



***SUMMER
KNOWLEDGE
ORGANISER***

YEAR 7

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Literacy / key words

Relief – A type of sculpture where three-dimensional elements are attached to a flat surface

Abstraction- Art that doesn't look exactly like real life; instead, it changes or simplifies shapes, colours, or features.

Distortion- Changing or twisting the shape of something, like making a face look stretched, squashed, or unusual.

Line Work- The use of lines in art, like how Jover uses bold or delicate ink lines to create details and expressions.

Expression- Showing emotions or feelings in art, often through exaggerated features, colours, or shapes.

Loui Jover's use of shape

Loui Jover uses shapes in his collages to create bold and expressive art. He often combines simple, flowing shapes with sharp, jagged lines to add drama and movement. Jover uses the natural shapes of torn paper and layers them to build his portraits, creating interesting textures and uneven edges. These shapes give his work a raw, emotional feel, making his collages look unique and full of energy. Loui Jover also uses shapes to highlight important parts of his portraits like the eyes or mouth

YEAR 7 Distorted portraits

Colour in Pablo Picasso's work

Picasso used colours to show feelings. For example, in his "Blue Period," he used mostly blue shades to create sad and lonely moods. In his "Rose Period," he used warmer colours like pink and orange to create happier, softer feelings.

Different types of distorted portrait

Cut and Rearrange- Draw or print a portrait, cut it into pieces, and rearrange them in a mixed-up or jumbled way.

Stretch and Squash- Change the proportions by making some parts longer, wider, or smaller than usual (e.g., a long nose or tiny eyes).

Fragmentation- Divide the portrait into geometric shapes or sections, then draw each piece in a different style or angle.

Mirror Effects- Split the face in half and flip one side like a mirror, or make one side look completely

Pablo Picasso

Pablo Ruiz Picasso was a Spanish painter, sculptor, printmaker, ceramicist, and theatre designer. He is known for co-founding the Cubist movement, and for the wide variety of styles that he helped develop and explore.

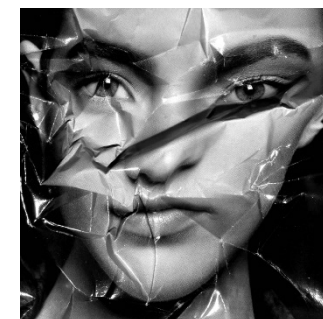


Loui Jover

Loui Jover is an Australian painter and artist. He is known for his artwork in ink wash paintings on vintage book pages. In his works, he uses a wide range of different materials and techniques to establish new means of expression.



Distortion examples



Extra - Read/watch/do

- **Understanding Picasso**- <https://www.bbc.co.uk/bitesize/topics/zqhy4wx/watch/zhr4q6f>
- **Understanding Loui Jover**- <https://obsessedwithart.com/book-page-art-loui-jover/>
- **Improving drawing skill**- <https://bingedrawing.com/portrait/get-better-at-drawing-faces/>

Colour and mood

Colours can make us feel different moods and emotions in art. Here's how different colours might affect us:

Red- Red is a strong colour that can feel exciting, powerful, or even angry. It's great for showing energy, love, or danger.

Blue- Blue often feels calm, peaceful, or sad. It's like the colour of the sky or the ocean, making us think of quiet and relaxing places.

Yellow- Yellow is a happy and bright colour. It can remind us of sunshine, making us feel cheerful and full of energy.

Green- Green feels fresh and natural, like plants and grass. It can make us feel calm, safe, or even full of hope.

Purple- Purple is a creative and mysterious colour. It's often linked to royalty or magic, making us think of special or unusual things.

Orange- Orange is warm and fun, often reminding us of autumn leaves or sunsets. It's a colour that feels friendly and full of life.

Black- Black can feel serious, strong, or mysterious. It's often used to show sadness or power in art.

You will be assessed on

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

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



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.

Wax resist

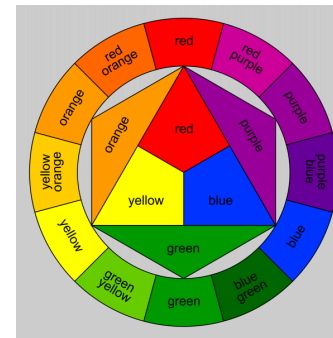
Wax resist is a fun art technique where you use wax, like crayons or a candle, to draw on paper and then paint over it. The wax stops the paint from sticking, so your drawing shows through, creating cool patterns or designs. It's like magic!



What techniques will I learn?

Colour theory

Colour theory is the study of how colours work together in art. It helps us understand things like the colour wheel. It also explains how colours can look good together, like warm colours making us feel happy, or cool colours making us feel calm.



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.

Relief sculpture

Relief sculpture is a type of artwork where shapes and designs are carved or built onto a flat surface, so they stick out but are still part of the background. It's like a mix of drawing and sculpture—parts of it pop out, but it's not fully 3D. You might see this on coins or carved walls!

DRAMA

Keywords explored in this topic

Tableau – A still image

Slow Motion – Exaggerated movement at a slower speed used to highlight an important moment

Characterisation – Using appropriate vocal and physical skills to perform as a character different to yourself

Dialogue – The words spoken between 2 or more characters

Marking the moment – Highlighting the most important part of the scene using a tableau, slow motion, lighting or sound to make it clear to the audience

Body as object – When performers use their body to create an object e.g. a table or a car

Narration - Adding a spoken commentary for the audience about the action onstage.

Charlie & the Chocolate Factory



Tableau Success Criteria

FACIAL EXPRESSIONS

LEVELS

AUDIENCE AWARENESS

GESTURES

STILLNESS



Words to describe Violet Beauregarde: Competitive, Spoilt, Arrogant, Careless

PEER EVALUATION - WAGOLL

Tom's group used tableau effectively. I could see that Tom was using facial expressions such as wide eyes to portray the character of Augustus. He projected his voice so I could clearly hear him. In order to improve, Tom could use an accent to help with his characterisation.



