SPRING KNOWLEDGE ORGANISER

YEAR 7

Literacy / key words

Portrait - a picture that shows a person's face.

Self-Portrait - a picture an artist makes of themselves.

Proportion - making parts of a drawing the right size compared to each other.

Simplicity - simplicity means not adding too many details.

Abstract - using shapes, colours and lines instead of realistic images.

Expressions - the different lines, dots, or textures an artist creates to build up a drawing or painting.

Likeness - the recognisable appearance and features of a person.

Features - the eyes, nose, mouth, ears, and eyebrows.

Portraiture

Portraiture is a type of art that focuses on showing a person's face, whether through paintings, drawings, photographs or sculptures. The main goal is to capture a person's personality and emotions. Self-portraits are artworks where artists show themselves. These works allow artists to explore their own emotions and thoughts. Both portraiture and self-portraits help express identity and emotions, offering a look into the people, places and cultures that they come from.

YEAR 7 What is Portraiture?

Proportion

Artists use guidelines to divide the face into sections, helping to position the eyes, nose, and mouth correctly. Understanding these proportions is crucial for creating realistic portraits, as they ensure that features are in harmony with one another.

Facial Proportions

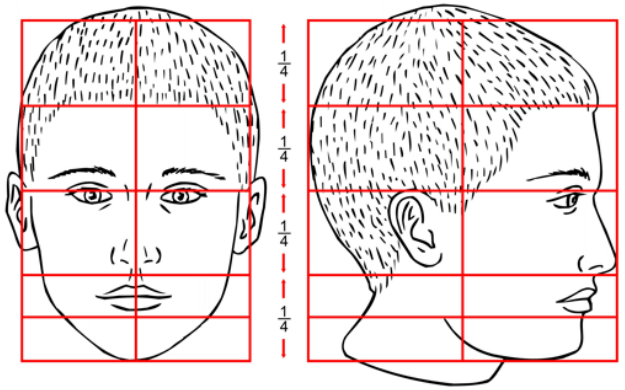
1. The face is 5 eyes wide, with 1 eye's width between the eyes.
2. The eyes are positioned halfway down the head, dividing the face into equal upper and lower halves.
3. The width of the nose is the same as the distance between the inner corners of the eyes.
4. The mouth is generally positioned one-third of the way down from the bottom of the nose to the chin.
5. While no face is perfectly symmetrical, each side of the face should have a similar overall shape and size, helping to create a balanced appearance.

Julian Opie

Julian Opie is a portrait artist famous for his unique style. He transforms realistic portraits into simple, abstract characters using bold lines and flat colours. The facial features are bold and simple yet they still create an accurate portrait with a key likeness.

Florian Nicolle

Florian Nicolle is known for his striking illustrations. He combines traditional, realistic drawing in neutral colours with abstract and bold marks. His work often features strong lines and vibrant colours, capturing the facial expressions in an interesting way.

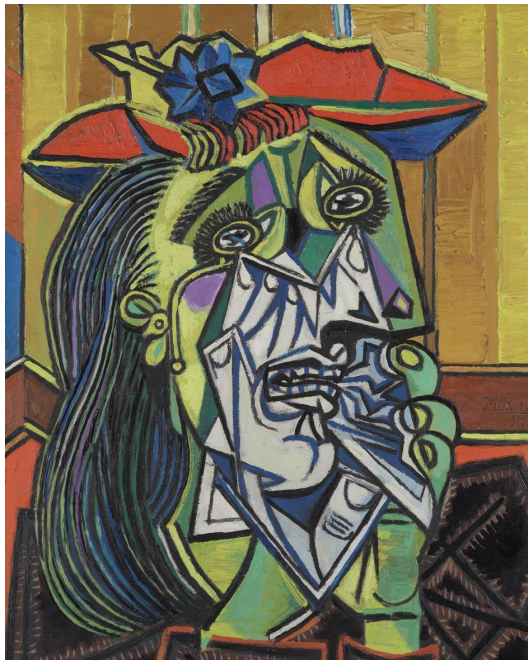


Extra - Read/watch/do

- https://www.bbc.co.uk/teach/class-clips-video/articles/zk28qp3 - BBC bitesize 'How to Draw a Portrait'
- https://www.bbc.co.uk/bitesize/guides/z3dthv4/revision/1 - BBC Bitesize 'Portrait Painting Styles'
- https://www.youtube.com/watch?v=wfosxuah1uk – 'How To Draw a Quick, Simple, and Easy Self-Portrait'

Pablo Picasso

Picasso was a Spanish artist known for creating new art styles, like cubism, where he painted people and objects with broken-up shapes and angles. He also used bold colours, unusual shapes, and experimented with different textures in his work. Besides cubism, Picasso worked in many styles, including realism, surrealism, and abstract art. His creativity changed how people see art, making it more imaginative and expressive.



Collage

A collage is an art technique where you glue different materials like paper, fabric, or photos onto a surface to create a new image. It's a way to mix colours, textures, and shapes for unique effects.

Watercolour

Watercolour is a painting method using water to spread colour smoothly and lightly across the paper. It's great for creating soft, transparent layers and blending colours easily.

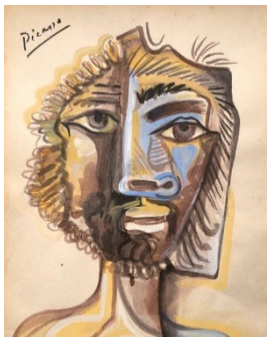
Sgraffito

Sgraffito is an art technique where you scratch through a top layer of paint or clay to reveal a different colour underneath. It creates interesting textures and patterns by showing the contrast between the layers. It is often used in pottery.

What techniques will I learn?

Oil Pastel Transfer

Oil pastel transfer as a printing method involving colouring an area with oil pastels, placing a clean sheet of paper on top, and then drawing or pressing over it to transfer the pastel onto the new sheet.



Relief Printing

Relief print is a method where you carve a design into a surface, cover the raised areas with ink, and press it onto paper to make a print. This technique creates bold, textured designs and is commonly used with wood or linoleum.

You will be assessed on

- Term 1 - Self-Portrait (tonal shading)
- Term 2 - Negative space (oil pastel transfer)
- Term 3 - Picasso portrait (watercolour)

Links to curriculum

English and History - In our lessons, we will look at a different artist each time and talk about their artwork, helping you learn to describe and discuss what you see.

GREEK THEATRE

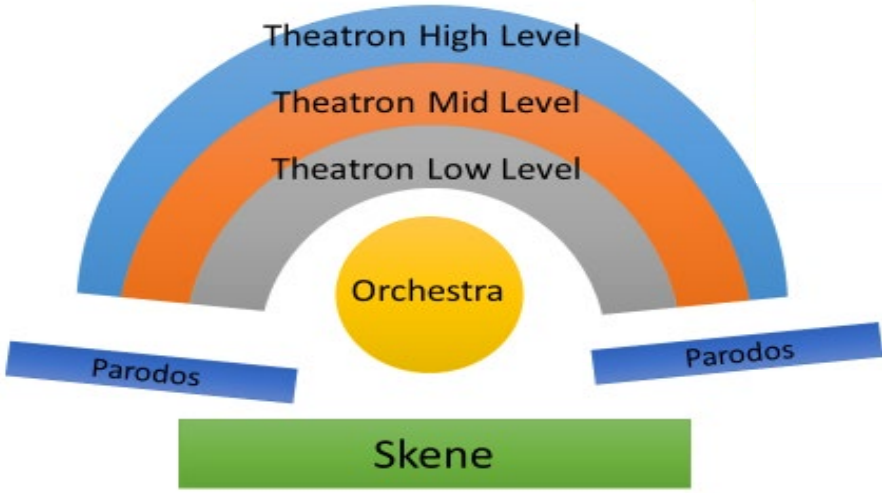
Canon – moving one after another (the same movement)

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

Key Question: What is a Amphitheatre? What was theatre like in Ancient Greece?

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.



1. The chorus was one of the most important components of the play.
2. They narrated and reflected on the action.
3. Without them, the audience would have no background information, and the play would be more confusing.
4. Originally the chorus had **twelve** members.
5. 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

UPSTAGE RIGHT	UPSTAGE CENTRE	UPSTAGE LEFT
CENTRE STAGE RIGHT	CENTRE STAGE	CENTRE STAGE LEFT
DOWNSTAGE RIGHT	DOWNSTAGE CENTRE	DOWNSTAGE LEFT

AUDIENCE

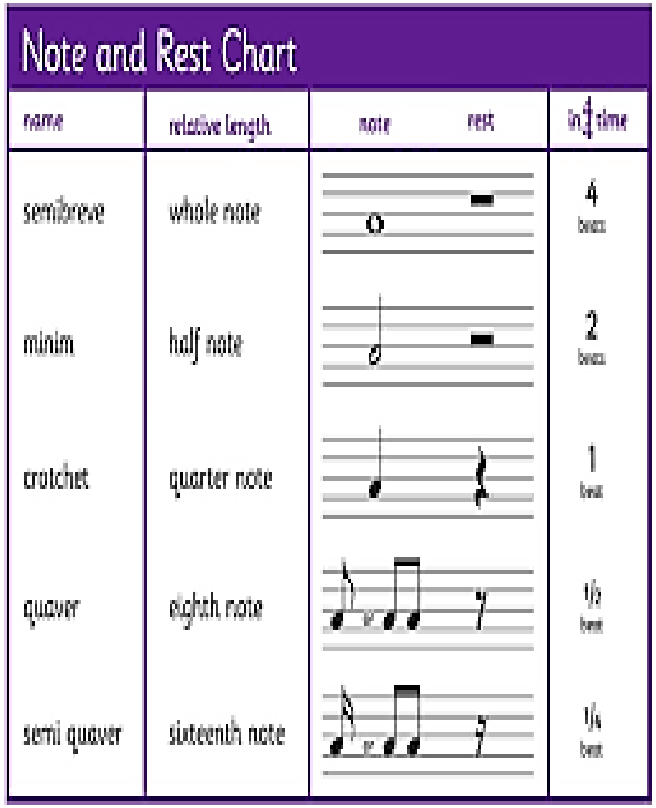
Key Skills:
Audience Awareness, Vocal projection, Facial Expressions, Body Language, Gestures, Pitch, Pace, Pause, Tone

Madame Tussauds

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

RHYTHM and PULSE

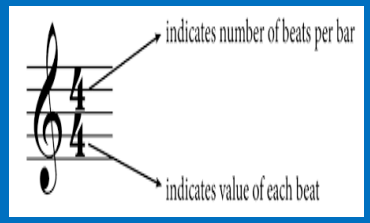
NOTE NAMES, VALUES AND RESTS



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:



There are lots of different time signatures but you will be using this one which means you are counting 4 crotchet beats per bar.

TEMPO MARKINGS

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

English: Powerful female characters

Literacy / key words

Vivacious: Lively, spirited, and full of life.

Accomplished: Skilled in various pursuits

Tenacious: Persistent and determined in holding onto or seeking something.

Inquisitive: Eager to learn and investigate; curious about details and underlying truths.

Elusive: Difficult to find, catch, or achieve.

