useful.
Using Less Fossil Fuels	Using efficient appliances, insulating homes, public transport/walking/cycling

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting completed the gap fill and activities on the second sheet to support your retrieval practice.

7K Forces

1. Different Forces

Force	A push or a pull.
Contact Forces	The thing providing the force needs to touch an object to affect it. *Friction, air resistance, water resistance, upthrust*
Upthrust	The force that makes things float.
Air Resistance	A force acting on objects moving through the air.
Water Resistance	A force acting on objects moving through water.
Non-Contact Forces	Forces that can affect an object from a distance. *Gravity, static electricity, magnetism*
Gravity	A force that pulls objects downwards.
Static Electricity	A force that attracts things.
Magnetism	A force that attracts objects made of iron, nickel or cobalt.
Newton (N)	The units for measuring forces.
Weight	The force of gravity pulling on something- measured in Newtons (N)
Mass	The amount of matter that makes up something- measured in kilograms (kg)
Representing Forces	We draw arrows on force diagrams to show the direction of a force; a bigger arrow shows a bigger force.

Force Diagram

upthrust; backwards force from water resistance; gravity; forwards force from legs

2. Springs

Stretched	Made longer
Compressed	Made shorter
Spring	Made from coils of wire,
Extension	The difference between the original length and the stretched length.
Elastic	An object that returns to its original length when the force is removed.
Investigating Extension	Hang a spring from a clamp and measure its length. Add increasing numbers of masses and measure the extension each time.
Hooke's Law	Extension is proportional to the force applied.
Proportional	A relationship between two variables where if one doubles, the other will double.
Limit of Proportionality	The point at which the extension and force are no longer proportional.
Elastic Limit	The point at which the spring cannot return to its original length.
Force Meter	Springs are used inside to measure the force.

How Extension Depends on Force
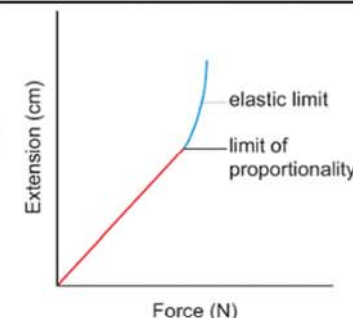
3. Friction

Friction	Force between two touching objects.
Increasing Friction	Using certain materials like rubber (used on racing cars to stop them from sliding off the road).
Reducing Friction	Make surfaces smooth or by using lubricants such as oil or grease.
Lubrication	Adding a lubricant
Friction Damage	Friction can wear things away like brake pads on a bike. Friction between parts of a car can cause it to overheat and stop working.

4. Pressure

Pressure	The amount of force pushing on a certain area.
The Size of Pressure	Depends upon the size of the force and the size of the area it is pushing on.
Pressure in Sport	Snowshoes spread out weight, reduce pressure and stop people sinking into soft snow.
Pressure in Everyday Life	It is easier to cut something with a sharp knife because it has a smaller edge so the force is concentrated over a smaller area.
Pressure formula	$\text{pressure} = \dfrac{\text{force}}{\text{area}}$

Pascal (Pa)	The units for measuring pressure. $1Pa = 1N/m^3$

5. Balanced and Unbalanced Forces

Balanced Forces	Two forces of the same size acting upon an object in opposite directions. Balanced forces will not change the speed of a moving object.
Unbalanced Forces	When one of the forces acting upon an object is larger than the other. If acting on a moving object unbalanced forces will change its speed.
Stationary	Not moving- stationary objects have balanced forces acting on them.

Force Diagram
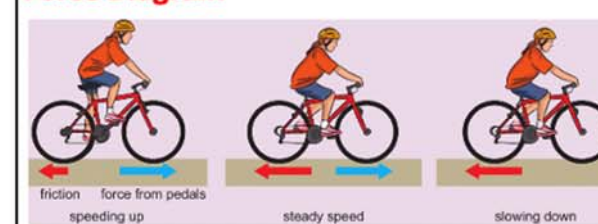
friction; force from pedals; speeding up; steady speed; slowing down

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting completed the gap fill and activities on the second sheet to support your retrieval practice.

7B Sexual Reproduction in Animals
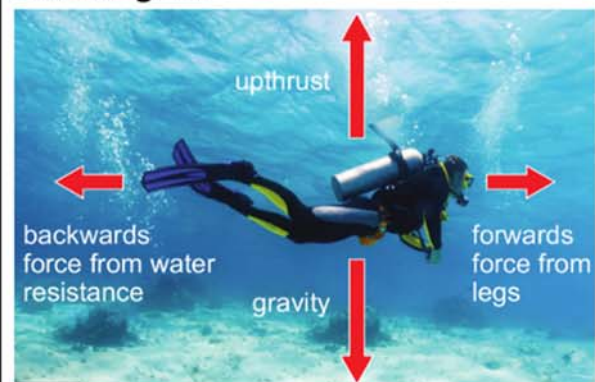
1. Animal Sexual Reproduction

Offspring	The new organisms produced by reproduction.
Sexual Reproduction	Reproduction that needs two parents to produce offspring.
Gametes	Sex cells
Sperm	Gamete that males make
Egg	Gamete that females make
Fertilisation	Sperm enters an egg cell and nuclei fuse forming a fertilised egg cell.
External Fertilisation	The sperm and egg cell meet outside of the body. e.g. fish
Internal Fertilisation	The sperm and egg cell meet inside the body.
Using External Fertilisation	Large numbers of eggs are produced because many get washed away. The parents don't look after their young.
Using Internal Fertilisation	Fewer egg cells produced because sperm is more likely to reach egg. The parents usually look after their young.

2. Reproductive Organs

Testes	Where sperm cells are made.
Scrotum	Bag of skin containing the testes.
Sperm Ducts	Sperm travels through here after leaving the testes.
Glands	Fluids are added to the sperm- it is now called semen.
Urethra	The tube the semen leaves the body through.

Male Reproductive System

bladder, glands, urethra, sperm duct, foreskin, testis, scrotum

Ovary	Where the egg cells develop and are released from.
Oviduct	Tube lined with cilia (tiny hairs).
Uterus	Where the baby will develop if the egg is fertilised.
Cervix	Ring of muscle between uterus and vagina.
Vagina	Part that leads from the cervix to the outside.

Female Reproductive System

oviduct, ovary, uterus, cervix, bladder, urethra, vagina

Puberty	When males start to produce sperm cells and egg cells in female start to mature.

Sperm Cell Adaptations

streamlined shape — The top of the head contains substances that attack the outside of the egg cell. This allows the sperm cell to burrow inside. — nucleus — The tail allows it to swim. — Long spiral-shaped mitochondrion can release lots of energy for the tail. — cell surface membrane

Egg Cell Adaptations

cell surface membrane — A jelly coat makes sure that only one sperm cell can enter. — The cytoplasm contains a store of food to provide energy for the fertilised egg cell. — nucleus

3. Becoming Pregnant

Sexual Intercourse	The erect penis is inserted into the vagina.
Ejaculation	Semen is pumped out of the urethra.
Route the sperm takes	Vagina → sucked up through cervix → uterus → oviduct → meets egg cell
Implantation	If fertilisation occurs the cell starts to divide forming an embryo which will then sink into the uterus lining. The woman is now pregnant.
Amniotic Fluid	Watery fluid to protect growing embryo / foetus.
Amnion	Bag containing the amniotic fluid.
Placenta	Allows oxygen, food and water to be passed from mother's blood into embryo's blood. Waste materials (like carbon dioxide) pass from embryo's blood into mother's blood.
Umbilical Cord	Carries the embryo's blood to and from the placenta.

4. Gestation and Birth

Gestation Period	The time from fertilisation until birth.
Foetus	When an embryo develops a full set of organs we call it a foetus (around 8 weeks).
Ultrasound Scans	Produce images of foetus to check for problems.
Harm to Baby	Alcohol, drugs, cigarette smoke and viruses can pass through placenta and harm foetus.
Premature	Baby born small and early.
Labour	The act of giving birth.

Stages of Giving Birth	1. contractions start and cervix begins to widen. 2. amnion breaks and amniotic fluid leaves vagina. 3. cervix at 10cm, stronger contractions pushes baby through. 4. Umbilical cord cut.
Afterbirth	The placenta is passed out of the vagina- end of labour.
Mammary Glands	Produces milk for babies- contains nutrients and antibodies to protect from disease

5. Growing Up

Sex Hormones	Released by brain, tests & ovaries- start puberty.
Changes to Boys During Puberty	Voice deepens, shoulders widen, hair grows, testes/penis grow, sperm produced.
Changes to Girls During Puberty	Breasts develop, hair grows, hips widen, ovaries start to release eggs.
Menstrual Cycle	Days 1-5: uterus lining lost from body (menstruation) Days 6-14: egg cell starts to mature and is released around day 14 (ovulation) Days 14+: egg cell swept towards uterus, if not fertilised cycle starts again.

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting completed the gap fill and activities on the second sheet to support your retrieval practice.