Words to describe Charlie Bucket: 'The Hero', Respectful, Resilient, Happy



Words to describe Veruca Salt: Whiny, Bratty, Spoilt, Ungrateful



Words to describe Mike Teavee: Lazy, Addicted, Arrogant, Snobby



Words to describe Augustus Gloop: Greedy, Silly, Brutish, Lazy

Keywords to recap and use Pitch Pace Pause Tone Volume Accent Gesture Posture Facial Expressions Projection Diction Thought Track Multi-role Split Focus Audience

Evaluative words: successful improve effective captivating interesting focus



G
F
E
D
C
B
A
G
F
E
D
C
B
A
G
F
E
D
C
B
A
G
F
E
D
C
B
A

For the **treble** clef, people use acronyms to remember the **line** letter names. We say 'A rhyme for the lines'

For example:
Every Good Boy Deserves Football
Every Green Bus Drives Fast

See if you can make one using the letters E, G, B, D, and F that is easy for you to remember!

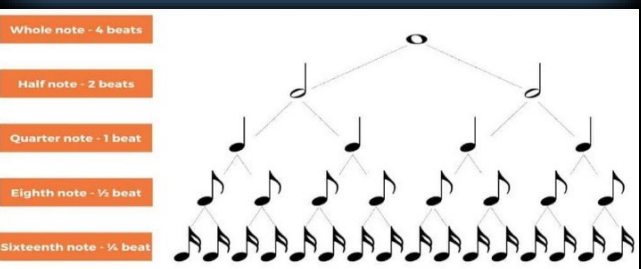
E G B D F

The **space** notes are easy to remember. 'If it's in a **space** then spell out **FACE**'

KEY WORDS: Treble Clef Staff Notation Lines Spaces
 Rhyme F-A-C-E Ledger Lines Pitch Chord Ascending /Descending
 Semibreve Minim Crotchet Quaver Rest

Keyboard Work 1

Year 7 Summer Term



Adding chords: Using the LEFT hand

REMEMBER: Always name notes from the bottom to the top
NOTICE: If you move line-space-line-space the alphabet appears! Only letters A-G

KEY WORDS AND MEANINGS: Tier two words in red. Tier three words in blue.

Treble Clef	A musical sign that indicates the pitch is suitable for RIGHT HAND piano or instruments such as flute, violin and trumpet.
Chord	A collection of notes played at the same time
Melody	The tune
Rhythm	Different lengths of notes create a pattern called rhythm. This fits into the steady beat or pulse
Stave/ Staff	The five lines that music is written on
Sharp	Raising a note by one semitone
Flat	Lowering a note by one semitone
Pitch	How high or low the sound is
Ascending	Rising in pitch
Descending	Falling in pitch

Literacy / key words

Convention – typical features of a GENRE e.g. ghosts in horror

Genre – type or form of art e.g. horror, fantasy, science fiction etc.

Fantasy – genre usually involving magic or supernatural features

Analysis – exploring the effect of language or other techniques

Author – writer of a text

Mythology – cultural myths/stories on important figures or events

Character: the key people in a story e.g. Harry Potter

Heroic – brave or noble character

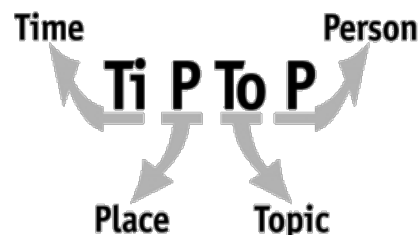
Villainous – wicked or evil character

Inference – ‘reading between the lines’ to understand deeper meaning

Tier 2 Vocabulary:

- **Enchanted** = filled with delight or charmed
- **Conflict** = a battle or war between two sides
- **Disastrous** = highly damaged, ruined or destroyed
- **Villainous** = evil
- Horrific
- Vile/ disgusting
- Sinister/ ominous
- Hellish/ demonic
- Malevolent/ evil
- Idyllic/ beautiful
- Mystical/ fantastical

PARAGRAPHING



Fantasy conventions:

- Good vs Evil
- Change
- Heroes/ Villains
- Magic
- Identity
- Conflict
- Quest for power/Knowledge
- Magical creatures/ people



Tips for learning spellings:

1. Look – Say – Cover – Write – Check
2. Practise by writing out the full word and saying the letters aloud. Then in turn take one letter off the end until you are only writing one letter but saying the others aloud.

Author → Autho_ → Auth__ →

Extra - Read/watch/do

BOOKS:

- ✚ *A Monster Calls* by Patrick Ness
- ✚ *Percy Jackson and the Lightning Thief* by Rick Riordan
- ✚ *The Hobbit* by J.R.R. Tolkien
- ✚ *The School of Good and Evil* by Soman Chainani
- ✚ *All Souls (A Discovery of Witches)* by Deborah Harkness
- ✚ *Twilight* by Stephenie Meyer
- ✚ *The Time Traveller's Wife* by Audrey Niffenegger
- ✚ *Children of Blood and Bone* by Tomi Adeyemi
- ✚ *Stardust* by Neil Gaiman
- ✚ *Mythos* by Stephen Fry (Fiction)
- ✚ *Who Let the God's Out* by Maz Evans

FILMS:

- ✚ *Narnia*
- ✚ *Harry Potter*
- ✚ *Miss Peregrines Home for Peculiar children*
- ✚ *Stardust*
- ✚ *Wizard of Oz*

TV SHOW:

- ✚ *Avatar: The last airbender*
- ✚ *Owl House*
- ✚ *Dragon Prince*
- ✚ *Percy Jackson*

You will be assessed on: An independent, timed QTA analysis of a Fantasy extract already studied, completed in timed assessment conditions (40 minutes + extra time)

Key techniques:

Noun = person/ place/ thing

Adjective = describes a noun e.g. beautiful

Verb = action word e.g. run, analyse

Adverb = describes a verb e.g. quickly, then, next

Modal verb = shows possibility/ obligation/ potential e.g. might, could, must

Intensifiers = adverbs/adverbial phrases that 'intensify' meaning

Hyperbole = exaggeration for effect

Noun phrase = noun + modifier (preposition, adjective, verb etc)

Simile = comparing with like/as

Metaphor = comparing directly (is/was)

Personification = describing non-human as human

Triplet = list of 3

Sensory imagery = describing with the senses e.g. see, hear, smell, touch, taste

Symbol = when an object or image can represent a larger idea e.g. a crown for a king

Allegory = a story with a deeper message or meaning other than the one on the surface e.g. Harry Potter can be an allegory for growing up/ Aslan in an allegory for Jesus

Sentence Starters: Write ONE of each colour at least!