Perceptive: Having a keen understanding or insight into things; able to notice and understand things that are not

High tier punctuation:

- ✓ **!** = shows strong emotion
- ✓ **?**
- ✓ **;** (connects two main clauses/ 'replaces and' or full stop)
- ✓ **:** (introduces list, separate subordinate clause, 'replaces because')
- ✓ **( )** (introduces extra information, subordinate clause)
- ✓ **– … –** (introduces extra information, subordinate clause)
- ✓ **–** (one dash shows a pause)
- ✓ **…**

Dialogue punctuation:

- "Speech marks"
- New line for each new speaker
- Punctuation inside speech marks e.g. *"Get down!" shouted Scarlett.*
- If the speech verb comes in the middle of dialogue, it also needs punctuation e.g. *"Get down," shouted Scarlett. "I'll cover you!"*

Creating character

The things they say

- ✓ Shouted/Screamed
- ✓ Whispered
- ✓ Laughed/ chuckled
- ✓ Reassured
- ✓ Ordered/ demanded
- ✓ Snarled

Backstory

- ✓ Job
- ✓ Childhood
- ✓ Goal/ aim

How they treat others

Physical description

- ✓ Eyes/ hair/ smile
- ✓ Body/ hands/ arms/ legs
- ✓ Clothes
- ✓ Accessories (sunglasses, weapons, phone etc)
- ✓ Jewellery
- ✓ Tattoos/ scars

Actions

- ✓ Strolled/ sprinted/ crept/ chased/ pursued
- ✓ Fought/ kicked/ attacked/ punched
- ✓ Searched/ found
- ✓ Looked/ gazed/ stared/ glared/ watched
- ✓ Hid/ followed
- ✓ Declared/ roared/ protested

TIF: Further reading

- *Little Women*, Louisa May Alcott
- *Emma,* Jane Austen
- *A good girls guide to murder*, Holly Jackson
- *A series of unfortunate events*, Lemony Snicket

You will be assessed on:

Writing assessment where you create and describe a powerful female character

Links to curriculum:

- History – strong female rulers
- PSHE – gender roles/ stereotypes

English: Powerful female characters

Literacy / key words

Patrirarchy
a system of society or government controlled by men

TIF – Adjectives Word Bank

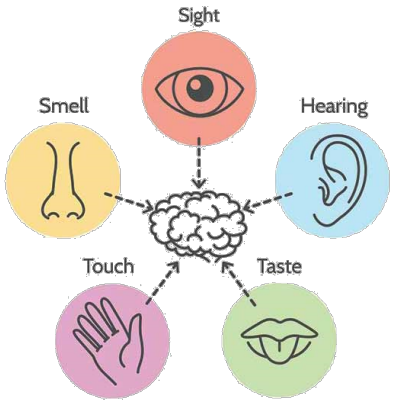
Sagacious: Exhibiting wisdom and good judgment.

Perspicacious: Having a keen ability to notice and understand things that are not obvious.

Judicious - Having or showing good judgment or sense.

Meticulous - Showing great attention to detail.

Sensory imagery



TECHNIQUES:

Simile: compares with like/as:

The city was buzzing like a hive.

Metaphor: compares directly

The moon was a golden coin.

Personification: describes non-human as human

The trees danced in the wind.

Rhetorical question: question to make the reader think

What should I do?

Zoomorphism: describes human as an animal

She snarled angrily.

Triplet/tricolon: list of 3

The storm was terrifying, fierce, and overwhelming.

Sibilance: alliteration starting with 's'

She smiled slyly and slipped forwards.

Hyperbole: Exaggeration

Her smile was as powerful as the sun

Paragraph rules

INTERESTING SENTENCE OPENINGS

- ✓ ***Start with an adverb:*** Quickly, suddenly, angrily etc
  Carefully, she looked round.
- ✓ ***Start with a preposition:*** Above, around, below etc
  Above her head, the stars twinkled.
- ✓ ***Start with a verb:*** Running, laughing, watching etc.
  Roaring, she sprang into action!
- ✓ ***Start with a subordinate clause:***
  Although her heart was racing, she crept forwards.
- ✓ ***Start with a simile:*** like/as
  Like a crashing wave, she charged forwards
- ✓ ***Create a mystery:*** grab your reader's attention!
  It was only meant to be a game. But it went wrong...

Sentence Forms

Minor: 1-2 words – *'Stop!', 'Go now!'*

Simple: One main clause (Subject + verb)

'You need to leave'

Compound: Sentence with two main clause linked with **;** or a connective

'The lord was evil; he was plotting against the king.'

'It was a beautiful day and the sun was shining'.

Complex: Main clause with 1 or more subordinate clause

'Slowly, he rose to his feet'

'Although it was night, the streets were crowded'

Different sentence types have different effects:

- ✓ *Minor/simple sentences* = slower pace and more tension
- ✓ *Compound/complex sentences* = faster pace, quick action,

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.*

Triplet – list of 3

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.

River Story by Brian Patten

This poem describes a river which is polluted over time by humans.

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.

Extra Reading:

- *The lake isle of Innisfree,* William Butler Yates
- *Stopping by the wood on a snowy night,* Robert Frost
- *Wild Geese,* Mary Oliver
- *Nature is what we see,* Emily Dickinson

You will be assessed on:

Reading assessment analysing one of the previously studied poems

Links to curriculum

Science – natural forces

Geography – natural disasters

Adjectives to describe nature (P):

- ✓ Beautiful
- ✓ Dangerous
- ✓ Powerful
- ✓ Threatening
- ✓ Sinister
- ✓ Magnificent
- ✓ Fascinating
- ✓ Revitalising/ reinvigorating (*makes you feel better/ full of energy*)
- ✓ Tranquil/ peaceful
- ✓ Sacred (holy)
- ✓ Refreshing/ soothing
- ✓ Awe-inspiring
- ✓ Precious/ important

Sentence starters:

- **P**. The poet presents… as…
- **E.** This is shown in the quote "…".
- **A.** This implies/suggests... because...
- **R**. The reader will think/feel... because...

TIF:

- **A**. Also, the (*adjective/ verb etc*) emphasises...
- **A**: The (*structure technique*) also suggests…
- **R**: The writer intended to… because…

EXT:

- **This contrast to (*different poem*) because…**
- **Similarly/ likewise/ conversely/ in contrast… because…**

Verbs of inference (E & A):

- ✓ Presents
- ✓ Describes
- ✓ Shows
- ✓ Reveals
- ✓ Portrays
- ✓ Suggests
- ✓ Implies
- ✓ Emphasises
- ✓ Highlights
- ✓ Has connotations of
- ✓ Develops

Writer intent/ reader response (R)

- ✓ Think/feel
- ✓ Understand/ recognise
- ✓ Criticise
- ✓ Warn
- ✓ Celebrate
- ✓ Encourage
- ✓ Protect
- ✓ Like/ dislike
- ✓ Visualise (*imagine clearly in your mind*)
- ✓ Fear

Key Quotes/techniques from Poems

Spellbound

'A tyrant spell has bound me' (Metaphor)

'The wild winds coldly blow'(Adjective)

Below the Green Corrie

'The mountains gathered around me like bandits' (Simile)

'Their leader swaggered up close in the dark light' (personification)

Storm in the Black Forest

'Jugfull after jugfull of pure white liquid fire' (repetition/ metaphor)

'A still brighter white snake wriggles among it' (metaphor)

Wind

'woods crashing through darkness' (onomatopoeia)

'Winds stampeding the fields' (verb)

The Moment

'trees unloose their soft arms from around you'(personification)

'air moves back from you like a wave' (simile)

Hurricane

'Zinc sheets are kites.' (metaphor)

'Then growling it slunk away.' (personification)

Daffodils

'Fluttering and dancing in the breeze.'(personification)

'Ten thousand saw I at a glance' (hyperbole)

Geography – Rivers & The Middle East

Literacy / key words

Abrasion – a type of erosion where stones being carried by the water scrape away rock.

Confluence – the point where two rivers join together.

Deposition – the laying down or dumping of material in a river. It happens when the river does not have enough energy to carry the stones, sand or mud it is carrying.

Drainage basin – an area of land drained by a river and its tributaries.

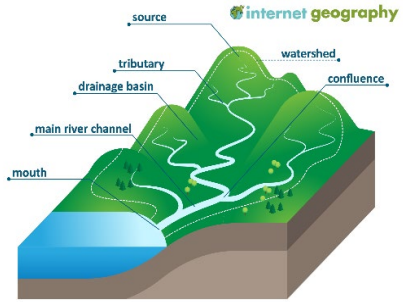
Erosion – the wearing away of the land, often by the action of wind, water or ice.

Ganges – the name of a major river flowing through Asia. It is a sacred river.

How do drainage basins interact with the water cycle?

The water cycle is where rainfall (precipitation) falls on the land, it travels along rivers to the sea, then evaporates. When it reaches the upper atmosphere, clouds form due to condensation and it rains. Here we have rain inputting water into the system, run off being a flow of water and evaporation being an output.

The water cycle interacts with a drainage basin because it adds water to the land and to rivers through precipitation. It may infiltrate the soil where it is stored for some time before it gets into the river where it will flow along the tributaries into the main river until it reaches the mouth. Water may be evaporated and leave the drainage basin (output).

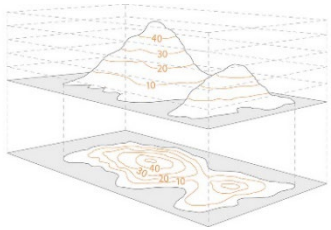


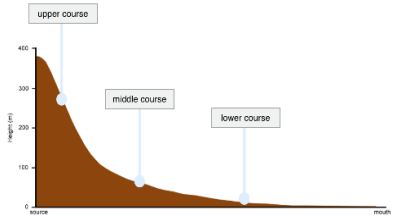
Understanding relief – long profiles

Contour lines are brown lines on an OS map that join areas of equal height. The height of the land may be written along the line.

When contour lines are close together the land is steeply sloped, when the contour lines are far apart the land is flatter or more gently sloped.

A long-profile of a river shows you the height and slope of the land along the river's course. The upper course is characterised by high, steeply sloping land. The middle course has more gently sloping land. The lower course of a river is close to the mouth where the land is flatter.





Where are the world's key rivers?

The Ganges is in Asia, it flows through India and Bangladesh. It provides fresh water to millions of people living in these countries. When the river floods it fertilises the soil which is important for farming rice, as well as being a source of fish to be sold and eaten. It also has a significant religious significance and is worshiped by the millions of Hindu people who live in the region. It is seen as an honour to have your funeral pyre on the river.

The Nile is amongst the longest rivers in the world. Flooding on the Nile Delta creates fertile soil which is important for growing wheat, barley and cotton. HEP used to power industries, which is important for industrial growth. Transportation of goods on boats. Historical and cultural significance has made it an important tourist attraction.)

Extra - Read/watch/do

Take a walk along the River Mersey to see different features e.g. meanders, as well as ways the river has been managed e.g. embankments.

Visit Malham to see the waterfalls Janet's Foss and Gordale Scar.

Watch Planet Earth – Rivers to see the changes to the width and depth of the river as it moves downstream, as well as features such as waterfalls, meanders and deltas.

You will be assessed on

The key assessment skill in this unit is to describe processes. You should show an ability to:

- Write the process in the correct order
- Use key terms
- Define the key terms used
- TIF: Explain why these processes happen

Links to curriculum

You have already learned about rocks and discussed their properties, e.g. pores, how easy they are to break. This helps us to understand erosion in rivers.

You will learn about landscapes again in *Ice Worlds* (Y8) and *Coasts* (Y9)

Literacy / key words

Hydraulic action – a process of erosion whereby the sheer power of water forces cracks in the rock to break open, sometime this is because air is pushed into the cracks, forcing them open.

Lateral erosion – the 'sideways' erosion of a river, causing it to erode into the river bank.

Meander – a bend in a river.

Mouth – the end of a river where it flows into a lake or the sea.

Nile – the longest river in Africa.

Source – the starting point of a river, often a spring or water emerging from the ground.

Tributary – a small stream or river that flows into a larger river.

Vertical erosion – the 'downwards' erosion of a river, causing the bed to erode deeper.

Waterfall – a vertical drop of water in a river, often found in the upper course, formed through erosion.

Watershed – the boundary between one drainage basin and another.

How do rivers erode?

Read the definitions for erosion, hydraulic action, abrasion, lateral and vertical erosion.