7D Ecosystems

1. Variation

Habitat	The place where an organism lives.
Variation	The difference between organisms.
Continuous	Type of variation where the measurement can be any value in a given range. *e.g. height, mass*
Discontinuous	Type of variation where the measurement falls into certain categories. *e.g. eye colour, blood group*
Offspring	The new organism produced by reproduction.
Species	Group of organisms that can reproduce to produce offspring that can also reproduce.
Hybrid	The offspring of two different species. They cannot reproduce.

2. Adaptations

Environment	The conditions in a habitat.
Adaptations	Features that help an organism to survive in the environment where it lives.
Polar Bear Adaptations	• Thick fur to keep warm • small ears to stop heat loss • white fur for camouflage • rough soles to grip ice • large feed to spread out weight / swimming
Cactus Adaptations	• Stem stores water • roots cover large area to absorb water • no leaves to stop water loss
Jack Rabbit Adaptations	• large ears to allow heat to escape • large hind legs to increase running speed • gets all its water from food, doesn't drink
Community	All the animals and plants that live in a habitat.
Ecosystem	The community and all the physical environmental factors together.
Inherited Variation	Variation between features caused by an organism's DNA
Inherited Variation Between Same Species	Gametes contain different instructions for features. A different sperm and egg produce each offspring, so each has different features.
Identical Twins	Identical because they develop from one fertilised egg cell.

3. Effects of the Environment

Environmental Variation	Variation caused by environmental factors. *e.g. hairstyle, accent*
Daily Changes	Environmental changes during the day.
Seasonal Changes	Environmental changes during the year.
Nocturnal	Animals that are only active at night.
Nocturnal Animal Adaptations	Excellent eyesight Nocturnal owls have superb hearing as well and can fly.
Deciduous	Trees that lose their leaves in winter to stop water loss.
Evergreen	Trees with tougher leaves that don't lose much water so they keep them all year.
Hibernation	Organisms become inactive in winter so they don't need food.
Migration	Birds fly to warmer places for winter to find food.

4. Effects on the Environment

Resources	What an organism needs to survive and grow- oxygen, food, water, etc. for animals.
Population	The numbers of a specific organism.
Food Chain	Represents what eats what in a habitat Grass → hare → lynx
Competition	Organisms compete over the resources that they need.
Food Web	Formed by joining together all food chains in an ecosystem.

Food Web Example

Interdependent	Organisms in an ecosystem all depend on one another.
Predator	Eats another animal.
Prey	Eaten by another animal.

5. Transfers in Food Chains

Food Chain Arrows	Represent energy passed between organisms.

Energy Flow	Energy is lost at each stage along a food chain due to being released by respiration for movement etc. and some food remains undigested.
Pyramid of Numbers	Diagram showing number of each organism at each stage of a food chain.
Pesticides	Poison that kills pests.
Pests	Organisms that cause problems.
Persistent	Poisons that are not broken down in nature.
Poisons in a Food Chain	Poisons get more concentrated the further along a food chain.
DDT	Persistent pesticide used in the UK that caused bird shells to become weak and break easily. Banned in 1984.

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting completed the gap fill and activities on the second sheet to support your retrieval practice.

7E Mixtures and Separation

1. Mixtures

Mixture	Two or more substances jumbled together but not joined together.
Suspension	A mixture of a solid and liquid, where the solid bits are heavy enough to settle out if the mixture is left to stand.
Colloid	A mixture of a solid, liquid or gas in a solid, liquid or gas where the substances do not settle out if left to stand.
Dispersed	Spread out without settling out, such as the bits in a colloid.
Opaque	Cannot be seen through- colloids are opaque / cloudy.
Solution	When a substance has dissolved in a liquid.
Transparent	Light can pass through and it can be seen through- solutions are transparent.
Filter	Something through which a liquid is passed to remove suspended pieces of solid.

2. Solutions

Solvent	The liquid in which a substance dissolves to make a solution.
Solute	The substance that has dissolved in a liquid to make a solution.
Dissolve	When a substance breaks up into such tiny pieces in a liquid that it can no longer be seen and forms a solution.
Soluble	Describes a substance that can dissolve in a liquid.
Conservation of Mass	The total mass of a solution is the same as the mass of the dissolved substance plus the mass of the liquid at the start.
Saturated	A solution that contains so much dissolved solute that no more solute can dissolve in it.
Solubility	The amount of a substance that dissolves in a particular solvent at a particular temperature to make a saturated solution.

3. Evaporation

Evaporation	When a liquid changes into a gas. Can be used to separate a liquid from the solid dissolved in it.
Sodium Chloride	The scientific name for table salt that we use on our food.
Rock Salt	When sodium chloride is found in thick layers of rock underground.
Extracting Rock Salt	Can be dug up or mined. Water can be pumped into layers of salt underground, dissolving the sodium chloride which is then pumped to the surface and heated to evaporate the water, leaving behind sodium chloride.
Boiling	When there is liquid turning into a gas in all parts of a liquid- creates bubbles of gas in the liquid.
Boiling Point	The temperature at which a liquid boils.

4. Chromatography

Chromatography	Used to separate substances dissolved in a mixture.
Paper Chromatography	A concentrated dot of a mixtures is placed at the bottom of special chromatography paper. The bottom of the paper is dipped into a solvent (such as water). As the solvent moves up the paper is carries the dissolved substances.
Concentrated	A solution that contains a large amount of solute dissolved in a small amount of solvent.
Chromatogram	The results of chromatography such as a dried piece of paper for paper chromatography showing when the dissolved solids have been separated.
How chromatography works	Different substances in a mixture are carried at different speeds, depending on how soluble they are, which separates them out from each other.

5. Distillation

Desalination	Separating water from the salts in salty/sea water to produce fresh drinking water.
Distillation	The process of separating a liquid from a mixture by evaporating the liquid and then condensing it to be collected.
Steam	Water as a gas.
Condenses	When a substance changes from its gas state into its liquid state.
Pure	A single substance that does not have anything else in it. (Pure water only contains water and no dissolved solutes)
Distillation Apparatus	
Solar Still	Energy from the Sun is used to evaporate salty/dirty water which is then condensed, forming pure/clean water.

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting completed the gap fill and activities on the second sheet to support your retrieval practice.

7F Acids and Alkalis

1. Hazards

Hazard	Something that could cause harm.
Risk	The chance that a hazard will cause harm.
Hazard Symbols	Internationally agreed symbols representing the type of risk from using a substance.
	Dangerous to Environment Can cause long term damage to animal and plant life.
	Toxic Poisonous and can cause death if taken into the body.
	Corrosive Attacks certain substances like metals, stonework & skin.
	Explosive Heating may cause an explosion.
	Flammable These substances catch fire easily.
	Caution similar to toxic/corrosive but less serious- may cause skin irritation
Diluted	Dangerous substances are mixed with water to make them less dangerous.

2. Indicators

Indicator	A substance that changes colour in solutions of different acidity/alkalinity.
Litmus	An indicator made from a type of lichen.
Acid	Turns litmus indicator red.
Alkali	Turns litmus indicator blue.

Neutral	A substance that is neither acidic or alkaline.
Red Cabbage	Can be used as an indicator.

3. Acidity and Alkalinity

pH Scale	A scale measuring acidity and alkalinity in numbers.

The pH Scale
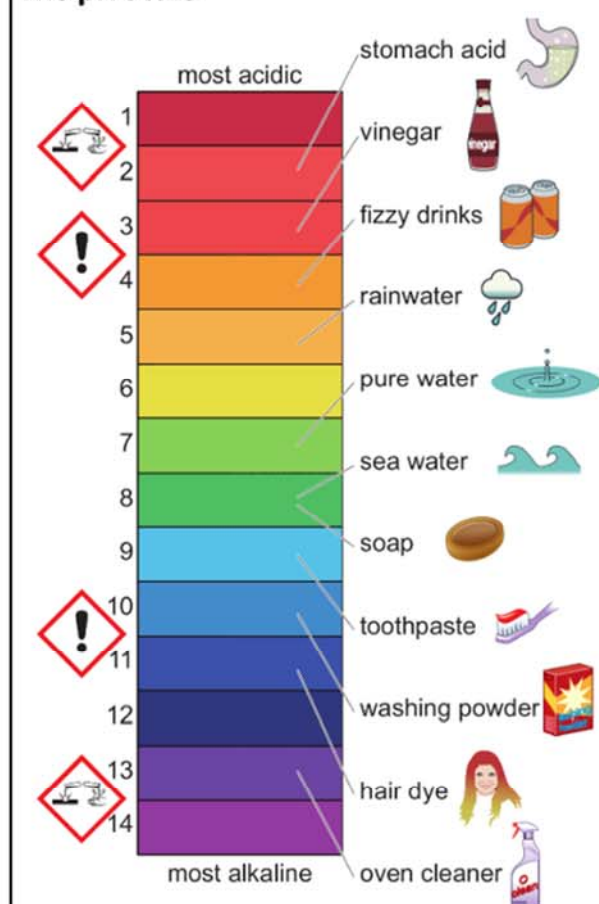
Acid	pH lower than 7- the lower the number the more acidic.
Neutral	pH of 7
Alkali	pH higher than 7- the higher the number the more alkaline.
Universal Indicator	Indicator that gives a range of colours depending on the pH.
Acid Rain	Rainwater more acidic than usual due to pollution.