- **Q** (*Writer*) presents ... as... : 'quote'.
- **T**. The (*technique/phrase*) suggests... because...
- **A**. Also the (*word*) implies... because....
- **A**. The reader thinks/feels that... because...



Punctuation Reminder

Commas ,- Separate clauses or indicate a pause.

Apostrophes '- Indicate possession or ownership or to show omission in contractions.

Quotation (speech) marks “ ”- Used to quote from texts or mark out speech.

Semicolon ;- Used to separate two main clauses that are closely related, often replacing a connective.

Brackets (- Used to add additional or non-essential information. The sentence must make sense on its own without the writing in brackets.

Dashes - - can be used in the same way as brackets.

Verbs to analyse (T):

- Shows/ presents
- Implies/Suggests
- Has connotations of
- Reveals/ shows
- Criticises
- Warns
- Emphasises/ highlights
- Symbolise/ represent

Effect on reader (A):

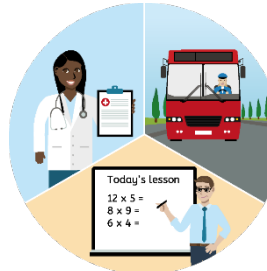
- Intrigues/ wonders
- Shocks/ horrifies/ terrifies
- Imagines/ visualises/ pictures in your mind
- Admires/ likes
- Dislikes/ hates
- Worries/ sympathise/ empathise
- Is excited/ afraid
- Understand

Key Vocabulary		
	Word / Term	Definition
1	democracy	A country in which power is held by elected representatives.
2	fascism	A governmental system led by a dictator having complete power, forcibly suppressing opposition and criticism.
3	patriotism	A feeling of attachment and commitment to a country.
4	pacifism	The belief that war and violence are unjustifiable.
5	empathy	The ability to understand and share the feelings of another.
6	isolation	The state of being alone or lonely.
7	persecution	The act of treating people in a cruel and unfair way, especially because of their race, religion or political beliefs.
8	refugee	A person who has been forced to leave their country in order to escape war, persecution, or natural disaster.
9	scandal	An action or event regarded as morally or legally wrong which can lead to public outrage.
10	sacrifice	To give up something valued or important for the sake of something or someone else.

Key Terminology		
		Definition
11	emotive language	Emotive language is word choice which is used to evoke (arouse/bring up) emotion in the reader or listener.
12	personal account	When someone recounts something that they have experienced or lived through to give a personal and emotional insight into an issue, problem, or achievement.
13	perspective	A particular attitude towards or way of regarding something; a point of view.
14	rhetorical questions	A rhetorical question is one for which the questioner does not expect a direct answer.
15	tone	The attitude towards a subject or audience in a piece of writing.

Key writer: Anne Frank	
16	Anne Frank was born in Germany in 1929 and died in a concentration camp in 1945.
17	Anne Frank and her family moved to Amsterdam because the Nazi party had taken over Germany and were persecuting Jewish people.
18	Anne Frank and her family went into hiding in Amsterdam, behind a bookcase in the building where her father worked.
19	Anne Frank kept a diary for two years which she was given as birthday present.
20	Anne Frank's father survived the Holocaust and arranged for her diary to be published.

Background:



A The world of work can be classified into four different employment sectors.

B Many factors influence the type of employment sector which will be found within a particular country.

C Industrial location is influenced by some key factors, which are more important for some industries in comparison to others.

D Employment structure within countries varies based upon the level of development.

E Trade, imports and exports.

F Employment sectors and impact of industry in Russia.

A) Employment Sectors:

1	employment	(n) when people are in work, receiving a wage and paying tax.
2	unemployment	(n) when people are not in work, therefore do not receive a wage and do not pay tax.
3	primary industries	(n) industries which collect or extract natural resources from the environment, such as farming or fishing.
4	secondary industries	(n) industries which manufacture goods into products, such as builders, car manufacturers or food processing
5	tertiary industries	(n) industries that provide a service, such as teachers, doctors, sales, hairdressers or bus drivers.
6	quaternary industries	(n) industries that involve using technology, design and research, including computer scientists, game designers, computer engineers and research scientists.

B) Influences on employment structures:

1	industrialisation	(n) a move from primary employment to secondary employment, with a rise in manufacturing.
2	mechanisation	(n) when machinery begins to do the jobs which once required humans.
3	disposable income	(n) the money a person has left to spend after they have paid all their bills.
4	public services	(n) a service that is given or funded for the benefit of the community.

C) The Location of Industries:

1	site	(n) the actual place where a settlement first grew up. This refers mainly to its physical setting.
2	situation	(n) the location of a place relative to other features nearby.
3	footloose	(adj) industries which are not tied to a specific location and can operate from anywhere.
4	raw materials	(n) natural resources that are used to make other things.
5	labour	(n) workers, employed people.
6	market	(n) a place where things are bought and sold.

GEOGRAPHY: Year 7 – The Middle East

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-scrappers. 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 forced 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.

GEOGRAPHY: Year 7 – 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

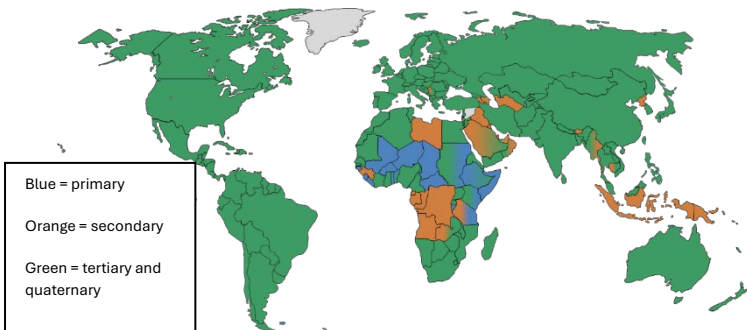
Links to curriculum

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.

D) Employment Structures and Development:

Countries	Industries
developing countries	Large primary sector, growing secondary sector and a moderate tertiary sector.
emerging countries	large secondary sector, rapidly falling primary sector and growing tertiary sector.
developed countries	A large tertiary sector, a growing quaternary sector, both secondary and primary employment is low.

Change	Cause
Falling primary and secondary sector	<ol style="list-style-type: none"> Cheaper to import. Mechanisation has taken jobs. Raw materials have been exhausted in certain areas.
Growing tertiary sector	<ol style="list-style-type: none"> Disposable income has increased, so a greater demand for services. A large public sector e.g. health and education, due to a high tax revenue.