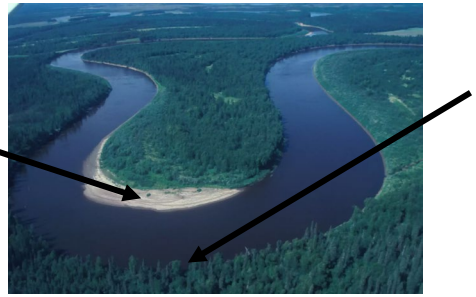
Different types of erosion can happen in the same place at the same time, speeding up the erosion process.

What are meanders like?

Meanders are bends in a river.

The fastest flow of the river is on the outside of the bend. This creates more erosion and the river is deeper here. On the inside of the bend, the water has less energy, so it deposits material. This makes the river shallow here.

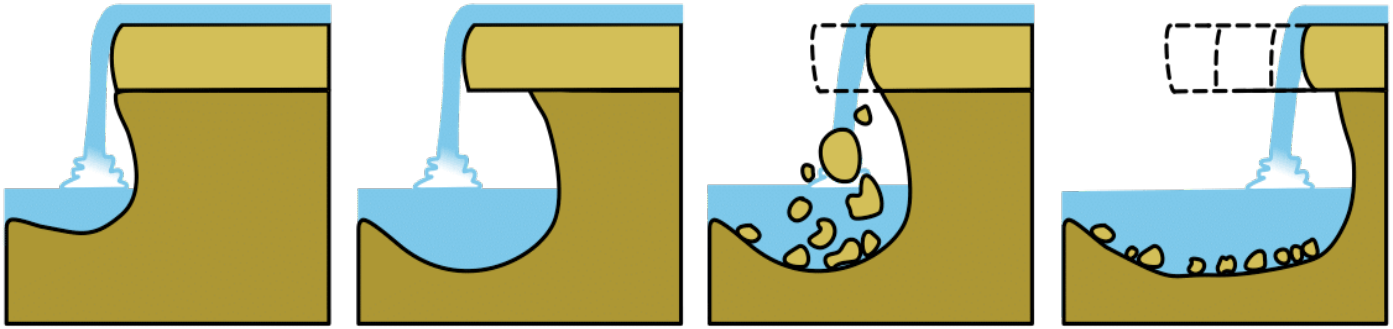
Inside bend where the flow is slower and sand has been deposited on the river bank.



Outside bend where the flow is faster and the river bank is being eroded.

How do waterfalls change over time?

Water flows over a band of hard rock followed by a band of soft rock. Vertical erosion causes a drop to form. As the drop gets bigger, the pressure from hydraulic action increases, creating a plunge pool, which undercuts the hard rock, leaving an overhang. The overhang collapses, adding more material to the plunge pool, increasing abrasion, and the process continues. As the waterfall retreats, it leaves a steep sided gorge either side of the waterfall.



Geography – Rivers & The Middle East

Literacy / key words

Adaptation – the process of a plant or animal evolving over time to become suited to its environment.
Desert – an ecosystem that receives very little rainfall
Ecosystem – a community of plants and animals that interact with each other and their environment
Futuristic – having or involving very modern technology or design
Middle East – the region of countries that are located at the point where north east Africa meets south-west Asia by the Mediterranean Sea
Non-renewable – forms of energy e.g. gas, oil and coal, that cannot be used more than once
Renewable – forms of energy that can be used multiple times e.g. solar, wind and tidal energy
Resource – a material that can be used to help a place function e.g. water, food and electricity
Sustainable – something that meets the needs of the present, without damaging the ability of future generations to meet their own needs.

Where is the Middle East?
The Middle East is positioned to the south east of Europe, between the Mediterranean Sea and the Arabian Sea. It is made up of 17 countries.
Physical features – The rivers Jordan, Euphrates and Tigris pass through various countries. The geology is mainly sedimentary rock containing fossils. There are huge reserves of oil between their layers.
Human features – key cities of Riyadh and Dubai have iconic skylines and contain the tallest buildings in the world. Islam, Christianity and Judaism are key religions in the Middle East.

What are deserts like in the Middle East?
The main biome in the Middle East is the Arabian Desert, which is the largest desert in Asia covering 2.3million km².
The soils in the Arabian Desert are sand. The very hot and very dry climate means that soils dry out, turning them to sand. Sand is also there partly because the rocky outcrops of plateaus have particles scraped away due to the abrasive action of sand blowing against them. These particles become sand themselves.
Sand cats - these are beige coloured making them camouflaged against the sand. Their paws spread out, meaning they do not make tracks in firm sand, so predators cannot track them. It also means they can travel far distances running over the sand quickly to get prey.
Saltbush – this does not need much water to grow and it is tolerant of the salt in the sand. It absorbs some salt through the roots when it rains, and then excretes it through tiny hairs on its leaves. This makes the plant silvery grey in colour which reflects the most intense sunlight that could scorch the leaves.

What resources does the Middle East have?
It is estimated that 65% of the world's oil is found in the Middle East. Five of the top ten oil producers in the world are from the Middle East, with Saudi Arabia producing the most oil. Many of these countries have used this oil to develop their economies and infrastructure rapidly.
The oil industry in Saudi Arabia is state owned, which means the government owns it. Therefore, the profits go directly to the government. They have realised that the oil will run out in the future, so they use the profits to build new industries, such as tourism, finance and healthcare, as well as into renewable energy production, which is far more environmentally friendly.
The UK has increased the amount of oil it buys from the Middle East in recent years. In 2022 the UK bought £60bill of oil from the Middle East. This has meant that the UK can continue to put petrol in our cars and fuel our homes and businesses relatively cheaply. However, some people feel that we should not rely on the Middle East to supply our energy because it makes us vulnerable to price increases, oil is bad for the environment and will eventually run out.

Extra - Read/watch/do
- Read news articles from respected sources about NEOM.
- Watch clips online about people's trips to the Middle East.
- Visit a zoo and see animals that are typical of the desert – what features do they have?.

You will be assessed on
The key assessment skill in this unit is to describe places. You should show an ability to:
- Say what the place is like – physical and/or human features
- Use key terms
- Give specific facts
- TIF: Explain why these features exist in that place

Links to curriculum
Rocks and soils studied in Unit 1 – this builds on the ideas of erosion and sandy soils.
Urban Environments studied in Unit 2 – Recognising features of urban areas and their significance.

What makes Dubai a futuristic city?

- Skyline – Dubai is currently home to the world's tallest building the Burj Khalifa, as well as many other striking sky-scrapers. They are glass fronted and modern in appearance. This skyline has grown quickly since the 1950s.
- Palm Jumeirah – reclaiming land into the sea to create islands in the shape of palm leaves on a tree, which people could buy to live on. Over 25,000 people live on the islands and there are also luxury hotel resorts there too, as well as the Middle East's first monorail.
- 'Building roads in the sky' – Dubai are investing in their air space and are hoping to use drones far more in delivering goods around the city. This will take vehicles off the road and improve air quality.
- Sustainability focus – Recognising that to be a futuristic city they need to still be successful in the future, Dubai is investing heavily into protecting the environment. Dubai has always used a lot of water and energy. The water was taken from the sea and the salt removed using high-energy techniques. They are now trying to recycle water and use solar energy in homes instead of burning fossil fuels.

Should NEOM be built?

What is Neom? Neom is an urban area being built in the desert in Saudi Arabia. Multiple regions are planned, including a floating industrial complex, global trade hub, tourist resorts, and a linear city powered by renewable energy sources. The area will cover 10,200 square miles and its initial cost was estimated to be $500 billion.

Arguments for building Neom:

- Neom will be a way for Saudi Arabia to change its economy so it does not rely too heavily on oil to make money, as oil will run out in the future. Saudi Arabia claimed that NEOM would create around 460,000 jobs and add an estimated $48 billion to the country's GDP.
- The project aims to be environmentally sustainable with the energy created solely with wind and solar power.
- Neom pushes innovation to the extreme. All of the projects are completely new in their design concepts and create a new way of thinking about architecture and engineering. The best of these ideas, if they are successful, can be copied in projects in other parts of the world.

Arguments against building Neom:

- Building the site is too dangerous. It is estimated 21,000 people have been killed since building work started in 2017. These are mainly builders from India, Bangladesh and Nepal. The Saudi government has been accused of enforcing illegal working hours, unsafe 'slave-like' conditions and wage theft.
- Tribes who lived on the land have been forcibly removed. 20,000 members of the Howeitat tribe have been forces off their land, and those who protested have been killed or sentenced to death.
- The project has fallen behind schedule with only two buildings having been completed by July 2022 and most of the area remained bare desert. In 2024 it began to 'scale back' its plans due to rising costs and slow progress. It is thought the project will take at least 50 years to complete.

Topic 3 – Medieval World

Literacy / key words

Noble belonging by rank, title, or birth to the aristocracy.

Aristocracy the highest class in certain societies, typically comprising people of noble birth holding titles

Duchess the wife or widow of a duke/a woman holding a rank equivalent to duke in her own right.

Crusade a European military trip to the Holy Land

Holy Land a region that included Jerusalem, considered sacred by Christians, Jews, and Muslims

Pilgrimage to go on a journey to a sacred place for religion reasons

Empire a group of states or countries ruled over by monarch

Who was Eleanor of Aquitaine?

Eleanor of Aquitaine (1122-1204) was a powerful and influential woman in the Middle Ages, who was queen of both France and England. She was well educated and inherited a vast estate after her father's death at age 15.

Eleanor married Henry of Anjou, who became King Henry II of England in 1154. She became queen of England and united England, Normandy, and Aquitaine under her rule.

Who were the Angevins?

The Angevin Empire was a collection of lands ruled by the Plantagenet dynasty in the 12th and 13th centuries. The empire included:

- **England**: The Angevin kings ruled all of England and southern Wales
- **Ireland**: Part of the Angevin Empire
- **Wales**: Part of the Angevin Empire
- **France**: Roughly half of France
- **Other territories**: Gascony, Poitou, and Auvergne

The empire was established by Henry II of England, who became king in 1154. The name "Angevin" comes from the French region of Anjou, where the Plantagenet family originated.

What were pilgrimages?

A medieval pilgrimage was a journey to a holy place for religious reasons, often undertaken on foot or horseback.

Pilgrimages were undertaken so the pilgrim could:

- Connect with their faith
- Atone (apologise) for their sins
- Earn God's favour

Pilgrimages were often long and dangerous, with pilgrims facing physical hardships like harsh weather, dangerous roads, and long distances.

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.*

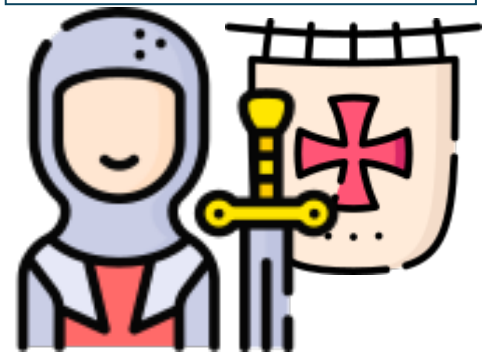
What were the Crusades?

In the medieval era, there were several *Crusades* made by people from European Christian countries.

Crusaders believed they were carrying out their God's work by taking part in **military campaigns** to 'reclaim' the *Holy Land* for Christianity. They followed the wishes of the Pope - the head of the Catholic Church.

People who went on the Crusades were motivated by different reasons including the prospect of wealth, freedom or power.

Key figures involved in the Crusades included **Richard the Lionheart** and Salah ad-Din who was known to the Crusaders as **Saladin**.



Extra - Read/watch/do

Eleanor of Aquitaine: https://www.bbc.co.uk/history/historic_figures/eleanor_of_aquitaine.shtml

The Angevin Empire: https://www.english-heritage.org.uk/visit/places/dover-castle/history-and-stories/angevin-empire/

You will be assessed on

Knowledge of the Crusades, Medieval England, Medieval Religion, the Black Death, the Peasants Revolt, other rebellions.