4. Neutralisation

Neutralisation	A reaction where an acid and alkali are mixed together forming a neutral substance.
Chemical Reaction	A change in which one or more new substance is formed.
Word Equation	Used to model chemical reactions.
Reactants	The starting substances- written on left of word equation.
Products	The new substances made- written on right of word equation.

Neutralisation General Word Equation
Acid + alkali → salt + water

Neutralisation Word Equation Example
Hydrochloric acid + sodium hydroxide → sodium chloride + water

Salts	Formed when acids and alkalis react. Different acids and alkalis will form different salts.
Sodium Chloride	The chemical name for common/table salt.

5. Neutralisation in Daily Life

Base	Any substance that neutralises an acid forming a salt and water.
Alkali	A soluble base
Antacids	Remedy for indigestion that neutralise the stomach acid

Antacid Word Equation Example
Magnesium hydroxide + hydrochloric acid → magnesium chloride + water

Toothpaste	Contains bases that neutralise acids in your mouth from food that you eat.

Bee Sting Remedy	A bee sting, being acidic can be treated with a weak alkali like baking soda.
Wasp Sting Remedy	A wasp sting, being alkali, can be treated with a weak acid like vinegar.
Cleaning Metals	Acids clean the rust off metals using a neutralisation reaction.
Waste Gases	Acidic waste gases from industries are sprayed with calcium hydroxide to neutralise them.

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting completed the gap fill and activities on the second sheet to support your retrieval practice.

Computer Science Knowledge Organiser

IMPACT OF TECHNOLOGY – COLLABORATING RESPONSIBLY

Cyberbullying is similar to bullying but tends to occur online. Cyberbullying can come in many forms. Some examples are:
· Threatening someone to make them feel scared
· Harassing someone by repeatedly sending them messages
· Ruining somebody's reputation
· Excluding someone from a group
· Stealing someone's identity and pretending to be them
· Publicly displaying private images or messages

Key Words

Audience	The people you are communicating, presenting information to
Catfishing	A person pretends to be someone they are not.
Collaboration	Working effectively together
Digital tattoo/Digital footprint	Online reputation that is permanent
Email	A tool for online communication
Hazards	Areas/items that could cause damage or injury
Network	Devices are connected together usually by cable or Wi-Fi.
Password	A way to ensure no one access your data or information
Respect	Be mindful of how you are responding to others
Secure	Making sure your online information is safe

STOP cyberbullying

Social media settings
· Profiles should always be set to private
· Profile images should not reveal locations
· Profile images should not be easy to recognise; it is much better to use a picture of a pet or a cartoon character
· Don't reveal locations — this makes it easy to find out where you are.
· Making your date of birth public makes it easy for hackers to steal your personal information and set up fake accounts in your name.
· You should never reveal your phone number, email address, or home address on a public site
· You should never reveal your current location on social media
· Putting your full name, including a middle name, makes it easy for someone to steal your personal information. Always use a nickname or shortened version of your name

Do you really want to send that?
Think before you click.
It is easy to send comments from the other side of a screen.
It is not easy to then remove them.
Actions need to be considered before mistakes are made.

Using technology appropriately, carefully and positively leads to positive digital citizens.
Digital citizenship to the responsible use of technology by anyone who uses computers, the Internet and digital devices to engage with society on any level.

Secure passwords
No one should be able to guess/work out your password.
Current government advice is to use 3 random words

Where to get help
Talk to a trusted adult
https://www.ceop.police.uk/
https://www.childline.org.uk/

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Computer Science Knowledge Organiser

USING MEDIA: Gaining support for a cause

Different **application software** can be used for different purposes. It is important to think about what the task is and select the most **appropriate** one.

The **application software** chosen allows different formatting techniques to be used.

Formatting can be using tools like **bold**, *italic*, underline, changing colour, font style and size, alignment and many more.

Formatting can be used for many reasons. Including to make text easier to read, easier for the audience to use, highlight important information or attract attention.

It is important to select the appropriate formatting for the audience

Images play an important role when using software. It is important that **appropriate** images are used, ones that meet the requirements of the **audience** and the **purpose** of whatever is being created.

When researching and reading stories online you need to check that they are **reliable**, **trustworthy** and **credible**. Anyone can upload content so it is not always accurate.

· Check the source, find out which other sources are reporting it

· Check whether other sites are saying the same thing,

· Don't trust all the stories and all pictures

· Check for facts not rumours

· Check any citations or references

When you are researching a topic you will come across a lot of useful information. Once the reliability and accuracy has been checked you may decide to use the information. Check the law

Plagiarism using someone else's work or ideas and using them as if they were your own. This can be any type of work either printed or electronic.

Citation the audience where the information came from. Anything that is used needs to have **citations** or **references** to the original work. the audience details about the source so that they can see that the source is relevant and recognised so they can find the source themselves if they want to.

Copyright Law gives the creators of literary, dramatic, musical, artistic works, sound recordings, broadcasts, films and typographical arrangement of published editions, rights to control the ways in which their material may be used.

Creative Commons(CC) license is one type of copyright license. This allows the copyright owner to say exactly what other people can and can't do with or to their work.

They help copyright owners share their work while keeping the copyright. For example, a Creative Commons licence might allow other people to copy and distribute the copyright owner's work, if they give them credit.

Making sure the item being created is successful and actually does what it was intended to do is important.

Setting **success criteria** should be determined at the start of the project and can be revisited frequently.

The success criteria should be clear and easy to follow.

A **blog** is simply a regularly updated website or web page, typically one run by an individual or small group, that is written in an informal or conversational style.

Computer Science Knowledge Organiser

NETWORKS

Key Words	
Bandwidth	Amount of data that can be moved from one point to another in a given time.
Buffering	Data arriving slower that it is being processed
Internet	A worldwide network of computers
internet of Things (IoT)	Takes everyday 'things' and connects them to the Internet e.g. smart light bulb, fridge, heating etc.
IP address	A unique address for every device on the internet
Packet	Networks send/receive messages in units called packets
Protocol	All methods of communication need rules in place in order to pass on the message successfully. These sets of rules are called 'protocols'
Search Engine	A website that allows user to look up information on WWW e.g. Bing, Google etc.
Web browser	Piece of software(code) used to view information on the Internet
WWW	Part of the Internet that contains websites and webpages. NOT the same as the Internet.
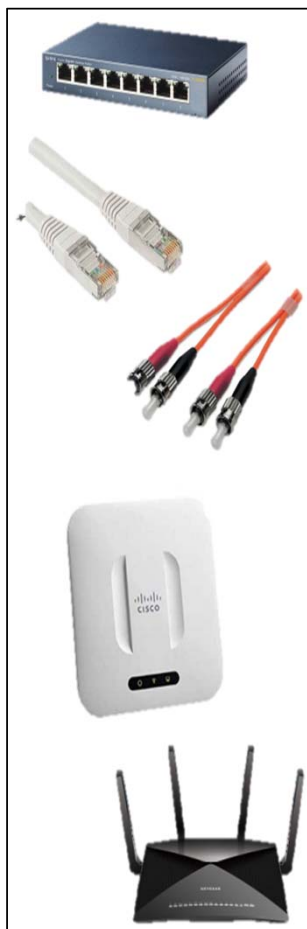
A **network** is where devices are connected together usually by cable or Wi-Fi. This could be a few computers in a room, many computers in a building or lots of computers across the world.

Wired and **Wireless** data transmission

A computer network can be either wired or wireless.

· Wired networks send data along cables.
· Wireless networks send data through the air using radio waves.

Bandwidth—Bandwidth is the amount of data that can be moved from one point to another in a given time. Higher bandwidth = more data per second

Bandwidth is measured in bits per second
A bit is the smallest unit of data
Data transfer rates are now so good that bandwidth is usually measured in Megabits per second (Mbps)
1Mb—1 million bits

Internet services

There are a range of services provided by the internet. These include:
· World Wide Web
· Email
· Online gaming
· Instant messaging
· Voice over IP (VoIP) – audio calls
· Internet of Things (IoT)
· Media streaming (e.g. watching Netflix online)
The rules for each service are different.
As a result, a different protocol is used.

HTTP—HyperText Transfer Protocol—used so that data can be understood when sent between web browsers and servers.
HTTPS—is the secure version of HTTP where data sent is encrypted.

Network Hardware—physical equipment required to set up a network
Hub—Connects a number of computers together. Ports allow cables to be plugged in from each connected computer.
Router—Used to connect two separate networks together across the internet
Sever—A powerful computer which provides services to a network
Cable—Used to connect different devices together. They are often made up of a number of wires.