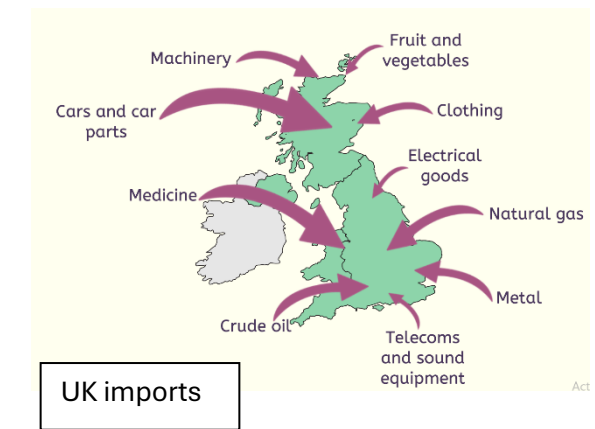
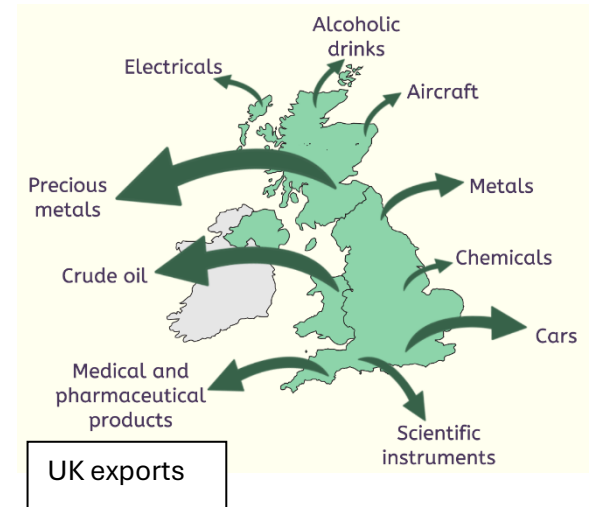


E) Trade

1 trade	(n) the exchange of goods and materials between countries.
2 import	(v) goods brought into a country.
3 export	(v) sending goods to another country for sale.
4 trade bloc	(n) an arrangement in which participant countries lower trade barriers with one another.
5 tariff	(n) a tax imposed on goods when they are imported or exported between countries.

F) Case Study – World of Work in Russia

Factors effecting trade in Russia	
Opportunities	Challenges
With a working population of over 75 million people, Russia has one of the largest workforces in the world.	Russia is at war with Ukraine which affects international relationships.
The Steppe and temperate woodlands of western Russia are fertile and flat.	Russia has the largest land mass of any country.
Russia has an extensive network of roads, railways, ports and pipelines.	Russia does not have a warm water port.
Russia has vast reserves of natural resources including oil and natural gas.	Many countries aim to buy and use less oil and natural gas in the future to mitigate the effects of climate change.
Russia's education system puts a strong focus on science, technology, engineering and maths (STEM).	



Extra - Read/watch/do:

- Read: news articles about changes to industries in the UK – are there any towns where factories are closing, creating mass unemployment?
- Watch: Charlie and the Chocolate Factory! Consider how changes to industries affect Charlie and his family over time.
- Do: talk to older people you know and find out how their job roles have changed over time. Can you identify all four sectors of the economy in your family?

Assessment skill: Describing

When you are writing to describe geographical features, aim to include:

- Specific key terms as well as their definitions
- Give the complete process from beginning to end without missing out any parts of the process.
- Aim to say how one element of the process leads to another
- Write the process in the correct order!

Links to curriculum:

In KS3 we will study how countries develop over time, which is strongly linked to the structure of their economy. We will also study the features of the UK economy at GCSE and look at factors that affect it.

Topic 5 – The Tudors

Literacy / key words

Rebellion – An act of resistance or defiance against authority, especially against a ruler or government.

Monarch – A king or queen who rules a country, such as Henry VIII or Elizabeth I.

Tudors – The royal family that ruled England from 1485 to 1603, starting with Henry VII and ending with Elizabeth I.

Reformation – A religious movement in the 16th century that led to the creation of Protestant churches and challenged the authority of the Pope.

Protestantism – A branch of Christianity that emerged from the Reformation, rejecting the authority of the Pope.

Church of England – The Protestant church established by Henry VIII in 1534 after he broke away from the Catholic Church.

Heretic – A person who holds religious beliefs that go against the official teachings of the Church.

Excommunication – A punishment by the Pope that expels a person from the Catholic Church.

Spanish Armada (1588) – A fleet sent by Catholic Spain to invade England; it was defeated by Elizabeth I's navy.



Who was Henry VIII?

He was King of England from 1509 to 1547. He established the **Church of England**, a Protestant church which split off from the **Catholic Church** in Rome. He did this because he wanted an heir and he wanted a new wife. He had six wives:



Catherine of Aragon who was Mary's mother. Henry divorced her.

Anne Boleyn who was Elizabeth's mother. Henry ordered her to be beheaded.

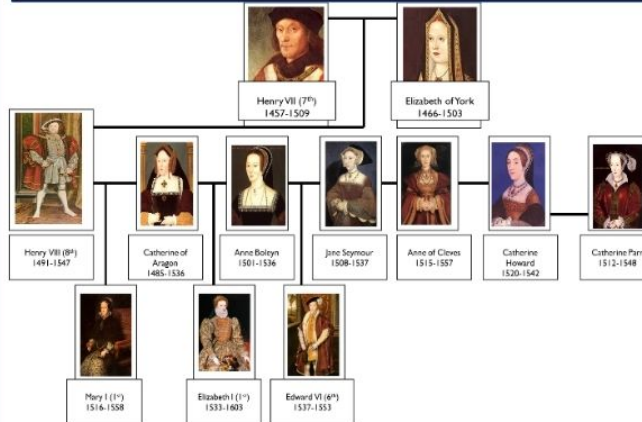
Jane Seymour who was Edward's mother. She died shortly after her son's birth.

Anne of Cleves was divorced by Henry.

Catherine Howard was beheaded.

Catherine Parr who outlived Henry.

Some historians believe he was a good king. He was well educated and multi-lingual. However he was also brutal and ordered thousands of executions!



Who was Elizabeth I?

Elizabeth ruled from 1558-1603.