Links to curriculum

RE

English

Geography

French

Topic 3 – Medieval World

Literacy / key words

Empire a group of states or countries ruled over by one monarch

Superstition unscientific beliefs based on the laws of nature

Archbishop a head bishop responsible for lots of churches and districts

Monastery a building or buildings occupied by a community of monks living under religious vows.

Excommunicated to be removed as a member of the Catholic Church

Feudal System a hierarchy

Revolt take violent action against established government or ruler, to rebel.

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.*

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:

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***

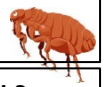
Medieval views of Hell:

*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***

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 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.

Literacy / key words

Allah – the Arabic term for God.

Prophet – A messenger of God.

Muhammad (pbuh) – the most important prophet in Islam, he received the Qur'an.

Qur'an – Holy Book of Islam.

Hadith – Sayings of the Prophet Muhammad (pbuh).

Sunni – A branch of Islam that follows the succession of Abu Bakr.

Shia – A branch of Islam that follows the succession of Ali.

Shahadah - declaration of Faith.

Salah - prayer.

Zakat - charity, giving 2.5% of wealth to charity.

Sawm – Fasting (not eating) for Ramadan.

Hajj – Islamic Pilgrimage.

Ramadan – Islamic month when Muslims fast.

The Five Pillars of Islam

1) Shahadah – the declaration of faith says that: "There is no God, but Allah and Muhammad is His messenger."
2) Salah – prayer, Muslims pray five times per day.
3) Zakat – charity, giving 2.5% of wealth to charity.
4) Sawm – fasting (not eating or drinking) during the months of Ramadan. Muslims do not eat or drink anything during daylight hours for a month.
5) Hajj – pilgrimage there is a pilgrimage (religious journey) to Makkah that every Muslim should complete at least once in their lifetime.

YEAR 7 What is Islam?

Hajj

Hajj is the fifth pillar of Islam. It is a pilgrimage to Makkah in Saudi Arabia where the prophet Muhammad (pbuh) was born and where the Ka'aba (house of Allah) is. Makkah is the holiest site in Islam.

- Hajj takes six days
- Pilgrims who have completed Hajj are cleansed of their sins.
- After completing Hajj a Muslim can use the title Hajji.

Sawm

Sawm is the fourth pillar of Islam. It is fasting (not eating or drinking) during daylight hours for the month of Ramadan. Before sunrise Muslims will get up early to have a meal called **Suhur** and after sunset, they have a meal called **Iftar.**

Extra - Read/watch/do

BBC Bitesize – Facts about Islam - https://www.bbc.co.uk/bitesize/articles/znhjcqt

BBC Teach – My Life, My Religion: Islam (YouTube Playlist) - https://youtube.com/playlist?list=PLcvEcrsF_9zIOMts7w1FRLb1pVFYaEo20&si=XYCEmmLf_670NGdJ

Keywords

Does God Exist?

Atheist- someone who does not believe in God

Agnostic- when you're not sure if God exists.

Theist- believer in God.

Monotheism- belief in one God.

What is God like?

Eternal - without beginning or end, timeless.

Creator- start point of the Universe and life on Earth.

Transcendent – beyond this world, God cannot fit into our categories.

Omnipotent- all powerful

Omniscient- all knowing.

Omnibenevolent- all loving/all good.

Cosmological/First Cause Argument for the Existence of God

St Thomas Aquinas

St Thomas Aquinas (1225-1274 CE) argued that **all things that happen have a cause**, for example when a football travels through the air we know it is because a player kicked it but if we were to go further back we might say that player kicked the ball because the last player passed it to them and the player before passed it to them and so on. **Aquinas argued all the causation and motion we observe can be traced back to God**, who is an uncaused cause or unmoved mover.

YEAR 7 Does God exist?

Teleological/Design Argument for the Existence of God

William Paley

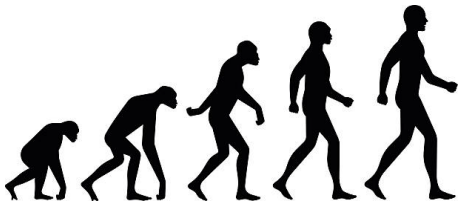
William Paley (1743-1805) **compared the design of the universe to finding a watch**. He argued that if you were walking and found a watch lying on the grass and saw how complicated it was you would have to assume someone made it. Even if you had never seen a watch before as each part works together to tell the time you would still assume that someone had designed it. Paley compared this to the design of the world. **Someone who looks at the universe must conclude that there is a designer because of how perfectly the universe fulfils its function of sustaining life.**

What is Humanism?

Humanism is the **rejection** of **Religious teaching** in favour of **reason**. Humanists may have a variety of different beliefs but they are united by the belief that it is possible to **live an ethical life without Religion**. They base ethical decisions on **Empathy & Reason**. They also believe that this is the only life that we have and therefore we should focus on being happy in this life rather than in an afterlife.

Richard Dawkins

Richard Dawkins argues that science explains and proves the big bang theory and that humans and life evolved on Earth. This contradicts religious stories about creation.



Mackie

J. L. Mackie argues that God cannot be both omnipotent and omnibenevolent while evil exists.

You will be assessed on your ability to:

- Understand and correctly use of key vocabulary.
- Explain key concepts/ideas.
- Use evidence (scripture / theory) to support your arguments

Links to curriculum (lenses):

Theology – we will continue to build on our understanding of Abrahamic traditions from the previous units.
Sociology – we will consider the importance of Islamic practices in developing a more holistic understanding o the religion.
Philosophy – we will explore the 'big questions' around the existence of God, using what we have learned about the different understandings of God from our previous units.

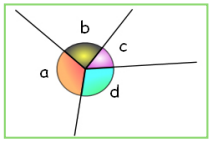
ANGLES

Key Words

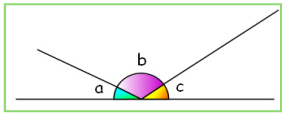
Angle: This is formed by two lines joined by a common endpoint
Quadrilateral: 4 sided shape
Intersect: Two lines which cross
Parallel: Two lines which never intersect. Marked by an arrow on each line
Transversal: A line which intersects two parallel lines

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

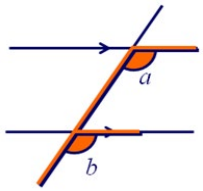
Key Concepts



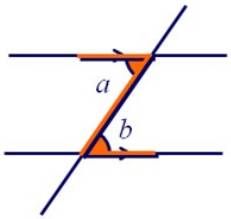
Angles at a point add to 360°



Angles on a line add to 180°

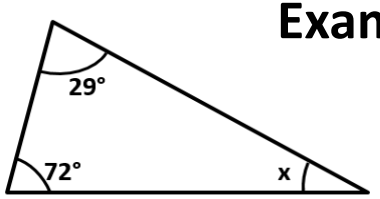


Corresponding angles are equal.

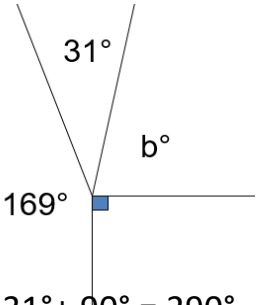


Alternate angles are equal.

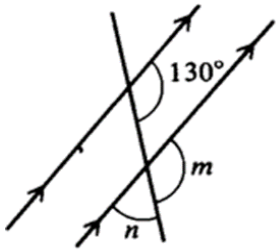
Examples



29° + 72° = 101°
180° – 101° = 79°



169° + 31°+ 90° = 290°
360° – 290° = 70°



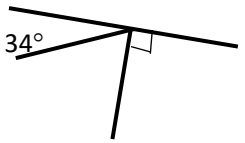
m = 130° as corresponding angles are equal.
n = 50° as angles on a line add to 180°

Extra - Read/watch/do

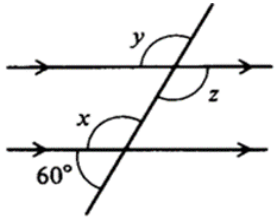
Links to curriculum

Questions

1) Find the missing angles:



2)



ANSWERS: 1) 56° 2) x = 120°, y = 120°, z = 120°

PERIMETER AND AREA

Key Words

Perimeter: The distance around the outside of the shape.

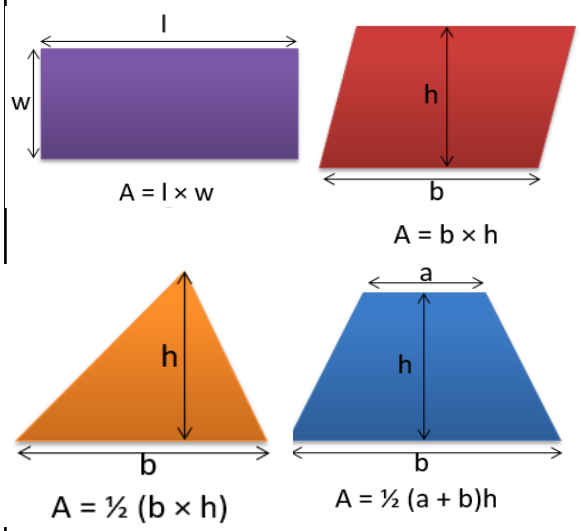
Area: The amount of square units that fit inside the shape.

Dimensions: The lengths which give the size of the shape.

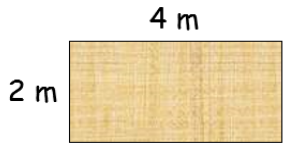
Shapes:
Rectangle, Triangle, Parallelogram, Trapezium, Kite.

Key Concepts

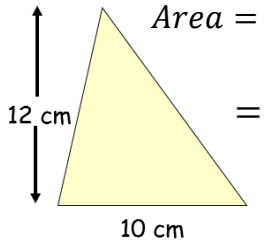
Area



Examples

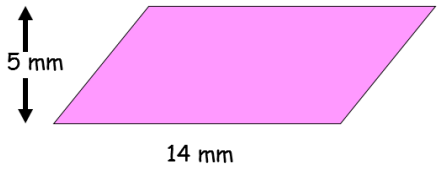


$Area = 2 \times 4 = 8m^2$



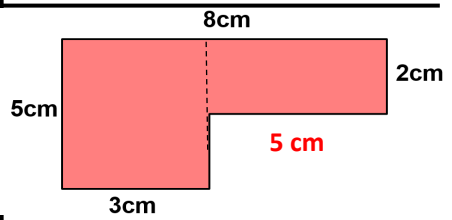
$Area = \frac{1}{2}(10 \times 12)$

$= 60cm^2$



$Area = 5 \times 14$

$= 70mm^2$



$Area = (5 \times 3) + (2 \times 5)$

$= 25cm^2$

Tip

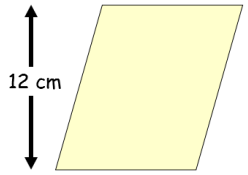
Always remember units. These units are squared for area.

mm^2, cm^2, m^2, etc

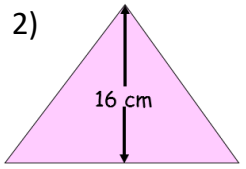
Extra - Read/watch/do

Links to curriculum

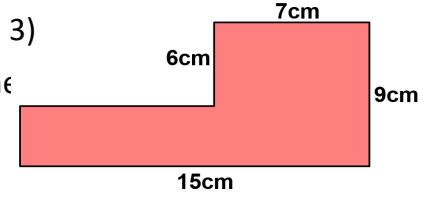
1)



2)



3) the



ANSWERS: 1) 96 cm^2 2) 112 cm^2 2) 87 cm^2

Averages

Key Concept

A measure of average is a value that is typical for a set of figures. Finding the average helps you to draw conclusions from data.