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PROGRAMMING 1 - SCRATCH

Key Words	
Abstraction	Identify the important aspects to start with
Algorithm	Precise sequence of instructions
Computational thinking	Solving problems with or without a computer
Debugging	Looking at where a program might have errors or can be improved
Blocks	Scratch bricks that we can use to code algorithms
Decomposition	Breaking down a problem into smaller parts
Execute	A computer precisely runs through the instructions
Iteration	Doing the same thing more than once
Selection	Making choices
Sequence	Running instructions in order
Variable	Data being stored by the computer

Sequence, **selection** and **iteration** are all processes. In order for computers to perform tasks there is more that is needed. For example a computer will take an **input** (this might be automatic or via human input) which the computer will then **process** and the **output** will be visible on the computer monitor.

Scratch is a block based programming language. We can use predefined code drag and drop blocks to create a sequence of code.

A computer inputs (this might be automatic or via human input), processes that input and then produces an output. as well as producing an output. For example when you use a keyboard and mouse, the mouse is used to input data into the computer to be processed and the output is visible on the computer monitor.

Variables are used to store data for use in a program. They can store lots of different types of data such as names and scores.
So set variable score to equal 0
If I score a goal then increase variable by 1

Operators
Comparison operators allow us to compare using **< > +**
Logical operators use **AND, OR, NOT**

A **selection** statement in programming allows a computer to **evaluate** an **expression** to **'true'** or **'false'** and then perform an action depending on the outcome.

Count controlled iteration will execute the commands a set number of times. Example**:** "perform 200 star jumps"

Condition-controlled iteration will execute the commands until the condition you set is no longer being met. Example: "perform star jumps until 3pm"

We use algorithms in every day life . Example an algorithm to get to school, to make a cup of tea, to make a pizza, to order a takeaway. These are just precise sequences of instructions.

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Computer Science Knowledge Organiser

PROGRAMMING 2 - SCRATCH

Key Words

Abstraction	Identify the important aspects to start with
Algorithm	Precise sequence of instructions
Debugging	Looking at where a program might have errors or can be improved
Decomposition	Breaking down a problem into smaller parts
Iteration	Doing the same thing more than once
Lists	Allows multiple items of data to be held
Selection	Making choices
Sequence	Running instructions in order
Subroutine	A group of instructions that can run when called
Variable	Data being stored by the computer.

This subroutine had been named 'jump'. The y axis has been changed by 50 (so jump up), wait 1 second then jump down (-50).
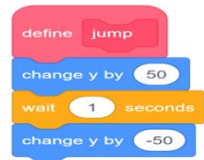
Then the jump subroutine can be called in the program.
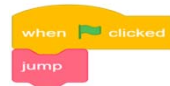
Variables are used to store **data** for use in a program. They can store lots of different types of data such as names and scores.

So set variable score to equal 0
If I score a goal then increase variable by 1
A variable can only hold 1 piece of data at a time.

Lists are used to store data for use in a program.

Lists can hold multiple items of data under one name. Just like a shopping list where you can keep adding items.

shopping_list
1 egg
2 cheese
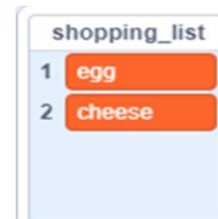
Sequence, **selection** and **iteration** are all processes.

These are three of the key concepts –the BIG 3
Sequence—the challenge of arranging precise instructions into the correct order
Selection—allowing a program to branch down a different route IF a condition is met
Iteration (repetition) - allowing a repetition of commands by looping back.

Iteration allows for the same code to be repeated.

Count controlled iteration will execute the commands a set number of times
Example**:** "perform 200 star jumps"

Condition-controlled iteration will execute the commands until the condition you set is no longer being met
Example: "perform star jumps until 3pm"

Will loop the code forever

Will repeat a set number of times

Will repeat until a condition is met

MODELLING DATA – SPREADSHEETS

Data and **information** are not the same.
· **Data**: facts and figures in their raw form
· **Information**: data that has been given structure or meaning

For example:
Data—10, 2107, 18
Information—Time 10am, date 21st July, temperature 18º

The tool bar ribbon at the top allows for **formatting** of the data. Changing colour, size, style etc

There is a **sort** and **filter** tool that allows for data to be arranged in ways that is most useful for the user e.g. alphabetical, highest, lowest etc.

Conditional formatting can be set to allow the cell **formatting** to **automatically** change if certain criteria is met. For example a cell might turn red if there was a negative number

In order to complete calculations spreadsheets make use of **formula**.
A formula uses the following basic symbols
The **=** symbol is always at the start of a formula
The **+** symbol is used for addition
The **-** symbol is used for subtraction
The ***** symbol is used for multiply
The **/** symbol is used for divide

Functions are also used which are predefined formula.

Cell reference G7

Formula bar

Column— runs down a sheet assigned a letter

Row— runs across the sheet assigned a number

sheets—Individual pages in a workbook
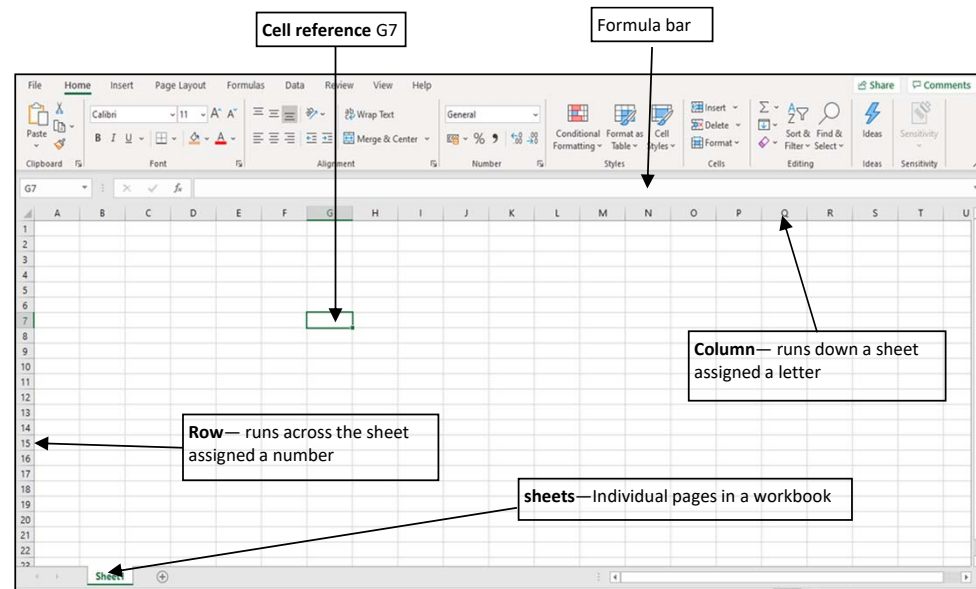
Common **functions** are
SUM—adds a range of cells
MAX—returns the largest value from selected cells
MIN—returns the smallest value from selected cells
AVERAGE—provides the arithmetic mean (average) of selected cells
COUNTIF—counts the number of cells in a range that meet the given criteria
IF— allows logical comparisons
COUNTA—counts cells that are not empty

Data can be gathered from different sources
· **Primary** source: collecting data yourself
· **Secondary** source: someone else collects the data

Each box on a spreadsheet is called a **cell** and they hold data.
Each **cell** has a unique **cell reference** to identify its location.

Key Words and Definitions

Refuse	Is the product necessary?
Rethink	Are there alternative materials or design options that are more sustainable?
Reduce	Can the product be made from fewer materials? Can the amount of unsustainable materials be reduced?
Reuse	Can parts of the product be reused in a different product?
Recycle	Can the materials used be recycled? If the product made from recycled materials?
Repair	Can the product be repaired rather than being thrown away if it breaks?

Design Specification – Key Questions

A	Aesthetics	What shape should the product be? What colour should be product be? What texture should the surface have?
C	Cost	What should the cost of the product be?
C	Consumer	Who is the client or the user of the product? What features of other similar products should it have? Does the client have any specific needs or wants for the product?
E	Environment	Should the product be made from recycled materials? How should the product be packaged? How will the product be disposed of when it is no longer needed?
S	Safety	What safety risks have to be considered? What safety standards must the product meet?
S	Size	How long, wide and tall should the product be? How much should the product weigh?
F	Function	What will the product be used for? How will it work? How should it be tested?
M	Materials and Manufacturing	What materials should the product be made from? Are there any limits on the sizes of the available materials? How many products need to be made? `Which processes should be used to make the product?

Sustainability	The level to which resources can be used without them becoming unavailable in the future.
Carbon Footprint	Carbon foot print is the measurement/amount of greenhouse gases produced in the production of products.
Renewable Energy Source	A source that is quickly replaced by natural means and will not run out.
Non Renewable Energy Source	A source that cannot quickly be replaced and will eventually run out.