She was Henry's youngest daughter and was unlikely to ever rule. She ruled for a 45-year reign. She is best known for:



1. leading England to victory against Spain in the Spanish Armada.
2. making the country a Protestant kingdom once again.
3. Ordering the execution of her cousin Mary, Queen of Scots, who plotted against her
4. Overseeing a period of English exploration to the New World (Americas)
5. Remaining unmarried throughout her life, meaning she had no heir and meaning the Tudor dynasty stopped with her.

Who were Edward VI and Mary I?

Henry's children ruled after him. He wanted a male heir and this was his main motivation for marrying so many times.

Edward VI ruled from

1547-1553. He was only a boy, he was sickly, and he died at the age of 15. He ruled England as a Protestant just like his father. He had no child as an heir.



Mary I ruled from 1553-1558.

She was Henry's eldest daughter. She married the King of Spain, she turned the country back into a Catholic kingdom. She was known as "Bloody Mary" because she ordered the burning of nearly 300 Protestants at the stake. She had no child as an heir.



What problems existed in Tudor times?

Religious turmoil between Protestants and Catholics. Even though they were both Christians, they wanted to worship in their own respective ways.



War was an issue. Early on in the Tudor period there was war with Scotland and France. Later on there was war with Spain.



Poverty was incredibly widespread. Poor people sometimes resorted to crime and attacked people



Succession was an issue for Elizabeth as she did not have an heir. There were multiple plots against her.

Extra - Read/watch/do

history-key-moments-facts-timeline-kings-queens/

Henry VIII's reformation: <https://www.bbc.co.uk/bitesize/articles/zgkcr2p>

The reign of Elizabeth I: <https://www.hrp.org.uk/hampton-court-palace/history-and-stories/elizabeth-i/#gs.kxhxle>

The Tudor dynasty: <https://www.historyextra.com/period/tudor/guide-tudors->

You will be assessed on

The reign of Henry and Elizabeth, the Reformation; its causes and consequences, Elizabeth's rule as a woman.

Links to curriculum:



Geography

English



Topic 6 – The Stuarts

Literacy / key words **Divine Right of Kings** –

The belief that the king was chosen by God and had absolute authority.

Parliament – The governing body of England, made up of the House of Commons and House of Lords.

Petition of Right (1628) – A document limiting the king's power, stating he could not raise taxes without Parliament's approval.

Ship Money – A tax traditionally used for naval defence that Charles I extended to all of England, causing widespread anger.

Personal Rule (1629-1640) – A period when Charles I ruled without calling Parliament, leading to tensions.

Long Parliament (1640-1660) – The session of Parliament that challenged Charles I's rule and played a key role in the Civil War.

Royalists – Supporters of Charles I, also known as Cavaliers.

Parliamentarians – Supporters of Parliament, also known as Roundheads.

New Model Army – A professional army created by Parliament in 1645, led by Oliver Cromwell.

Lord Protector (1653-1658) – The title taken by Oliver Cromwell when he ruled England as a military dictator.

Rump Parliament – The remnant of Parliament after Pride's Purge, responsible for executing Charles I

What caused the English Civil War?

Political, economic and religious tensions caused the relationship between King Charles I and his Parliament to break down. He ruled on his own without them for years. When he called them back they tried to get him to agree to new rules. He refused. He tried to arrest rebellious MPs by storming into the House of Commons. In 1642 he declared war on Parliament and both sides began to build their forces up for war.

What happened during the English Civil War?

The war was fought from 1642 until 1646 and then it started again briefly from 1648 to 1649. Both sides won some battles but soon enough Parliament was able to defeat the King in numerous battles. The two sides were:

Parliamentarians

- Their soldiers were known as Roundheads
- Most of them came from the south of the country
- They were supported by the navy
- They had access to more money
- Oliver Cromwell trained them into the New Model Army



Royalists

- Their soldiers were known as Cavaliers
- Most of them came from the north and more rural areas
- They expected support from foreign kings
- They were better trained at the start of the war
- They used cavalry



What problems did the Stuarts face?

Religious tension was still high as it had been during the Tudor period.

The **Gunpowder Plot** of 1605 was an attempt to blow up the Houses of Parliament by Catholic plotters. It was stopped at the last moment.

Political tension was high as king and parliament had different opinions on how to run the country. This would cause a **civil war!**

Plague badly affected England during the Stuart period, especially in 1665.

The Great Plague of 1665 caused thousands to die.

The Great Fire of London caused much of the capital to burn in 1666. The city needed much rebuilding after this disaster.



Why did the king lose his head?

By January 1649 it became clear that King Charles I had no interest in respecting Parliament's demands. He was put on trial and he was to be beheaded. This was a way of setting an example that the English people would not tolerate a king who did not have their best interests. The Parliamentarians ruled the country under Oliver Cromwell and changed the country.



Extra - Read/watch/do

Charles I: https://www.bbc.co.uk/history/historic_figures/charles_i_king.shtml
<https://www.hrp.org.uk/banqueting-house/history-and-stories/the-execution-of-charles-i/#gs.kxi5y4>

The English Civil War: <https://www.english-heritage.org.uk/learn/histories/the-english-civil-wars-history-and-stories/>

You will be assessed on:

The reign of Charles I, the split between Parliament and the King, causes and consequences of the Civil War, Oliver Cromwell.

Links to curriculum:



Topic 4 – Medieval Rebellion

Literacy / key words

King John and the Magna Carta:

Magna Carta – A document signed in 1215 that limited the power of the king and granted rights to barons.

Barons – Wealthy landowners who advised the king and controlled large areas of land.

Feudal System – A system where the king granted land to nobles in exchange for loyalty and military service.

Excommunication – Expulsion from the Church, a punishment used by the Pope against disobedient rulers.

Rebellion – An uprising against authority, such as the barons' rebellion against King John.

Runnymede – The location where King John signed the Magna Carta.

Provisions of Oxford (1258) – A set of reforms imposed by barons to limit the king's power and create a council to govern.

Parliament – A group of representatives who helped make decisions in government, first formed under Simon de Montfort.

Peasants' Revolt – A major uprising in 1381 led by peasants against high taxes and feudal oppression.

Poll Tax – A tax that everyone had to pay equally, regardless of wealth, which triggered the Peasants' Revolt.

Wat Tyler – Leader of the Peasants' Revolt, who was later killed by the king's men.