Key Words

Frequency: Total.
Mean: Total of data divided by the number of pieces of data.
Mode: The value that occurs most frequently.
Median: Middle number when they are in order.
Range: Difference between the largest and smallest values.

Examples

5, 9, 9, 9, 11, 12, 13, 15, 16

Averages

$$Mean = \frac{5+9+9+9+11+12+13+15+16}{9} = \frac{99}{9} = 11$$

Median = 11 (The middle number shown above)
Mode = 9 (This number occurs most often)

Measure of Spread

Range = 16 – 5 = 11
(A bigger range means the data is more spread out)

Tips

- There can be more than one mode.
- Range is a measure of spread, not an average.
- Bar charts have gaps between the bars.

Extra - Read/watch/do

Links to curriculum

Questions

1) Find the mean, mode, median and range of:
3, 12, 4, 6, 8, 5, 4 b) 12, 1, 10, 1, 9, 3, 4, 9, 7, 9

2) For the table:
Work out the mode
Work out the median.
Work out the mean of the data.

Age	Frequency
11	17
12	11
13	8

ANSWERS: 1) a) Mean = 6, Mode = 4, Median = 5, Range = 9 b) Mean = 6.5, Mode = 9, Median = 8, Range = 11 2) a) 11 b) 12 c) 11.75

FRACTIONS

Key Concepts

Mixed numbers

These are made up of a whole number and a fraction.

$$4\frac{3}{5} = \frac{4\times 5+3}{5} = \frac{23}{5}$$

Equivalent fractions

$$\frac{1}{4}=\frac{2}{8}=\frac{3}{12}=\frac{4}{16}$$

Key Words

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

Equivalence: Two fractions are equivalent if one is a multiple of the other.

Simplify: Cancel a fraction down to give the smallest numbers possible.

Examples

Simplify $\frac{3}{24}$

$\frac{3}{24}$ ÷ 3 → $\frac{1}{8}$

$\frac{1}{8}$ ← ÷ 3 $\frac{3}{24}$

+ $\frac{3}{5}+\frac{2}{7}$

Make the denominators the same

$\frac{3}{5}+\frac{2}{7}$ (×7, ×5)

$\frac{21}{35}+\frac{10}{35}=\frac{31}{35}$

− $\frac{3}{5}-\frac{2}{7}$

$\frac{3}{5}-\frac{2}{7}$ (×7, ×5)

$\frac{21}{35}-\frac{10}{35}=\frac{11}{35}$

Tip

- A larger denominator **does not** mean a larger fraction.
- To find equivalent fractions multiply/divide the numerator and denominator by the same number.

Extra - Read/watch/do

Links to curriculum

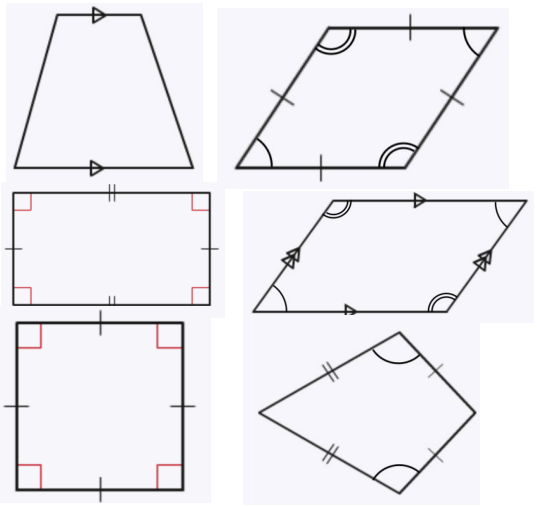
Questions

1)Simplify a) $\frac{42}{96}$ b) $\frac{64}{120}$ 2) $\frac{3}{5}+\frac{4}{15}$ 3) $\frac{2}{7}+\frac{5}{8}$ 4) $\frac{7}{9}-\frac{2}{5}$

ANSWERS: 1) a) $\frac{7}{16}$ b) $\frac{8}{15}$ 2) $\frac{13}{15}$ 3) $\frac{51}{56}$ 4) $\frac{17}{45}$

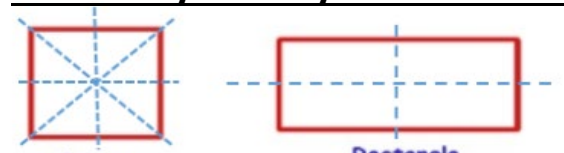
Geometry

Key Concept
Quadrilaterals



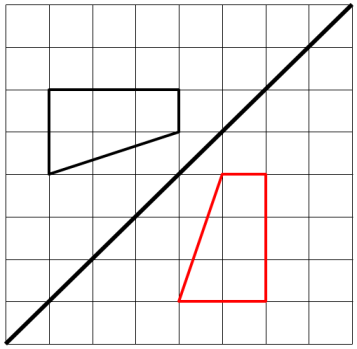
Key Words
Angle: This is formed by two lines, joined by a common endpoint.
Symmetry: A shape has symmetry if there is a line which forms two equal parts which are a mirror image of each other.
Reflection: This is where a shape is flipped.
Rotation: This is where a shape is turned.
Co-ordinates: points that can be plotted. Remember that x comes before y (x, y)

Examples
Lines of symmetry and reflection

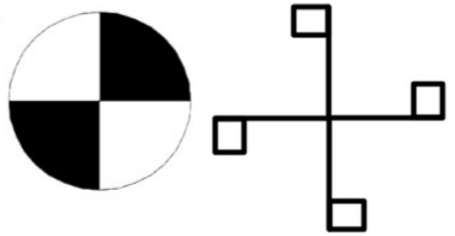


4 lines of symmetry

2 lines of symmetry



Rotational Symmetry



Order = 2

Order = 4

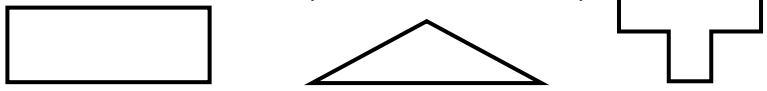
Tip
- The smallest the order of rotational symmetry can be, is 1.
- To see if a line of symmetry works fold along the line and see if the both halves lie exactly on top of each other.

Extra - Read/watch/do

Links to curriculum

Questions - For the shapes below draw on their lines of symmetry and state their order of rotational symmetry.

1) 2) 3)



ANSWERS: 1) 2 lines of symmetry, order = 2 2) 1 line of symmetry, order = 1 3) 4 lines of symmetry, order = 4.

ALGEBRAIC EXPRESSIONS

Key Words

Operation: In maths these are the functions × ÷ + -.
A **formula** involves two or more letters, where one letter equals an **expression** of other letters.
An **expression** is a sentence in algebra that does NOT have an equals sign.
When **substituting** a number into an expression, replace the letter with the given value.

Tip

Use different colours when collecting like terms

Links to curriculum

Key Concepts

Algebra Meanings

a means 1a or 1 x a
3a = 3 x a
a^2 = a x a
m/n = m ÷ n
n/m = n ÷ m
ab = a x b
a + b = b + a
a x b = b x a
a – b and b – a don't mean the same thing
a ÷ b and b ÷ a don't mean the same thing

Extra - Read/watch/do

Examples

1. Simplify the following expressions:

a) 4p + 6t + p – 2t = 5p + 4t

b) 3 + 2t + p – t + 2 = 5 + t + p

c) f + 3g – 4f = 3g – 3g

d) $f^2 + 4f^2 - 2f^2 = 3f^2$

2) Find the value of $3x + 2$ when $x = 5$

$(3 \times 5) + 2 = 17$

3) $5 \times 4 - 8 \div 2$

$20 - 4 = \mathbf{16}$

Questions

1) **Simplify:**

a) 7p + 3q + p – 3q
b) 5 + 4t + 3p – 2t + 7
c) m – 8g – 5m
d) $b^2 – 7b^2 + 2b^2$

2) Find the value of 5m – 6 when m = 7

ANSWERS: 1)a) 8p b) 12 + 2t + 3p c) -4m – 8gd) $-4b^2$ 4) 29

TOPCAT

Tenses

A

AVOIR		
J'	ai	I have
Tu	as	You have
il/elle	a	He/she has
nous	avons	We have
vous	avez	You all have
Ils/elles	ont	They have

B

être		
Je	suis	I am
Tu	es	You are
il/elle	est	He/she is
nous	sommes	We are
vous	êtes	You all are
Ils/elles	sont	They are

C Opinions & Pronouns

♥♥ J'adore
♥ J'aime
✖ Je n'aime pas
✖✖ Je déteste
↗ Je préfère
Je pense que

☺
Ça m'intéresse
Ça m'amuse
☹
Ça m'énerve
Ça m'ennuie

D Connectives

aussi	also
mais	but
Cependant	however
que / qui	which
où	where
Parce que /car	because

E Complexity

Je n'ai pas de.. - I do not have
J'ai besoin de – I need

Je veux avoir _ I want to have
Je voudrais avoir – I would love to have

F Adjectives

English	Fr
Exciting	Passionnant (e)
Great	Génial (e)
Boring	Ennuyeux / se
Annoying	Barbant (e)
Creative	Créatif /ve
Grumpy	Grincheux /se
Relaxing	Relaxant (e)
Active	Actif /ve
Interesting	Intéressant (e)
Fun	Amusant (e)
Shy	Timide
Noisy	Bruyant (e)
Chatty	Bavard (e)

G

J'ai un frère barbant
J'ai une sœur barbante
J'ai deux chiens barbants
J'ai deux tortues barbantes

Take AVOW

Extra: read/ watch/do:
Linguascope.com Beginners French 'Moi et ma famille'
KS3 Bitesize French. Describing people .

You will be assessed on:
-: Translations 2 ways (self , family, school bag-retrieval)
-Reading assessment. Retrieval (Autumn + Spring 1 content)

Links to curriculum
Cultural capital: Mardi Gras
Linguistic progression example: using verbs 'avoir' and 'etre
Adding reasons to opinions.'

TOPCAT

H

Les animaux de compagnie

I

masculine	feminine
jaune	jaune
rouge	rouge
rose	rose
bleu	bleue
vert	verte
noir	noire
gris	grise
blanc	blanche
violet	violette
marron	marron
orange	orange

J

LES CHEVEUX

Courts | mi-longs | longs

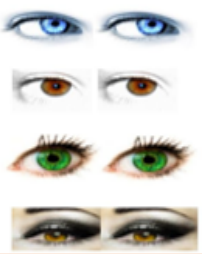
bruns | roux | blonds

Châtains | noirs | gris

Raides | ondulés | bouclés | frisés

crépus | en chignon | en tresse | en queue de cheval

K



J'ai les yeux bleus

J'ai les yeux bruns

J'ai les yeux verts

J'ai les yeux noisette

L

Une barbe – a beard
Une moustache
Des lunettes - glasses

M

. PORTER = to wear

- er verbs (ex: porter)

The middle part is called the **stem** of the verb. It's the part that stays the same – when the endings change

Remove the –er, add the endings:

Je port **e**
Tu port **es**
Il/ elle port **e**
Nous port **ons**
Vous port **ez**
Ils/ Elles port **ent**

These are known as **pronouns.** They tell us **who** is doing the activity

The parts in bold are the **endings** and they must always agree with the pronouns, just like in English (we wouldn't say '*I does*' and we wouldn't say '*He do*'

TOPCAT

A

Introducing (2) regular verb conjugation.
Étudier = to study

I	j'étudie
You	tu étudies
He/she	il/elle/on étudie
We	nous étudions
You all	vous étudiez
They	ils/elles étudient

B

Paul étudie

Paul et moi étudions

Paul et Sarah étudient

C

Opinions & Pronouns

♥♥ J'adore	☺
♥ J'aime	Ça m'intéresse
✖ Je n'aime pas	Ça m'amuse
✖✖ Je déteste	☹
↗ Je préfère	Ça m'énerve
Je pense que	Ça m'ennuie
je trouve que	Ça me stresse

D

Connectives

Aussi /en plus	also /furthermote
Mais/ Cependant	but / however
que / qui	which
où	where
Parce que /car	because
Donc	so

E

Complexity

Je n'étudie pas .. - I do not study
Je dois étudier – I must study
Je veux étudier _ I want to study
Je voudrais étudier – I would like to study

F

Adjectives

English	Fr
Exciting	Passionnant (e)
Great	Génial (e)
Creative	Créatif /ve
Easy	Facile
Relaxing	Relaxant (e)
Active	Actif /ve
Interesting	Intéressant (e)
Fun	Amusant (e)
Nice	sympa
funny	Marrant(e)
Boring	Ennuyeux / se
Annoying	Barbant (e)
Difficult	difficile
Strict	Sévère

G

Time AVOW

Le français est intéressant
La musique est intéressante
Les profs sont intéressants
les sciences sont intéressantes

Extra: read/ watch/do
Linguascope.com Beginners French 'La Vie Au Quotidien'
KS3 Bitesize French. Adjectives in French

You will be assessed on
- Translations 2 ways AVOW focus subjects and opinions.
- Speaking. Conversations about school subjects
-Reading assessment: identifying TOPCAT.