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Design Process

Primary Research	Data gathered first hand directly from the client
Secondary Research	Data about the client that comes from a second hand source
Product Analysis	Looking at a product in detail to understand more about it using ACCESS FM
Design Brief	A summary of the design opportunity
Design Specification	A document that lists all the design criteria that the finished product must meet.
Design Development	Involves making a model of a design, which is then tested and evaluated. A new, improved prototype is made and the process is repeated until the finished design meets all the needs and wants of the client.
Testing	To check that the product meets the design specification and the needs of the user.
Evaluation	Where a designer reflects on the design of a product, looks at what went well during testing and identifies ways that a product could be improved.
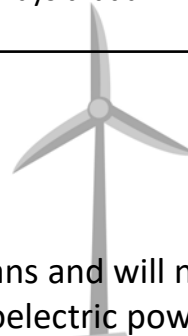
Renewable Energy Sources

A renewable energy source is quickly replaced by natural means and will not run out. Examples include wind power, solar power and hydroelectric power

Advantages	Disadvantages
It will not run out	Initial cost of installation is high
No carbon emissions	Some types of renewable energy are noisy
No fuel costs	Some types of renewable energy look ugly
No reliance on fossil fuels	Some types of renewable energy need constant sunlight or wind
	Unused electricity could be wasted
	Local habitat could be displaced
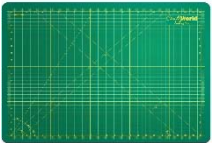
How can we reduce our impact on the environment?

- Use **renewable** materials rather than non-renewable means these can be replenished.
- If non-renewable materials are used such as plastic (oil) **carbon emissions** are given off resulting in global warming.
- Choosing **biodegradable** materials means they will break down naturally when the product comes to the end of its life. Non-biodegradable materials that have not been recycled will end up in the landfill or the sea damaging animals and habitats.
- Apply the **6Rs** to ensure minimal impact on the planet.

Tools and Equipment

	Name	• Use • Safety point
	Craft Knife	To cut paper, card and boards **Safety Rules when using it** Lock must be on Point downwards Use a cutting mat and safety ruler
	Cutting Mat	Placed under the material **Safety** It stops the knife from slipping
	Metal Safety Ruler	Used when cutting the material with a craft knife. **Safety** Fingers stay in the indent so protected from the blade
	Glue Gun	Used to join card and boards together **Safety** The glue and nozzle is hot Be careful not to use too much glue

Health & Safety

Follow all verbal and written safety instructions, safety signs and floor markings.
Wear an apron and remove any loose clothing or jewellery. Tie back long hair.
Always walk – never run
Do not crowd other people
Reports any accidents that occur immediately to the teacher.
Do not leave anything on the floor
Leave the workspace clean and tidy when you have finished.

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Sources of Timber

Timber is made from trees that are chopped down and then cut into planks in a sawmill.

Timber can be a renewable resource if grown in well-managed forests. Responsible management includes planting trees as older trees are cut down. Timber grown this way can be identified by the Forest Stewardship Council FSC,

FORESTS FOR ALL FOREVER
FSC
Forest Stewardship Council®

Types of Timber

- **Hardwood** comes from deciduous trees, which are trees that shed their leaves each autumn. Hardwood trees can take 100 years to grow to a size where they can be harvested for timber.

- **Softwood** comes from coniferous trees. These are trees that keep their leaves or needles all year round, so they typically grow faster than hardwood trees. Softwood trees can reach a size where they can be harvested for timber in 25-30 years so more eco-friendly and cheaper.

- **Manufactured Boards** are made by gluing particles or pieces of wood together. These can be the waste materials from cutting of hardwood softwood or can be recycled woo.

Hardwoods

Type	Properties	Uses
Oak	Very strong and hard Light brown colour	High quality furniture
Mahogany	Fairly strong and durable Pink to reddish brown colour	High quality furniture
Beech	Hard and tough, but easy to work with Light brown with darker brown flecks	Wooden toys, household items and furniture
Ash	Tough and flexible Light creamy brown colour	Tool handles, sports equipment
Balsa	Soft – can be marked using finger Off white to tan colour	Modelling

Softwoods

Type	Properties	Uses
Pine	Fairly strong, easy to work with Light brown or yellowish colour	Interior structures in buildings and furniture
Spruce	Strong and hard, but low resistance to decay. Yellowish-white colour	Wooden aircraft frames

Manufactured Boards

Type	Properties	Uses
Medium Density Fibreboard	Made from fine particles of timber, mixed with glue and compressed together. Smooth, even surface, easily machined	Low cost furniture
Chipboard	Made from course chips of timber, mixed with glue and compressed together. Rough surface with uneven texture	Kitchen worktops (covered with melamine formaldehyde)
Plywood	Made from layers of veneer glued together with the layers grain structures at right angles to each other Layers are cut from timber then glued together	Furniture making Marine plywood is used for building boats

Hygiene and Safety

LOOK COVER WRITE CHECK

Code those rules in the picture CC for ways to prevent cross contamination

Personal hygiene-people are sources of contamination. Personal hygiene must be followed to prevent food poisoning such as:-Wash hands before and after handling foods; tie or cover hair; remove jewellery;

Cross Contamination-The transfer of bacteria into food: Food to food, Food handler to food, Equipment to food

High Risk foods are foods high in protein and moisture e.g. meat, dairy, cooked rice, gravy. Must be stored at a temperature below 5∘C to prevent bacteria growth.

Preparing food safely:

Cleaning
Keep yourself and hands clean
Use clean equipment
Use clean dish clothes and tea towels

Cooking
Cook raw foods until the core is 75C, check with a temperature probe.
Reheat foods to 75C
Never reheat food more than once

Chilling
Cool cooked foods for no longer than 90mins before refrigerating
.
High risk foods must be stored below 5C

Cross Contamination
Stroe raw foods away from cooked foods
Use separate equipment (chopping boards and utensils
Wash hands after handling raw meat and before preparing food

Wash hands with soap and water before, during, and after preparing food and before eating

Avoid unpasterize milk and juices

Separate raw meat, eggs, seafood, and poultry from other foods in fridge

Use soap and hot water to wash knives, utensils, cutting boards, and countertops

Rinse produce

Use separate cooking utensils and plates for raw meat, poultry, and seafood

Preventing cross contamination

COLOUR CODED CUTTING BOARDS
RAW MEAT
RAW FISH
COOKED MEAT
SALAD & FRUIT
VEGETABLES
BAKERY & DAIRY

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Knife Skills

Julienne
3mm*3mm*3~5cm

Rondelle

Medium Dice
1.25*1.25*1.25cm

Small Dice
6*6*6mm

Key abbreviations: Weights and Measurements

L	Litres	
g	Grams	
ml	millilitres	1000ml =1 litre
Kg	kilograms	1000g
Tbsp	tablespoons	15ml
Tsp	teaspoon	5ml
1pt	1 pint	568ml

Claw grip

Bridge hold

Food Spoilage

OVERVIEW

Five conditions needed for microorganisms to multiply:
1. Warmth
2. Moisture
3. Food
4. pH (not too acidic or alkaline)
5. Time

HIGH RISK FOODS
Cooked meat, fish and poultry
Dairy
Shellfish
Gravies, Stocks, Sauces
Cooked Rice

CAN CAUSE FOOD SPOILAGE:

RIPENING — prevented by — adding an acid

ENZYMES

BROWNING — prevented by — blanching and freezing

Both are **microorganisms** which means with the above conditions, they can **grow and spread quickly**. Moulds can change the **look, smell** and **taste** of food. Yeasts commonly grow on fruit, spoiling them through **fermentation** of sugars

MOULD & YEAST

MOULD
YEAST

prevented by — correctly storing food such as breads in dry, cool conditions and fruit in the fridge

Enzymes are special proteins that act as biological catalysts - they <u>speed up chemical reactions</u>. You can often see this in fruit & veg

Storing and Preparing Food Safely

OTHER METHODS
freeze-drying
jam-making
canning/bottling
pickling
vacuum packing
cool, dry place

DON'T let it go past its best
USE BY
BEST BEFORE

Prevent Cross-Contamination
- Clean utensils and surfaces
- Clean hands thoroughly
- Watch out for pests
- Keep high risk food away from other food
- Follow safety & hygiene rules

key temperatures
Cook/Reheat 75C
Chilling 0C to 5C

LOOK COVER WRITE CHECK

LOVE FOOD LOVE SCIENCE

Bicarbonate of Soda
Baking Powder
Cream of Tartar

Alkali   Alkali+Acid   Acid

Chemical raising agents produce CO2.
Alkali+ Acid+ liquid+ CO2
Makes baked products like scone rise, light and soft
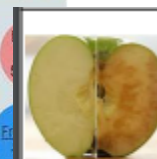
7. Enzymic browning: the process where fruit and vegetables turn brown due to them being exposed to oxygen (oxidisation).

14. Rubbing in method is a method whereby you rub using your fingers together usually butter and flour to create a breadcrumb like mixture, usually the base for scones.