Serfdom – The status of peasants who were tied to the land and forced to work for their lords.

Villeins – Unfree peasants who had to work for their lord and could not leave their land.

Black Death (1347-1351) – A deadly plague that killed a third of Europe's population and led to labour shortages.

Who are the key individuals involved in rebellion?

King John – The unpopular king who was forced to sign the Magna Carta due to his unfair rule and high taxes.



Henry III – King of England (1216-1272), son of King John, known for his conflicts with the barons.



Simon de Montfort – A baron who led a rebellion against Henry III and established an early form of Parliament.



Richard II – The 14-year-old king during the Peasants' Revolt who tricked the rebels with false promises.



John Ball – A priest who inspired peasants with radical ideas about equality.



Why did John have to sign the Magna Carta?



King John was forced to sign the Magna Carta in 1215 because he was an unfair and unpopular king. Here are the main reasons:

High Taxes – John kept raising taxes to pay for wars, which made the barons (powerful landowners) very angry.

Losing Wars – He lost important land in France, making him look weak and untrustworthy.

Arguments with the Church – He had a big fight with the Pope and was even banned from church for a while.

Unfair Rules – John would punish people without a fair trial and take land or money whenever he wanted.

The barons rebelled and forced John to agree to the Magna Carta, which limited his power and gave people more rights.

What made a good medieval King?



1. Strong Leadership

A good king needed to be a strong leader to make important decisions and lead his people, especially in times of war. If a king was weak, his enemies might try to take his land or overthrow him.

2. Fairness and Justice

Medieval kings had to make sure that laws were followed and that punishments were fair. If a king was unfair or cruel, his people might rebel against him. A just king kept his kingdom peaceful and strong.

3. Bravery in Battle

Many kings had to fight in wars to defend their kingdom or expand their land. A brave king earned the respect of his knights and soldiers, making them more willing to fight for him.

4. Wisdom and Intelligence

A king needed to be wise to make good decisions about money, alliances, and war. A foolish king could make mistakes that led to poverty, rebellions, or defeat in battle.

5. Loyalty to His People

A good king had to care for his people and protect them. If he ignored their needs, they might turn against him or support someone else who wanted to be king.

6. Strong Alliances

Kings often made alliances (friendships) with other rulers by marrying into powerful families or making agreements. This helped protect their kingdom from attacks and made them more powerful.

7. Religious Faith

Religion was very important in medieval times. A good king was expected to support the church and follow Christian teachings. Many people believed that a king was chosen by God, so being religious helped him keep his people's trust.

Why did Henry III fall out with Simon de Montfort?



Henry III and Simon de Montfort fell out for several key reasons:

Money Problems – Henry III often needed money but spent it unwisely, such as on wars and expensive projects. Simon de Montfort and other barons were frustrated by his financial mismanagement.

The Provisions of Oxford (1258) – The barons, led by Simon, forced Henry to accept new rules called the *Provisions of Oxford*, which limited the king's power and gave the barons more control over decisions. Henry later ignored these rules, making Simon angry.

Personal Rivalry – At first, Henry and Simon were allies, and Simon even married Henry's sister. But over time, their relationship soured because Simon felt Henry was unfair and did not keep his promises.

Civil War (Second Barons' War, 1264-1267) – Their disagreements led to war. Simon de Montfort led the barons against Henry in battle. Simon won at first, even capturing the king, but he was later defeated and killed. In short, Henry and Simon fell out because Henry was a poor ruler who ignored the barons, and Simon wanted more control to protect England from bad leadership.



Why did the peasants' revolt?

The Peasants' Revolt of 1381 happened because many people in England were angry about how they were being treated. Here are the main reasons:

High Taxes – The government introduced a new tax called the **Poll Tax**, which everyone had to pay, rich or poor. Many peasants could not afford it, and tax collectors were harsh.

The Black Death – The plague (1347-1351) killed many people, so there were fewer workers. Peasants thought they should get better wages, but the government stopped them from earning more money.

Unfair Laws – The **Statute of Labourers (1351)** forced peasants to work for the same low wages as before the Black Death, even though their work was more valuable.

Weak Leadership – King Richard II was only 14, and his advisors were unpopular. Many people blamed them for the problems in the country.

Anger at Local Lords – Peasants were forced to work for landowners without fair pay. Some lords treated them cruelly, and this made people furious.

Inspiration from Leaders – A preacher called **John Ball** and a rebel leader named **Wat Tyler** encouraged peasants to fight for their rights.

Extra - Read/watch/do

The Peasants' Revolt: <https://www.bbc.co.uk/bitesize/articles/zyb77yc>

The Provisions of Oxford: <https://www.parliament.uk/about/living-heritage/evolutionofparliament/originsofparliament/birthofparliament/overview/simondemontfort/provisionsoxford/#:~:text=The%20Provisions%20of%20Oxford%20were,the%20contemporary%20countries%20of%20England.>

The Story of the Magna Carta: <https://www.youtube.com/watch?v=wWKTy1NlxZE>

You will be assessed on

Knowledge of King John's reign, signing of the Magna Carta, the fall out between Henry III and Simon de Montfort, reasons for the Peasants' Revolt.

Links to curriculum:


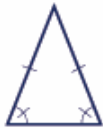






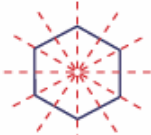



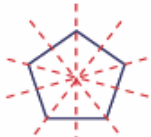


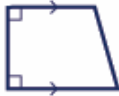
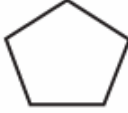