Links to curriculum
Cultural capital: Mardi Gras.
Linguistic progression example:'er' present tense conjugations.
Adjectival agreement

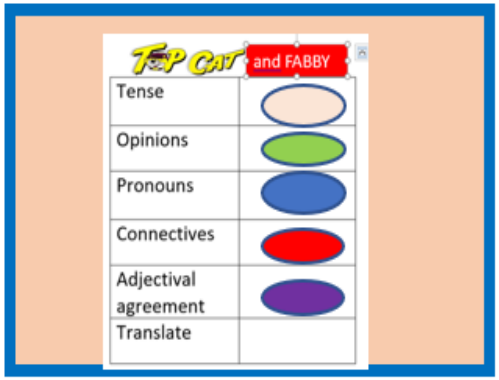
TOPCAT

H

LES MATIÈRES = SCHOOL SUBJECTS

J'etudie.....	I study...		
le dessin	Art	les maths	Maths
le théâtre	Drama	les sciences	Science
l'espagnol	Spanish	(la biologie	Biology
le français	French	la chemie	Chemistry
l'anglais	English	la physique)	Physics
l'EPS (l'éducation physique et sportive)	P.E.		
la geographie	Geography	l'histoire-géo	Hist-geo
l'histoire	History	l'éducation religieuse	R.E.
l'informatique	I.T.	la tecnologie	Technology
la musique	Music		

K



Introducing TOPCAT

J'étudie le français parce que je pense que le prof est amusant et sympa.
Mais je n'aime pas le dessin parce que c'est difficile et aussi ça m'énerve.
J'aime beaucoup la musique parce que je trouve que c'est super et le prof est sympa et m'amuse.

I study French because I think that the teacher is fun and nice
But, I do not like art because it is difficult and also it annoys me
I really like music because I find that it is great and the teacher is nice and amuses me.

I

Introducing (3) regular –er verb conjugation pattern

je	e	nous	ons
tu	es	vous	ez
il / elle	e	ils/elles	ent

J

Science - 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

Extra - Read/watch/do

Energy - KS3 Physics - BBC Bitesize

https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/a722f701-fd8b-4a85-9e86-ff2266763b17/session

You will be assessed on: You will have an end of topic test combined with topics 7I&K –Energy and Forces.

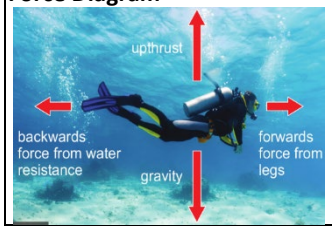
Links to curriculum

This is you first Physics based topic of the year once complete you will move onto 7K which covers the topic of forces.

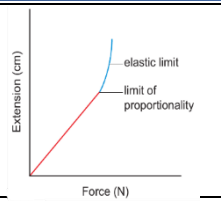
Science - 7K Forces

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



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	$\text{pressure} = \frac{\text{force}}{\text{area}}$

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

Extra - Read/watch/do

Energy - KS3 Physics - BBC Bitesize

https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/a722f701-fd8b-4a85-9e86-ff2266763b17/session

You will be assessed on: You will have an end of topic test combined with topics 7I&K –Energy and Forces.

Links to curriculum

This is you first Physics based topic of the year once complete you will move onto 7K which covers the topic of forces.

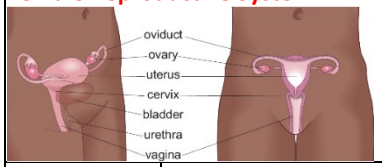
7B Sexual Reproduction in Animals

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

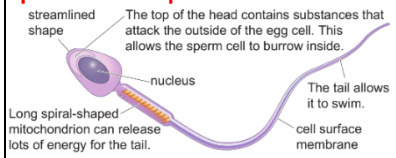
Ovary	Where the egg cells develop and are released from.
Oviduct	Tube lined with cilia (tiny hairs).
Uterus	Where the baby will develop if the egg is fertilised.
Cervix	Ring of muscle between uterus and vagina.
Vagina	Part that leads from the cervix to the outside.

Female Reproductive System

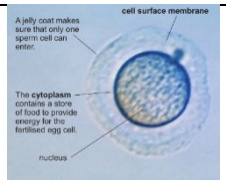


Puberty	When males start to produce sperm cells and egg cells in female start to mature.

Sperm Cell Adaptations



Egg Cell Adaptations



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.

You will be assessed on: You will have an end of topic test combined with topic 7D – Sexual reproduction in animals and ecosystems.

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.

Extra - Read/watch/do

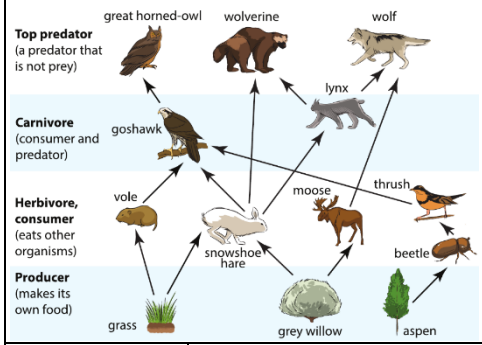
https://www.bbc.co.uk/bitesize/topics/zybbkqt

https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/cc9ec29c-c0dd-4bb4-a6d0-fa1fe2992730/session

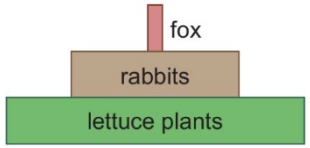
7D Ecosystems

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.

Extra - Read/watch/do:

https://www.bbc.co.uk/bitesize/topics/zxhhvcw

https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/cc9ec29c-c0dd-4bb4-a6d0-fa1fe2992730/session

You will be assessed on: You will have an end of topic test combined with topics 7B&D – Sexual reproduction in animals and ecosystems.

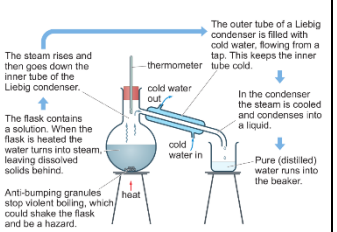
7E Mixtures and Separation

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.

Extra - Read/watch/do:

https://www.bbc.co.uk/bitesize/topics/z242m39/articles/zghptrd

https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/71d6e8c5-60e1-4866-926f-571558c20c3d/session

You will be assessed on: You will have an end of topic test combined with topics 7E&F – Mixtures, separation, acids and alkalis.

Links to curriculum

This is you second set of chemistry-based topics of the year once complete you will complete your end of topic assessment.

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.

Extra - Read/watch/do:

https://www.bbc.co.uk/bitesize/topics/z242m39/articles/zcnhxbk

https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/a5b11b2e-bb43-41a5-b89c-64dce38a4604/session

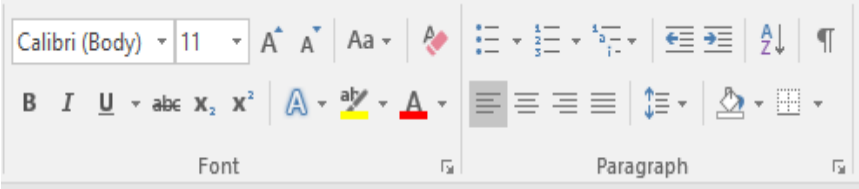
You will be assessed on: You will have an end of topic test combined with topics 7E&F – Mixtures, separation, acids and alkalis.

Links to curriculum

This is you second set of chemistry-based topics of the year once complete you will complete your end of topic assessment.

Literacy / key words

- **Format**: The way something is arranged or organised.
- **Source:** Where information comes from, such as a book, website, article, or person.
- **Citation:** A reference to the source of information.
- **Referencing:** The process of listing sources that were used in creating a piece of work.
- **Licensing:** The act of giving formal permission to use something, like a piece of work, a brand, or software, under specific terms and conditions.
- **Copyright:** A legal right that protects original works from being used without the creator's permission.
- **Blog:** A website or section of a website where people regularly post written content, ideas, or updates, often on specific topics.
- **Plagiarism:** Using someone else's work, ideas, or words without giving them credit.
- **Audience:** The group of people who are intended to read, watch, or engage with a piece of content.



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.

A **blog** is 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.

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.

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.

C**itation** 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.

Extra -

Conduct Research: to find an example of Fake News.
Produce a Guide: to inform others on how to identify Fake News.

You will be assessed on

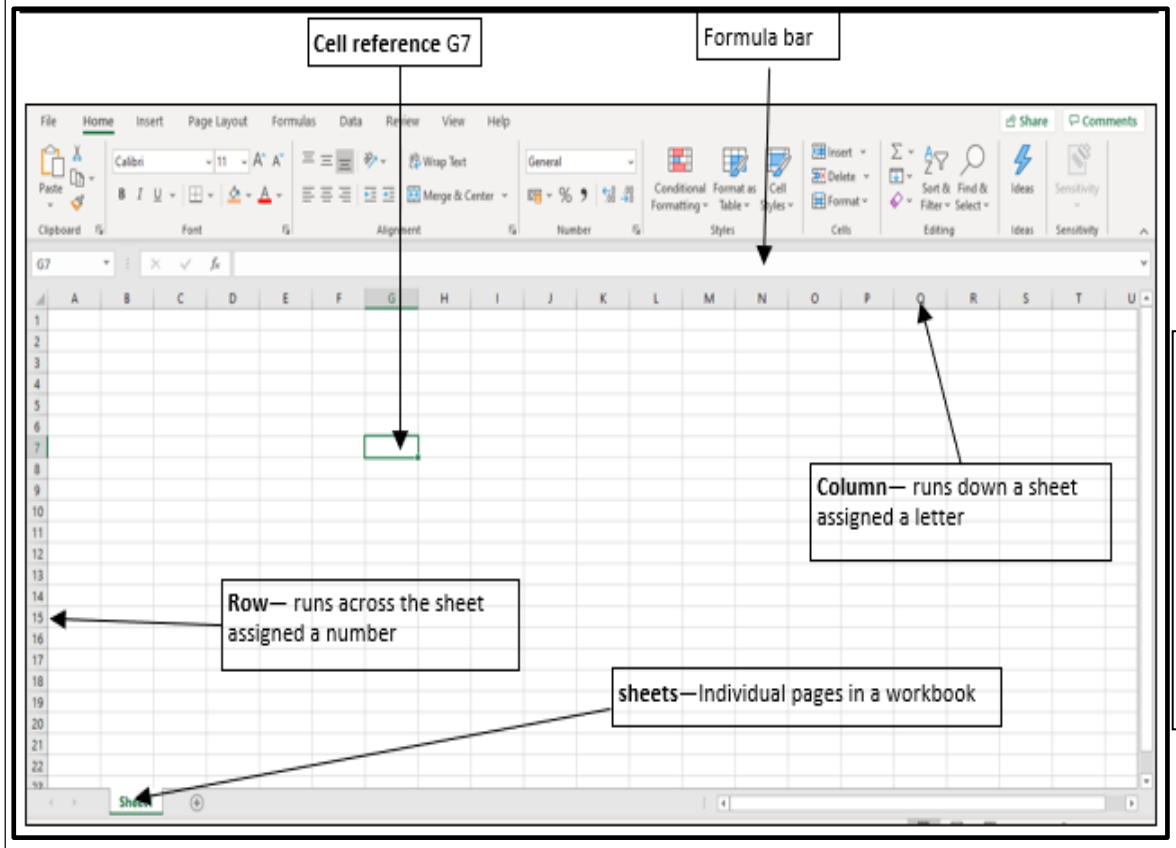
The Features of Word Processing Software and Copyright Law and how to avoid Infringement of it.
How Blogs can be used to Raise Awareness of a Good Cause.