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Eatwell Guide

40% 38% 12% 8% 1%
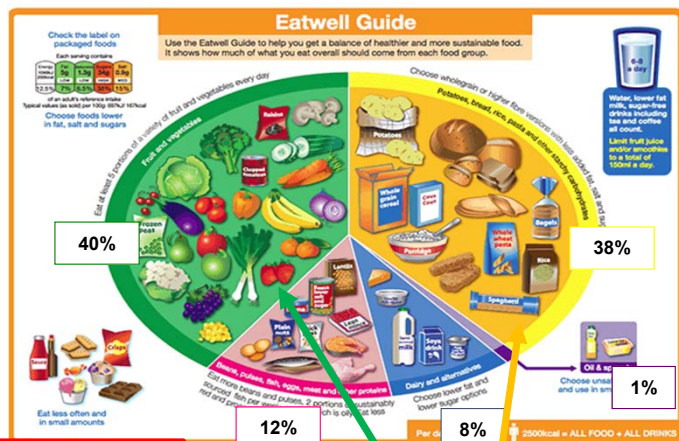
Occasional treats: Foods high in fat and sugar

Eat plenty of these because:
*Adds bulk so gives a feeling of fullness.
*Slow releasing energy.

Great source of fibre
Packed full of vitamins, minerals and fibre.

LOOK COVER WRITE CHECK

Nutrient	How	Why
Cutting Fat	*Eat more chicken and fish and less red meat *Use skimmed or semi-skimmed milk instead of full fat milk *Grill food instead of frying *Cut fat off meat before cooking	*Overweight *Obesity *Increase in Cholesterol in the blood *Heart attack. *Type 2 diabetes
Cutting down on Sugar	*Avoid fizzy drinks and high calorie drinks. Have fruit juice or water instead. *Eat fewer cakes, biscuits and sweets *Eat more fruit as an alternative *Try the natural sweetness of fresh fruit in puddings instead of sugar	*Overweight *Obesity * *Heart attack. *Type 2 diabetes
Have more Fibre	•Eat lots of fresh fruit and vegetables •Eat more wholemeal flour, bread, pasta, rice •Use more canned beans, peas and lentils - eat more •Try jacket potatoes with a variety of fillings	*Helps to protect against diseases of the bowel. *Gives you a feeling of fullness and so can help in diets.
Eat less salt	•Use herbs and spices as an alternative to salt	* Too much salt can lead to high blood pressure. This will increase the risk of suffering heart problems and strokes.

Food miles and the environment

Task: When you next visit your supermarket check the food labels to see where the fruits and vegetables in your basket comes from.

LOOK COVER WRITE CHECK

Key Term	Meaning	
Food Miles	the distance food has travelled to get to your plate. Food must travel from the farm it is grown on or the factory it is made in to a supermarket or shop to be sold	Chocolate – ingredients coming from all over the world has a lot of food miles.
Carbon Emission	harmful gases such as carbon dioxide are released into the earth's atmosphere when we use fossil fuels (coal and oil) to provide energy. We need energy to grow, produce and transport food. Some food uses more energy than others.	
Local	a place close to where you live. Fruit and vegetables that were grown near you would be considered local.	Strawberries grown in Manchester/UK

https://www.bbc.co.uk/bitesize/topics/zjr8mp3/articles/zjnxwnb

Art – Tier 2 and Tier 3 language

	Type	Keyword	Definition
SPRING 1: ART: Our Manchester	Tier 2 language	**Layering**	Placing one element over another. This could be coloured pencil, paint, collage etc…
		Texture	The display of how an object would feel in reality. This can be created through mark making.
		Structure	The underlying connection that holds up the subject, this could be a building or figure.
		Proportion	How the sizes of different parts of a piece of art or design relate to each other.
		Perspective	The representation of three-dimensional objects or spaces in two dimensional artworks.
	Tier 3 language	**Scratchboard**	A form of direct engraving where the artist scratches off dark ink to reveal a white or coloured layer beneath.
		Hatching	Small lines drawn quickly to represent specific textures such as fur. Hatch lines can be layered up to create tone.
		Cross-hatching	A shading technique involving the use of small, intersecting lines. The closer the lines are together, the darker the tone.
		Stippling	The creation of shading by using small dots. The closer the dots are together, the darker the tone.
		Negative Space	The space around and between the subject of an image. Sometimes the negative space can form another image.

Colour code: BLUE= Tier 3 words   ORANGE= Tier 2 words   Look out for colour coding during lessons!

Computer Science - Tier 2 and Tier 3 language

Type		Keyword	Definition
Tier 2 language		Audience	A group of people identified as being likely customers of a business or designing your work for.
		Promoting	To attempt to sell or popularise by advertising or publicity.
		Sources	A place, person, or thing (image or video) from which something originates or can be obtained.
		Formatting	Changing the layout of a document to look more professional or fit the purpose.
		Application	The action of putting something into operation.
Tier 3 language		Digital Tattoo	Online reputation that is permanent.
		Catfishing	A person pretends to be someone there not.
		Creative Commons	A type of copyright license. Allows the copyright owner to say exactly what other people can and can't do with or to their work.
		Licensing	An official permission or permit to do, use, or own something.
		Plagiarism	Using someone else's work or ideas and using them as if they were your own.

Type		Keyword	Definition
Tier 2 language		Buffering	Data arrived slower that it is being processed.
		Search engine	A website that allows user to look up information on WWW e.g. Bing, Google etc.
		Router	Used to connect two separate networks together across the internet.
		Internet	A worldwide network of computers.
		Hub	Connects a number of computers together. Port allow cables to be plugged in from each connected computer.
Tier 3 language		Bandwidth	Amount of data that can be moved from one point to another in a given time.
		Internet of Things (IOT)	Takes everyday 'things' and connects them to the internet e.g. smart light bulb, heating etc.
		Protocol	All methods of communication needs rules in place in order to pass on the message successfully. Protocols = set of rules.
		HTTP/HTTPS	HyperText Transfer Protocol (Secure) – Used so data can be understood when set between computers. Secure = Encrypted.
		Browser	Piece of software (code) used to view information on the Internet.

Computer Science - Tier 2 and Tier 3 language

SPRING 1: COMPUTER SCIENCE: Excel	Type	Keyword	Definition
	Tier 2 language	Data	Facts and figures in their raw form.
		Row	A row is a series of data banks laid out horizontally in a table or spreadsheet.
		Column	Columns run vertically in the worksheet, and the data goes from up to down.
		Information	Data that has been given structure or meaning.
		Formatting	Formatting in excel is used to change the appearance of the data represented in the worksheet.
	Tier 3 language	Conditional formatting	Automatic formatting that is triggered by conditions that you define.
		SUM	Adds a range of cells.
		MAX	Returns the largest value from selected cells.
		MIN	Returns the smallest value from selected cells.
		COUNTIF	Counts the number of cells in a range that meet the given criteria.

SPRING 2: COMPUTER SCIENCE: Scratch	Type	Keyword	Definition
	Tier 2 language	Execute	A computer precisely runs through the instructions.
		Sequence	Running instructions in order.
		Blocks	Scratch bricks that we can use to code algorithms.
		Lists	Allow multiple items of data to be held.
		Process	A set of instructions currently being processed by the computer processor.
	Tier 3 language	Abstraction	Identify the important aspects to start with.
		Decomposition	Breaking down a problem into smaller parts.
		Algorithm	Precise sequence of instructions.
		Iteration	Doing the same thing more than once.
		Debugging	Looking at where a program might have errors or can be improved.

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Design & Technology - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING 1: D & T	Tier 2 language	Properties	The physical, chemical, or mechanical components of a specific product that would determine its functionality and manufacturability.
		Evaluation	Critically consider how effective or successful a design is.
		Development	Refining ideas to produce a final solution; taking into account all the constraints of costs, materials, function, manufacturing, aesthetics etc.
		Renewable	A natural resource or source of energy that is not depleted when used.
		Analysis	To look very closely at the problem. To break down into basic parts so that the problem can be understood. Analysis is used in the early stages of the design process.
	Tier 3 language	Prototype	A simple experimental model of a proposed solution used to test or validate ideas.
		Specification	A list of features that a product should have.
		Biomimicry	The design and production of materials, structures, and systems that are modelled on biological entities and processes.
		Isometric	A drawing system where the dimensions are not reduced to show a perspective effect. An isometric grid is drawn with lines at 30 degrees and 90 degrees to the horizontal.

Type		Keyword	Definition
SPRING 2: D & T	Tier 2 language	Biodegradable	A capable of being decomposed by bacteria or other living organisms and thereby avoiding pollution.
		Manufactured	A product produced on a large scale using machinery.
		Aesthetics	Attractive - How it looks. Is it a desirable object.
		Consumer	The person who buys or uses the artefact or service.
		Sustainable	The level to which resources can be used without them becoming unavailable in the future.
	Tier 3 language	Photovoltaic	A system that employs solar modules, each comprising a number of **solar cells**, which generate electrical power.
		Deciduous	A tree that sheds its leaves annually.
		Coniferous	A group of trees that have fruit called cones that they do not lose in the winter.