Geography

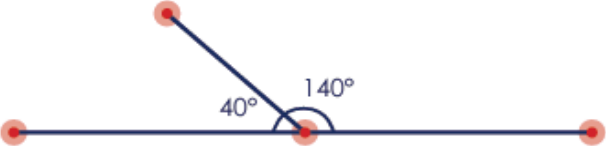
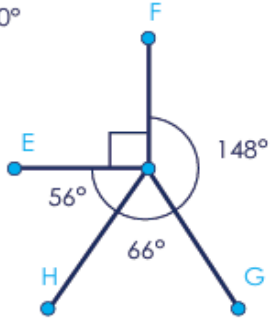
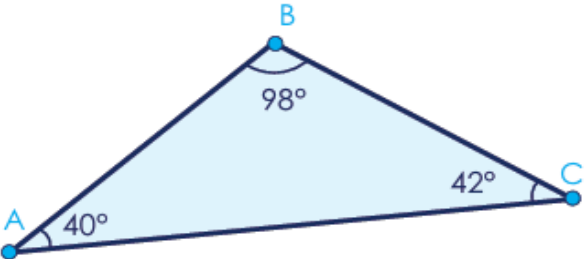
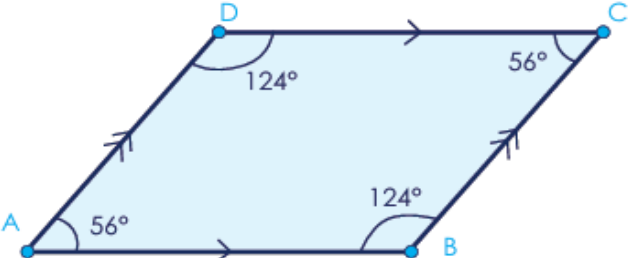
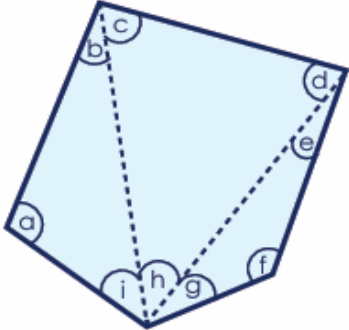
English



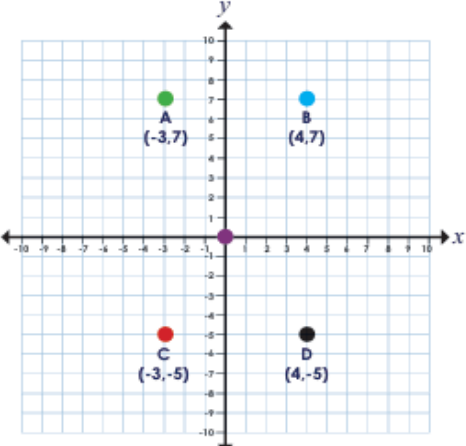
KPI 7.15 Polygons

1) 3 sides	Triangle	2) 4 sides	Quadrilateral	23) Line symmetry	24) Rotational symmetry
3) 5 sides	Pentagon	4) 6 sides	Hexagon	The mirror lines of a shape. If a polygon is regular, the number of sides is equal to the number of lines of symmetry.	The number of positions in which the rotated object appears unchanged. The number of positions is called the order of the symmetry. For example, Order 3 tells us that a shape can be rotated into three positions where the shape appears unchanged.
5) 7 sides	Heptagon	6) 8 sides	Octagon		
7) 9 sides	Nonagon	8) 10 sides	Decagon		
9) 11 sides	Hendecagon	10) 12 sides	Dodecagon		
11) Equilateral Triangle	<ul style="list-style-type: none"> • 3 equal angles • 3 equal sides 	12) Isosceles Triangle	<ul style="list-style-type: none"> • 2 equal angles • 2 equal sides 		
13) Scalene Triangle	<ul style="list-style-type: none"> • All angles are different • All sides are different 	14) Right-angled Triangle	<ul style="list-style-type: none"> • One angle of 90° • Can be isosceles or scalene 	<p>Three lines of symmetry</p>  <p>Equilateral Triangle</p>	 <p>No rotational symmetry</p>
15) Square	<ul style="list-style-type: none"> • 4 right angles • 4 equal sides • 2 pairs of parallel sides 	16) Rectangle	<ul style="list-style-type: none"> • 4 right angles • 2 pairs of parallel sides • 2 pairs of equal sides 	<p>Six lines of symmetry</p>  <p>Regular Hexagon</p>	 <p>Order 3</p>
17) Parallelogram	<ul style="list-style-type: none"> • 2 pairs of equal sized angles • 2 pairs of parallel sides • 2 pairs of equal sides 	18) Rhombus	<ul style="list-style-type: none"> • 4 equal sides • 2 pairs of equal sized angles • 2 pairs of parallel sides 	<p>Five lines of symmetry</p>  <p>Regular Pentagon</p>	 <p>Order 4</p>
19) Trapezium	<ul style="list-style-type: none"> • 1 pair of parallel sides 	20) Right-angled Trapezium	<ul style="list-style-type: none"> • 2 right angles • 1 pair of parallel sides 		 <p>Order 5</p>
21) Isosceles Trapezium	<ul style="list-style-type: none"> • 1 pair of parallel sides • 2 pairs of equal sides • 2 pairs of equal sized angles 	22) Kite	<ul style="list-style-type: none"> • 1 pair of equal sized angles • 2 pairs of equal sides 		

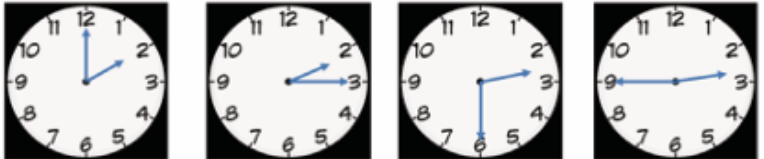
KPI 7.16 Angles

1) Angle	An angle is a measure of turn from one line segment to another. One whole turn is equal to 360 degrees.	2) Degree	The most common unit of measurement for angles.
3) Acute Angle	Less than 90°	4) Right Angle	Exactly 90°
5) Obtuse Angle	Greater than 90° but less than 180°	6) Reflex Angle	Greater than 180°
7) Angles on a straight line	Angles on a straight line sum to 180° 	8) Angles around a point	Angles around a point sum to 360° 
9) Angles in a triangle	Angles in a triangle sum to 180° 	11) Angles in any polygon	Any polygon can be split into several triangles to find the sum of the total interior angles. $a + b + i = 180^\circ$ $c + d + h = 180^\circ$ $e + f + g = 180^\circ$ So, total sum of interior angles = 540° This information allows us to find a missing angle.
10) Angles in a quadrilateral	Angles in a quadrilateral sum to 360° 		


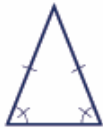


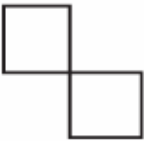







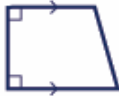
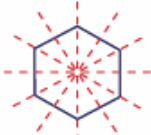