Links to curriculum

Understanding Digital Content: pupils learn how digital information is created, stored and shared.
Ethical and Legal Issues: pupils explore ethical and legal issues relating to computer use.

Literacy / key words

Data: raw, unprocessed facts or values entered into a spreadsheet, such as numbers, text, dates.
Information: processed or organised data that has been given context and therefore is meaningful, such as 'Number of Items Sold'.
Cell: the basic unit in a spreadsheet where data is entered.
Cell Reference: a unique identifier for a cell, determined by its column letter and row number (e.g., A1, B5). It is used to locate a specific cell in a formula or function.
Column: a vertical arrangement of cells in a spreadsheet, labeled alphabetically (e.g., A, B, C).
Row: a horizontal arrangement of cells in a spreadsheet, labeled numerically (e.g., 1, 2, 3). Rows are often used to represent individual records or entries.
Formula: an expression entered in a cell that performs calculations or operations on data. Formulas begin with an equals sign e.g., =A1+B1.
Function: Functions take inputs and return a value e.g., SUM, AVERAGE, IF). For example, =SUM(A1:A5) adds the values in cells A1 through A5.



Data can be gathered from different sources:

- **Primary** source: collecting data yourself
- **Secondary** source: someone else collects the data

You can fill data automatically by using **AutoFill.**

In order to complete calculations spreadsheets make use of **formulae**.
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

Extra - Read/watch/do

Pick a Business and Create a Spreadsheet that it might use.
For example, a 'Sweet Shop' spreadsheet might include a list of all of the sweets sold and their cost.

You will be assessed on

The 'Features of Spreadsheet Software' and how they are used, using formulas, functions and formatting data to be best appropriate.

Links to curriculum

~~Digital Literacy~~: pupils learn how to use digital tools and their features effectively.
Data Representation: pupils explore how data is organised and presented.

Design Technology – Polymers, Timbers & Design Skills

Literacy / key words
Polymer
Polymer is another name for plastic.
Thermosetting polymers
Can only be formed once. They are hard to recycle. They are good insulators and are resistant to heat and chemicals.
Thermoforming polymers
Can be heated and formed repeatedly. They are recyclable.
Crude oil
A primary source of plastics .
Bio degradable
able to decay naturally and in a way that is not harmful.
Micro plastics
small plastic pieces which can be harmful to our oceans
Vacuum forming
The simplest type of plastic forming, that uses a mold and vacuum pressure.

Thermoforming polymer	Physical properties	Working properties
Acrylic (PMMA)	Hard, brittle, shiny, available in a wide range of colours	Resists weather well, can be cut, folded and polished well, scratches easily, used for car lights, visors and baths
High impact polystyrene (HIPS)	Rigid, cheap, available in a lot of colours	Can be cut and vacuum formed easily, food safe but toxic when burned, used for CD cases and yoghurt pots
High density polythene (HDPE)	Stiff, strong, lightweight	Lightweight and flexible, can be recycled well, used for washing baskets, pipes and chairs

Thermosetting polymer	Physical properties	Working properties
Melamine formaldehyde	Hard, brittle	Food safe, printable surface, used for picnic wear
Polyester resin	A resin and a hardener, sets clear and smooth	Strong, heat resistant and good insulator, used as waterproofing and for encapsulating items
Urea formaldehyde	Smooth finish, limited colours	Heat resistant, hard, brittle and easily injection moulded, used for electrical fittings

ACCESSFM

- **Aesthetics** –

How visually appealing is the design?

- **Cost**

Is the product affordable to make or buy?

- **Customer**

Who is the target audience for this?

- **Environment**

How eco-friendly or sustainable is it?

- **Safety**

Is it safe for users to operate?

- **Size**

Are the dimensions suitable for its purpose?

- **Function**

Does it perform its intended function effectively?

- **Materials**

Are the materials appropriate?

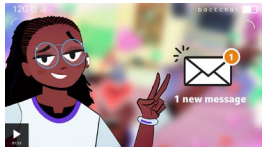
CAD and CAM
Computer Aided Design (CAD) drawing allows products s to be manufactured using Computer Aided Manufacture (CAM) Computer aided manufacture is very fast and accurate and requires less human intervention.

CAD
Techsoft 2d design

CAM
Laser cutter

Extra - Read/watch/do

Watch:
the problems with plastics video



https://www.bbc.co.uk/bitesize/articles/z4d62v4

You will be assessed on

- Your knowledge of polymers
- Your ability to analyse exiting products
- Your completed product (ball bearing maze)

Links to curriculum

Make
select from and use a wide and complex range of materials and components, taking into account their properties

Literacy / Key words

Coniferous

Soft woods come from coniferous trees. They keep their leaves all year and are quick growing.

Deciduous

Hardwoods come from deciduous trees. These are slow growing and loose their leaves in the winter.

Manufactured board

Manufactured board is a natural timber that is combined with adhesive to make a composite material. Examples include MDF, chipboard and hardboard

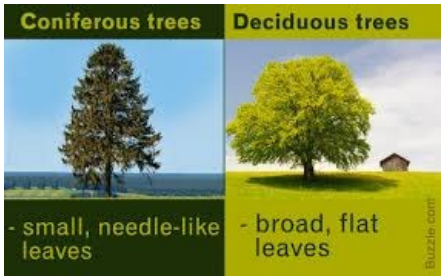
Life cycle assessment

(LCA) can be used to analyse all the stages in a product's life and highlight the impact it will have on the environment.

Softwood	Physical s and Working properties
Larch	Pale coloured with a contrasting darker grain, knotty. Durable, easy to machine, high sap content gives it good water resistance, used for exterior building and flooring
Pine	Pale coloured with aesthetically pleasing grain. Lightweight, easy to form, used for construction and decking
Spruce	Pale cream with an even grain. Easy to form, takes stain colour well, used for construction and furniture

Hardwood	Physical properties and Working properties
Ash	Pale coloured, narrow grain Flexible and good for steam bending, tough, used for sports equipment
Teak	Teak is a durable, oily wood with a tight grain. It is moisture resistant, making it a good choice for outdoor use, eg outdoor furniture. It is also used in boat decks, chopping boards and flooring.
Oak	Moderate-brown colour with unique and attractive grain markings Tough and durable, polishes well, used for quality furniture

Manufactured board	Physical and Working properties
Medium-density fibreboard (MDF)	Smooth, light brown, can be veneere. Smooth and easy to finish, absorbs moisture so not suitable for outdoor use, used for kitchens and flat pack furniture
Plywood	Odd number of layers of veneer glued at 90 degree angles for strength, aesthetically pleasing outer layer Easy to cut and finish, can be stained or painted, used for shelving, construction and toys
Chipboard	Compacted wood chips, laminated with a variety of coverings, end cuts are difficult to finish Strong but absorbent to water, used for veneered worktops and flooring



Extra - Read/watch/do

Watch:

FSC

https://www.youtube.com/watch?v=HBScUXDlF90&t=2

You will be assessed on

- Your knowledge of timbers.
- Your ability to evaluate a final product
- Your completed product (desk tidy)

Links to curriculum

Make

Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.

Literacy / key words

Rendering

Rendering with colour pencils involves layering and blending colours to create detailed, textured, and realistic illustrations or designs.

Oblique drawing

Oblique drawing is a way to make a 3D picture where the front looks normal, and the sides are drawn at an angle to show depth.

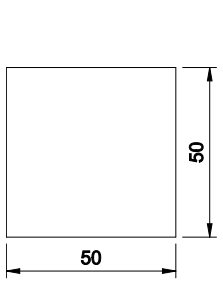
Isometric drawing

Isometric drawing is a way to make 3D pictures where all sides are drawn at equal angles, showing depth clearly.

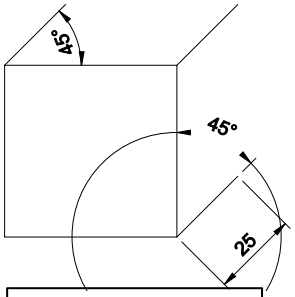
1 point perspective

1-point perspective drawing is a technique where all lines meet at a single vanishing point on the horizon, creating depth.

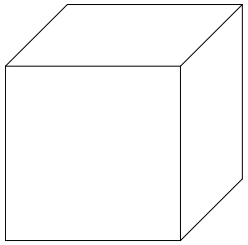
Oblique drawing



Draw a square 50 mm x 50mm.



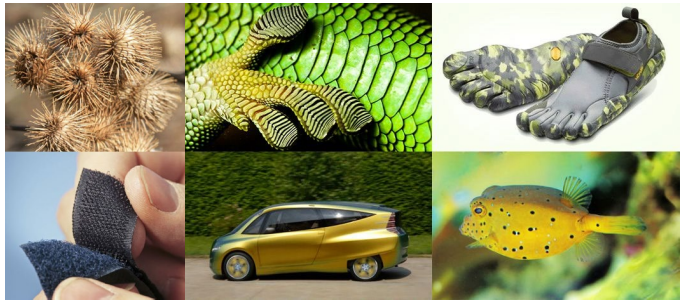
Draw 3 lines that are 25mm long at an angle of 45°.



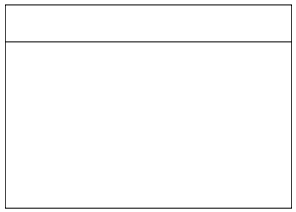
Draw the lines for the back of the cube.

Biomimicry

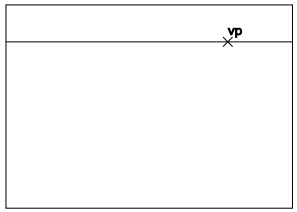
Biomimicry is when designers copy ideas from nature to solve problems. For example, **Velcro** was inspired by burrs sticking to animal fur, and **bullet trains** were shaped like a kingfisher's beak to reduce noise and drag. Nature's designs often lead to efficient, sustainable solutions.



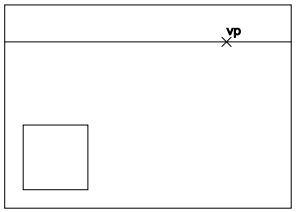
One point perspective



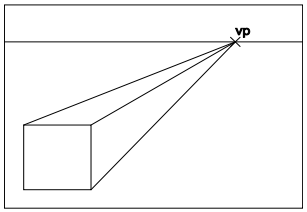
Draw a line across the top of the page.