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Drama - Tier 2 and Tier 3 language

SPRING 1: DRAMA: Greek Theatre

Type		Keyword	Definition
Tier 2 language		Mythology	A set of stories about people or creatures that were told a long time ago
		Unison	Doing the same thing at the same time
		Canon	Doing the same movement one after another (like a Mexican wave)
		Ensemble/chorus	A group of actors
		Levels	How high or low a character stands to show status (how powerful they are)
Tier 3 language		Amphitheatre	Where actors in Ancient Greece used to perform – they are usually made of stone and carved into a hillside
		Theatron	The semi-circular seating area in the amphitheatre
		Parados	Used for the chorus to enter and exit the **Orchestra**
		Orchestra	The semi-circular dancing space where the chorus performed
		Skene	The stage where the actors performed

SPRING 2: DRAMA: Waxworks – Story Telling

Type		Keyword	Definition
Tier 2 language		Split focus	Two separate scenes occurring at one time- once scene freezes whilst the other scene performs
		Thought tracking	When a character steps out of a scene to address the audience about how they're feeling
		Multi-role	When an actor plays more than one character onstage
		Tension	A growing sense of expectation within the drama, a feeling that the story is building up towards something exciting happening
		Devising	Creating your own performance using your own ideas
Tier 3 language		Tableau	A still image/freeze frame
		Role-Play	The act of pretending to be somebody else, of taking on a role
		Projection	Speaking clearly enough so the audience can hear what you are saying
		Dialogue	A conversation between two or more people
		Tone	The emotion in the voice to show the audience how the character is feeling

English - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING 1: ENGLISH: Transformations	Tier 2 language	Manipulative (adj.)/ Manipulate (n.)	To secretly try to control someone
		Petrifying (adj.)/ to petrify	Terrifying
		Malicious (adj.)/ Malice (n.)	Cruel/ wicked
		Valiant (adj.)/ Valour (n.)	Brave/ heroic
		Metamorphosis (n.)	To transform
	Tier 3 language	Imperatives (n.)	Commands
		Synonyms (n.)	Words with similar meanings
		Intensifiers (n.)	A modifier added to an adjective/adverb to make its meaning strong e.g. 'very, extremely, really' etc.
		Narrative Voice (n.)	The perspective or viewpoint the story is told from e.g. first/third person etc.
		Suspense (n.)/ Suspenseful (adj.)	Building tension or anticipation on a story

Type		Keyword	Definition
SPRING 2: ENGLISH: Poetry	Tier 2 language	Alternative	Considering a different idea.
		Engage	To draw somebody in or to interest them.
		Cackle	An evil laugh.
		Intimidating	To scare or threaten someone.
		Evidence	To provide proof.
	Tier 3 language	Simile	Comparing using the words 'like' or 'as'.
		Metaphor	Comparing something by saying it is something.
		Enjambment	When a sentence in a poem carries on to the next line.
		Sibilance	The repeated 's' sound of different words.
		Repetition	When a word or phrase is repeated.

Food Technology - Tier 2 and Tier 3 language

	Type	Keyword	Definition
SPRING 1: FOOD TECHNOLOGY: Hygiene	Tier 2 language	Contamination	Making something unclean or unsuitable by contact with something else.
		Hygiene	Conditions or practices used to make something clean to help maintain good health /prevent diseases.
		Bacteria	Microscopic organisms not visible with the naked eye. Some are good and some can make us unwell.
		Microbes	Another term used to describe bacteria or viruses
		Protein	A nutrient found in some plant foods (such as lentils, beans and nuts) and animal foods (such as meat, fish, eggs)
	Tier 3 language	High risk foods	Foods high in protein and moisture
		Cross contamination	The transfer of bacteria into food such as from food to food, person to food or equipment to food.
		Ambient temperature	Normal room temperature. 20 - 25°C
		Antibacterial	Working against or prohibiting the growth of bacteria.
		Danger zone	The temperature range in which bacteria thrive. 5 - 63°c.

	Type	Keyword	Definition
SPRING 2: FOOD TECHNOLOGY:: Diet and health	Tier 2 language	Diet	The kinds of food that a person habitually eats .
		Cholesterol	Fatty substance found in the blood.
		Diabetes	A disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood
		Modify	To change
		Bulk	Being in large quantities. In food these are foods that are filling.
	Tier 3 language	Saturated	This refers to a type of fat found mainly in animal foods such as dairy foods, red meat, pastries, cakes etc . The are the unhealthier types of fat .
		Cardiovascular disease	A term which is used to describe disease of the heart or its blood vessels. This is linked to a poor diet high in fat and sugar.
		Sucrose	Sucrose is produced naturally in plants, from which table sugar is refined.
		Fibre	Correctly referred to as dietary fibre. It includes the parts of plant foods your body can't digest or absorb but aids digestion.

Food Technology - Tier 2 and Tier 3 language

Type	Keyword	Definition
Tier 2 language	Aroma	Typically pleasant **smell.**
	Profile	A description of a something such as food.
	Fibrous	A coarse and stringy, like texture such as celery or pineapple
	Bland	Foods that taste unappealingly or tasteless. That **means dull**, flavourless.
	Appetising	Stimulating one's appetite.
Tier 3 language	Sensory descriptors	Words that describe taste, smell, texture and flavour.
	Olfactory nerves	Special sensory nerves for the sense of smell which plays a part in the way we taste food.
	Organoleptic	A posh term for sensory analysis. Using your sensory organs to test a product. In simple language, taste testing!
	Umami	One of the core tastes including sweet, sour, bitter, and salty.
	Aftertaste	after-effect of flavour leaving a coating in the mouth after chewing food

Type	Keyword	Definition
Tier 2 language	Alkali	Something has a pH higher than 7
	Carbon dioxide	A colourless, odourless gas that is used in food production such as for leavening purposes.
	Aeration	To add or the introduction of air into food.
	Hypothesis	A proposed explanation made on the basis of limited evidence.
Tier 3 language	Enzymic browning	An oxidation reaction that takes place in some foods, mostly fruit and vegetables, causing the food to turn brown.
	Polyphenol oxidase	An enzyme involved in fruit browning found in some fruits such as apples and ripe bananas.
	Leavening	A substance used in dough to make it rise, such as yeast or baking powder.
	Rubbing in	is to coat flour grains with fat by gently rubbing between the fingertips and thumbs, continuing until the mixture resembles coarse breadcrumbs.
	Ascorbic acid	Scientific name for vitamin C; essential for growth and defence against infection

Geography - Tier 2 and Tier 3 language

<table>
<tr><th></th><th>Type</th><th>Keyword</th><th>Definition</th></tr>
<tr><td rowspan="10">SPRING 1: GEOGRAPHY: South America</td><td rowspan="5">Tier 2 language</td><td>Describe</td><td>Say what you see, discuss the characteristics</td></tr>
<tr><td>Molten rock</td><td>Melted rock (magma/lava)</td></tr>
<tr><td>Explain</td><td>Say why. 'This is because…'</td></tr>
<tr><td>Fluctuate</td><td>Rise and fall irregularly in number of amount</td></tr>
<tr><td>Climate</td><td>Average weather conditions over a period of 30 years</td></tr>
<tr><td rowspan="5">Tier 3 language</td><td>Subduction</td><td>The downwards movement of the denser oceanic plate beneath the less dense continental plate</td></tr>
<tr><td>Subsistence agriculture</td><td>The practice of growing crops and raising livestock sufficient only for one's own use</td></tr>
<tr><td>Commercial agriculture</td><td>The production of crops and farm animals for sale, usually with the use of modern technology:</td></tr>
<tr><td>Tectonic plate</td><td>Large sections of the Earth's crust that move due to convection currents</td></tr>
<tr><td>Deforestation</td><td>The cutting down of trees on a large scale</td></tr>
</table>

<table>
<tr><th></th><th>Type</th><th>Keyword</th><th>Definition</th></tr>
<tr><td rowspan="10">SPRING 2: GEOGRAPHY: Extreme Environments</td><td rowspan="5">Tier 2 language</td><td>Adaptation</td><td>Change an organism makes to better suit its environment</td></tr>
<tr><td>Exploit</td><td>Make full use of a resource, potentially in an unsustainable way</td></tr>
<tr><td>Precipitation</td><td>Any type of water that falls from the sky (rain, snow, sleet, hail)</td></tr>
<tr><td>Carbon sink</td><td>A natural environment that is able to absorb carbon dioxide from the atmosphere</td></tr>
<tr><td>Social</td><td>Something relating to people</td></tr>
<tr><td rowspan="5">Tier 3 language</td><td>Cyclone</td><td>An area of low pressure, where air is rising</td></tr>
<tr><td>Anti-cyclone</td><td>An area of high pressure, where air is sinking</td></tr>
<tr><td>Biome</td><td>A large scale ecosystem with specific species of flora and fauna living within a particular climate</td></tr>
<tr><td>Tundra</td><td>A biome forming in areas of high pressure, characterised by extreme cold temperature, high wind speeds and low precipitation</td></tr>
<tr><td>Latitude</td><td>A measurement of the distance from the equator</td></tr>
</table>

History - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING 1: HISTORY: Medieval Realms	Tier 2 language	motive	A reason for a certain action or behaviour to take place
		reform	To correct and change something, to make an improvement in society
		revolt	An uprising against authority, such as the uprising the barons had against King John
		rule	To have control over people as a leader
		tax	A payment that people in a country to make to support the king and the government
	Tier 3 language	crusade	A military journey in the Medieval period completed by European Christians to recapture the Holy Land
		feudal system	A system of government where people are given land and protection by a lord in return for working and fighting for them
		Magna Carta	Charter granted by King John that recognizes the rights of barons, knights, the church and freemen in England
		pilgrimage	A journey to a shrine or another holy place
		Saracens	A Muslim warrior who would fight the Christians who were on crusade

Type		Keyword	Definition
SPRING 2: HISTORY: Medieval Medicine	Tier 2 language	consequence	A result of an event happening
		disease	An unhealthy condition caused by bacteria. It causes symptoms which will help people to identify which disease it is.
		famine	A severe shortage of food
		hygiene	Conditions that allow people and the environment to be healthy. Unhygienic conditions cause dirt and disease.
		social	Used to describe anything relating to human society living together (e.g. social factors)
	Tier 3 language	barber surgeon	A medieval doctor who specialised in surgery such as amputations. They received no proper training.
		bloodletting	The medical practice of removing somebody's blood
		Bubonic plague	An infectious disease that was known as the Black Death. It caused swellings called buboes, fever, and could kill people.
		buboes	Swellings under the skin that were a symptom of the Bubonic plague
		cesspit	A pit which would contain great amounts of rubbish and human waste

Maths - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING 1: MATHS	Tier 2 language	Corresponding	Corresponding objects are those that appear in the same place in two similar situations
		Alternate	The word 'alternate' is usually used with pairs of angles, to indicate that each is on opposite sides of a line
		Approximation	An approximation is anything that is similar, but not exactly equal, to something else.
		Estimate	Estimation means having a rough calculation of the value, number, quantity, or extent of something.
		Bisector	A straight line or plane that bisects an angle.
	Tier 3 language	Perpendicular	Perpendicular lines are lines that intersect at a right (90 degrees) angle.
		Tenths	The first digit to the right of the decimal point; one out of 10 equal parts of a whole
		Denominator	he number below the line in a vulgar fraction; a divisor.
		Numerator	the number above the line in a vulgar fraction showing how many of the parts indicated by the denominator are taken

Type		Keyword	Definition
SPRING 2: MATHS	Tier 2 language	Frequency	How often something happens.
		Calculate	Work out mathematically.
		Solve	To find a solution.
		Substitute	Putting values where the letters are.
		Equivalent	Of equal value.
	Tier 3 language	Proportion	The mathematical comparison between two numbers.
		Coefficient	An integer that is multiplied with the variable.
		Inverse	The opposite of another operation.
		Vertex	The vertices of a solid figure are points where the edges connect and create a corner
		Bar model	A pictorial representation of a problem or concept where bars or boxes are used to represent the known and unknown quantities.

	Type	Keyword	Definition
SPRING 1: MFL	Tier 2 language	noun	a word used to identify any of a class of people, places, or things
		verb	a word used to describe an action, state, or occurrence such as *hear*, *become*, *happen*
		adjective	a word naming an attribute of (describing) a noun, such as *sweet*, *red*, or *technical*
		conjunction	a word used to connect clauses or sentences or to coordinate words in the same clause (e.g. *and*, *but*, *if*).
		translate	Convert / express the sense of (words or text) in another language.
	Tier 3 language	SHET (Spanish)	Son – (they) are Hay - (there is/ there are) Es ((it) is Tiene) (it) has)
		IESAO (French)	Il y a - there is Est -is Sont -(They) are A - (he/she/it) has Ont – (they) have
		WWWWWW	Who What Where When Why
		AVOW	Adjective Verb Order of Words

	Type	Keyword	Definition
SPRING 1: MFL	Tier 2 language	noun	a word used to identify any of a class of people, places, or things
		verb	a word used to describe an action, state, or occurrence such as *hear*, *become*, *happen*
		Adjectival agreement	**the adjective 'agrees' with the noun it's describing in gender and number**
		conjunction	a word used to connect clauses or sentences or to coordinate words in the same clause (e.g. *and*, *but*, *if*).
		Subject pronoun	**those pronouns that perform the action in a sentence**. They are I, you, he, she, we, they, and who
	Tier 3 language	SHET (Spanish)	Son – (they) are Hay - (there is/ there are) Es ((it) is Tiene) (it) has)
		IESAO (French)	Il y a - there is Est -is Sont -(They) are A - (he/she/it) has Ont – (they) have
		TOPCAT	Tenses Opinions Pronouns Conjuctions Adjectival Agreement Translate
		AVOW	Adjective Verb Order of Words
		PALM	People Action Location Mood

Music - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING: MUSIC	Tier 2 language	**Rhythm**	Different lengths (durations) of notes mixed together create a rhythm. This fits into the beat.
		Duration	The length of a note
		Tempo	The speed of the music
		Time Signature	A sign (looks like a fraction) that tells us how many beats are in each bar
		Beat	The pulse in music
	Tier 3 language	**Semibreve**	A note that lasts for 4 beats
		Minim	A note that lasts for 2 beats
		Crotchet	A note that lasts for 1 beat
		Quaver	A note that lasts for ½ of a beat
		Semiquaver	A note that lasts for ¼ of a beat

Colour code: BLUE= Tier 3 words   ORANGE= Tier 2 words   Look out for colour coding during lessons!

Religion and Ethics - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING 1: RE	Tier 2 language	Compassion	To care so deeply you have to act to try and help
		Squall	A storm at sea
		Vulnerable	To feel weak and on your own. Can feel like this within a society.
		Respect	To treat people with care and equality
		Recruit	To enlist or gain someone to belong to your team or group
	Tier 3 language	Baptism	The process of using water to symbolising cleansing and starting a new life. Christians also do this as a welcoming ceremony
		Ministry	The role of going out and teaching people about God
		Trinity	The 3 parts of the one God in Christianity: the father, the son and the holy spirit
		Parable	A story with a hidden symbolic meaning. Jesus told parables
		Miracle	Something which breaks laws of science and therefore seems impossible

Type		Keyword	Definition
SPRING 2: RE	Tier 2 language	Dedicate	To set aside time for something or a being (God)
		Distinguish	To set yourself apart from others
		Covet	To desire and envy someone's property
		Adultery	To cheat and have sex outside of your marriage
		Commitment	To be dedicated to something or someone
	Tier 3 language	Prophet	A messenger from God
		Sanctify	To set a part and make special for God
		Kosher	'Clean' or 'correct'. The food laws found un the Torah, the Jewish holy scripture
		Omnipotent	All powerful
		Shabbat	The Jewish holy day sanctified for God.

Science - Tier 2 and Tier 3 language

Type		Keyword	Definition
SPRING 1: SCIENCE	Tier 2 language	Streamlined	Having a form that presents very little resistance to a flow of air or water.
		Adolescence	Time when physical and emotional changes occur in teenagers.
		Population	All the members of a single species that live in a habitat
		Ecosystem	A community and the habitat in which organisms live
		Characteristics	A feature or quality belonging typically to a person, place, or thing and serving to identify them.
	Tier 3 language	Fertilisation	The action or process of fertilizing an egg or a female animal or plant, involving the fusion of male and female gametes to form a zygote.
		Gametes	A mature male or female sex cell which is able to unite with another of the opposite sex in sexual reproduction.
		Ovulation	The release of a mature egg from an ovary
		Continuous	The feature can vary over a range of values e.g. height, weight, leaf area.
		Discontinuous	The feature can only take certain values e.g. blood group.

Type		Keyword	Definition
SPRING 2: SCIENCE	Tier 2 language	Solution	Is a mixture of a solute and a solvent that does not separate out.
		Filtering	Separation of an insoluble solid from a solution
		Transparent	Allowing light to pass through so that objects behind can be distinctly seen.
		Boiling	Boiling – When there is liquid turning into a gas in all parts of a liquid, creating bubbles of gas in the liquid.
		Hazard	A hazard is something that that can cause harm.
	Tier 3 language	Chromatography	A technique for the separation of a mixture by passing it in solution through a medium in which the components move at different rates.
		Colloid	The solid pieces are smaller so they don't settle out, and the mixture looks cloudy or opaque.
		Distillation	The action of purifying a liquid by a process of heating and cooling.
		Neutralisation	Make (an acidic or alkaline substance) chemically neutral.
		Solubility	A measure of how much solute will dissolve.