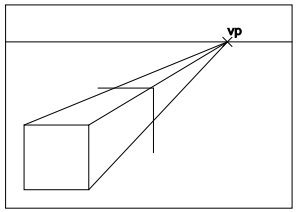
Put an x where the vanishing point is



Draw a square in one of the bottom corners of the page.



Draw construction lines from each to the vp.

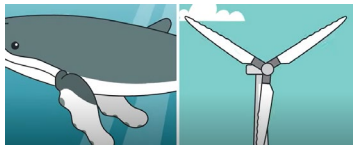


Add the lines for the back of the cube.

Extra - Read/watch/do

Watch:

Biomimicry



https://www.youtube.com/watch?v=V2GvQXvjhLA

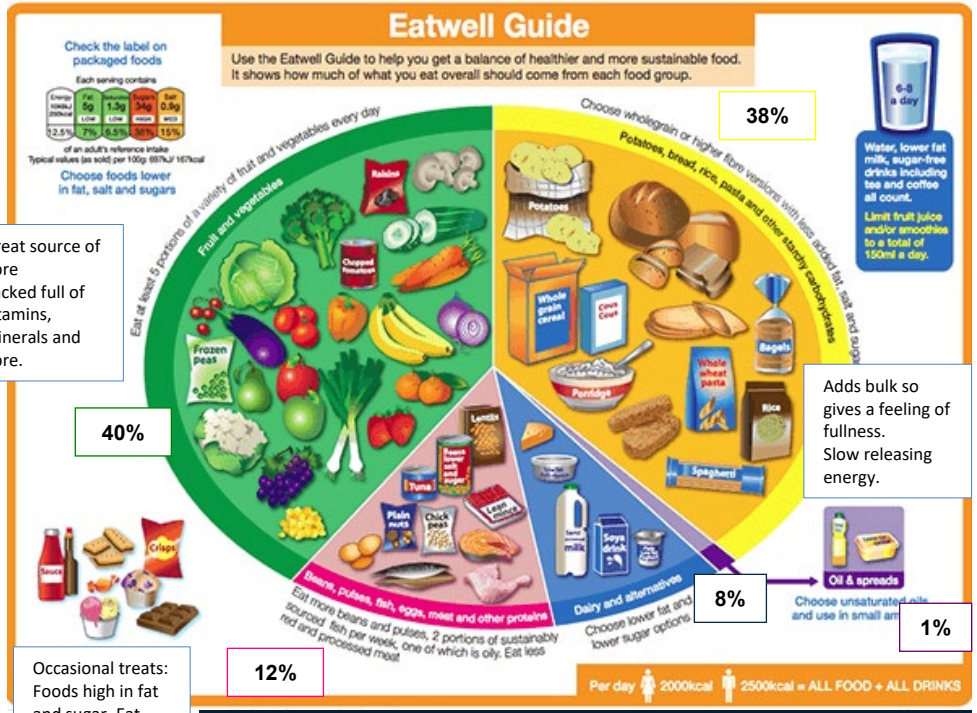
You will be assessed on

- Your ability to use a range of design/drawing techniques.
- Your ability to write a detailed specification.

Links to curriculum

Design

use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses



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

40%

Adds bulk so gives a feeling of fullness.
Slow releasing energy.

Occasional treats: Foods high in fat and sugar. Eat less often.

8 tips for eating well

1. Base your meals on starchy foods.
2. Eat lots of fruit and vegetables.
3. Eat more fish – including a portion of oily fish each week.
4. Cut down on saturated fat and sugar.
5. Eat less salt – no more than 6g a day for adults..
6. Get active and be a healthy weight.
7. Don't get thirsty.
8. Don't skip breakfast.

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.

Extra - Read/watch/do

https://www.youtube.com/watch?v=7MlE4G8ntss

You will be assessed on:

- Food Hygiene and Food Spoilage
- Fruit/Sensory evaluation
- Healthy eating tasks and the 8 tips for eating well.
- Vitamins

Links to curriculum: Apply current healthy eating advice, and understanding of people's needs, to develop diets for different individuals.

Literacy / keywords

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

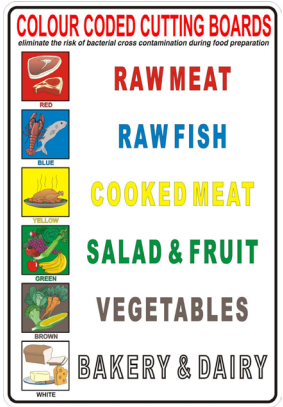
High Risk foods: are foods high in protein and moisture e.g. meat, dairy, cooked rice, gravy. Must be stored at a temperature below 5◦C to prevent bacteria growth.

Types of Hygiene Hazards

Physical: fly, hair, broken glass, fingernails, plaster.

Biological: bacteria such as E. coli, Salmonella, Staphylococcus aureus. Bacillus cereus, Campylobacter.

Chemical: pesticides, herbicides, cleaning chemicals



Preventing cross contamination

Preparing food safely using the 4 Cs

Cleaning
- Keep yourself and hands clean
- Use clean equipment

Cooking
- Cook raw foods until the core is 75C, check with a temperature probe.

Chilling
- Cool cooked foods for no longer than 90mins before refrigerating

Cross Contamination
- Store raw foods away from cooked foods
- Use separate equipment (chopping boards and utensils

Links to curriculum: Demonstrate and apply the principles of cleaning, preventing cross contamination, safe storage of food including chilling, cooking food thoroughly; reheating food until it is steaming hot.

Enzymic Browning: The process where fruit and vegetable turn brown due to them being exposed to oxygen (oxidisation).

Knife Skills

Claw grip

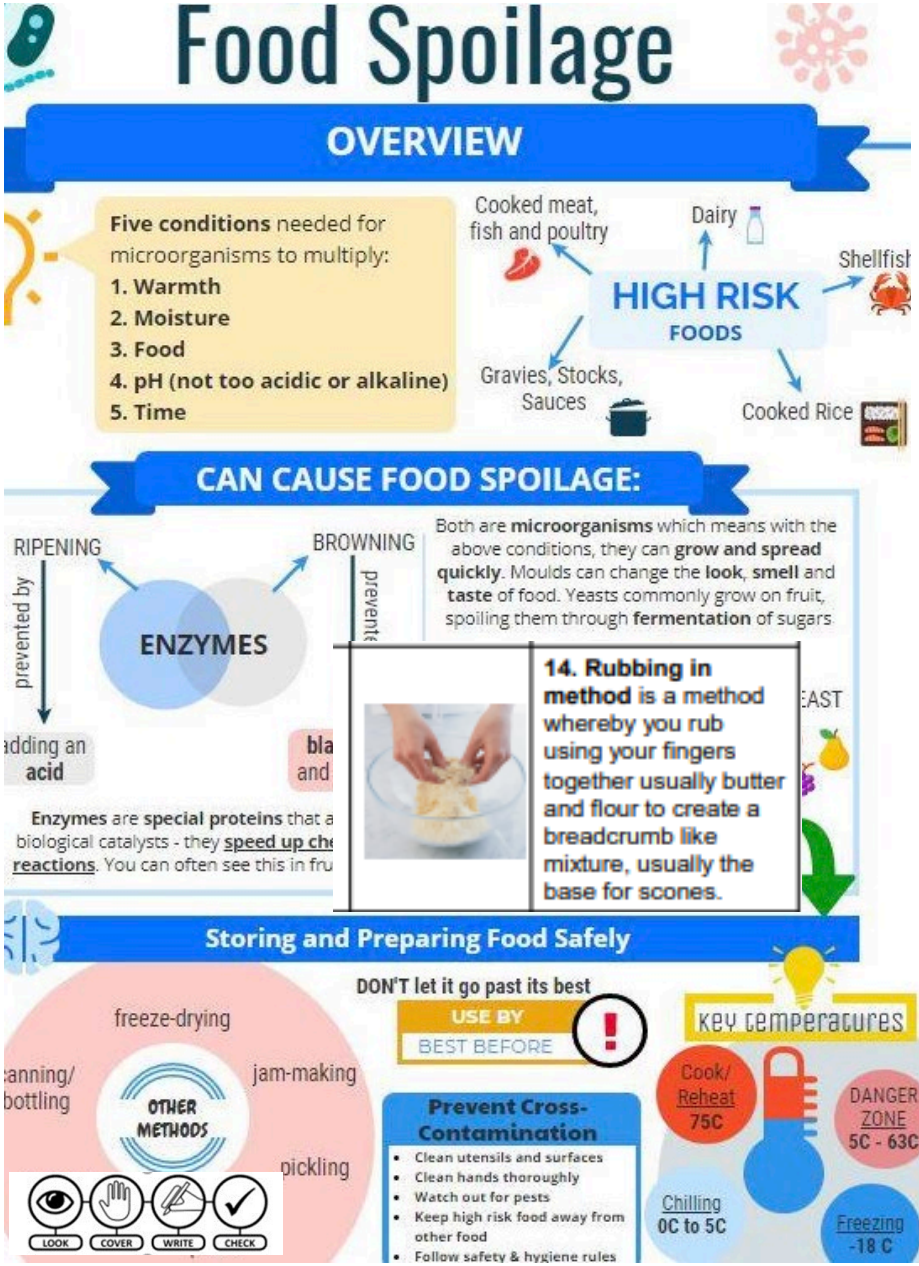
Bridge hold

Rondelle

Julienne
3mm*3mm*3~5cm

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

Chemical raising agents produce CO2.
Alkali+ Acid+ liquid+ CO2
Makes baked products like scone rise, light and soft.

Rubbing in method: Is a method of rubbing your fingers together usually butter and flower to create a breadcrumb like mixture, used to make scones.

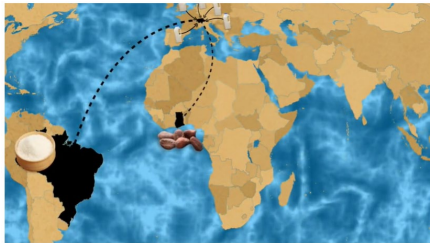
Literacy / Key terms

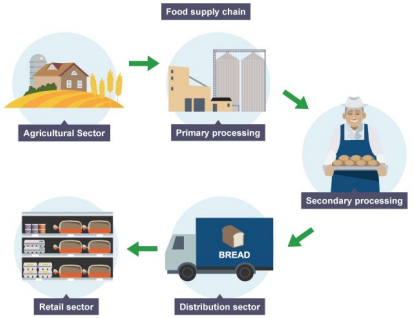
Food Miles:

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.

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.





Chocolate –ingredients coming from all over the world has a lot of food miles.

Vitamin facts

Vitamin	Foods	Functions	Deficiency
Vitamin A	Cheese, milk, yoghurt eggs, oily fish, yellow, red and green (leafy) vegetables, such as spinach, carrots, sweet potatoes and red peppers, yellow fruit, such as mango, papaya and apricots	Fighting infection, better vision, keeping skin healthy	Night blindness
Vitamin D	Our body creates this from direct sunlight but it is in: oily fish, red meat and egg yolks, liver	Helps keep bones, teeth and muscles healthy	Bone deformities such as Rickets in children, and Osteomalacia in adults.
Vitamin E	Vegetable oil, olive oil, nuts, seeds, cereals	Healthy skin, eyes and immune system	Rare
Vitamin K	Green vegetables, vegetable oil, cereals	Healing wounds	Rare. Problems with blood clotting

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

Strawberries grown in Manchester

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

Extra - Read/watch/do

https://www.bbc.co.uk/bitesize/articles/zjnxwnb#zktxywx

Links to curriculum: Examine where and how a variety of ingredients are grown, reared, caught, and processed, and consider sustainability and the impact of different choices on the environment. Define and demonstrate how to apply the principles of nutrition; that food and drinks provide energy and nutrients in different amounts; that they have important functions in the body; and that people require different amounts during their life and the implications of dietary excess or deficiency.