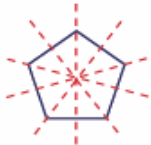

KPI 7.17 Co ordinates

1) Coordinates	Written in pairs and inside a bracket. The first number is the x coordinate (horizontal position). The second number is the y coordinate (vertical position).		<p style="color: green;">Point A is in the SECOND quadrant</p> <p style="color: blue;">Point B is in the FIRST quadrant</p> <p style="color: red;">Point C is in the THIRD quadrant</p> <p style="color: black;">Point D is in the FOURTH quadrant</p> <p style="color: purple;">The coordinate (0,0) is also known as the ORIGIN</p>
2) Origin	The coordinate (0,0) is where the x axis and y axis intersect.	6) Midpoint of two coordinates	<p>6) Midpoint of two coordinates</p> <ol style="list-style-type: none"> 1. Add the x coordinates, divide by 2. 2. Add the y coordinates, divide by 2. 3. Write as a coordinate (x, y). <p>E.g. The midpoint of $(2, 2)$ and $(8, 4) = (5, 3)$</p> <p>midpoint of x coordinates: $\frac{2+8}{2} = \frac{10}{2} = 5$</p> <p>midpoint of y coordinates: $\frac{2+4}{2} = \frac{6}{2} = 3$</p>
3) Axis Plural-Axes	x axis is horizontal ($y = 0$). y axis is vertical ($x = 0$).		
4) Vertical lines	Always in the form $x = a$.		
5) Horizontal lines	Always in the form $y = a$.		

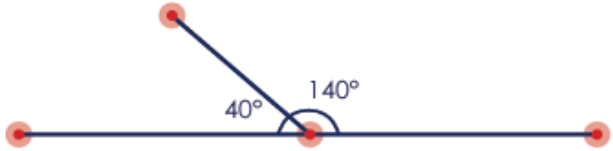
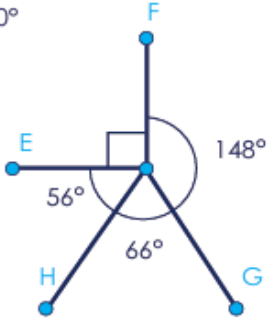
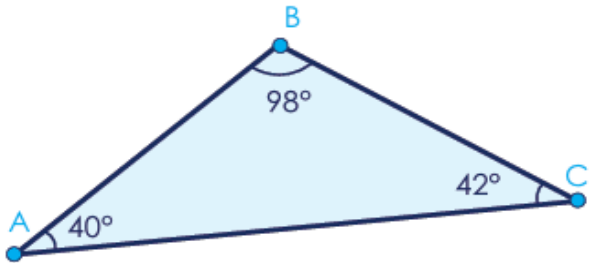
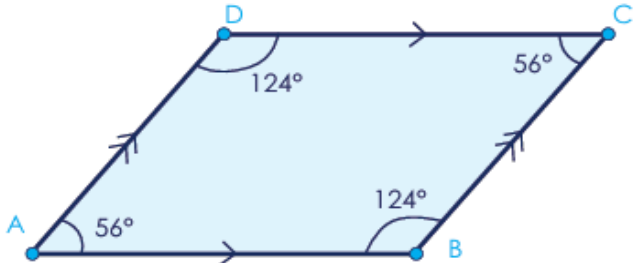
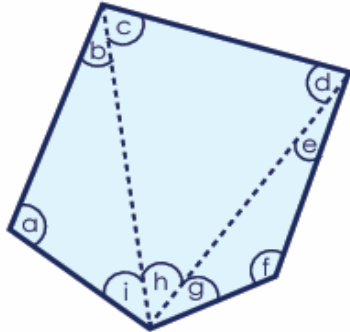
KPI 7.18 Time

1) Analogue									
2) Digital	<p>Times will appear differently on digital clocks depending on whether they are in 12-hour clock or 24-hour clock mode.</p> <table style="width: 100%; text-align: center;"> <tr> <td style="color: green;">2:00 am → 02:00</td> <td style="color: green;">2:15 am → 02:15</td> <td style="color: green;">2:30 am → 02:30</td> <td style="color: green;">2:45 am → 02:45</td> </tr> <tr> <td style="color: green;">2:00 pm → 14:00</td> <td style="color: green;">2:15 pm → 14:15</td> <td style="color: green;">2:30 pm → 14:30</td> <td style="color: green;">2:45 pm → 14:45</td> </tr> </table>	2:00 am → 02:00	2:15 am → 02:15	2:30 am → 02:30	2:45 am → 02:45	2:00 pm → 14:00	2:15 pm → 14:15	2:30 pm → 14:30	2:45 pm → 14:45
2:00 am → 02:00	2:15 am → 02:15	2:30 am → 02:30	2:45 am → 02:45						
2:00 pm → 14:00	2:15 pm → 14:15	2:30 pm → 14:30	2:45 pm → 14:45						
3) Days	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; padding: 5px;">There are 24 hours in one day.</td> <td style="width: 25%; padding: 5px;">4) Hours</td> <td style="width: 25%; padding: 5px;">1 hour = 60 minutes</td> <td style="width: 25%; padding: 5px;">5) Minutes</td> <td style="padding: 5px;">1 minute = 60 seconds</td> </tr> </table>	There are 24 hours in one day.	4) Hours	1 hour = 60 minutes	5) Minutes	1 minute = 60 seconds			
There are 24 hours in one day.	4) Hours	1 hour = 60 minutes	5) Minutes	1 minute = 60 seconds					

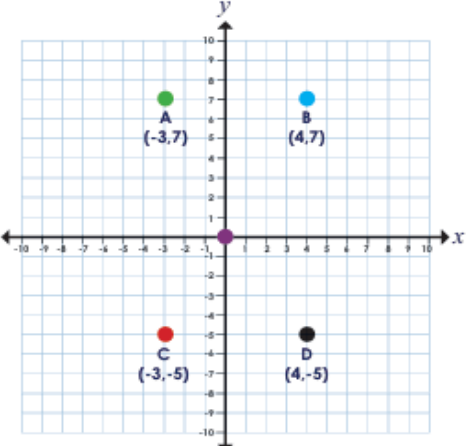
KPI 7.15 Polygons

1) 3 sides	Triangle	2) 4 sides	Quadrilateral	23) Line symmetry	24) Rotational symmetry
3) 5 sides	Pentagon	4) 6 sides	Hexagon	The mirror lines of a shape. If a polygon is regular, the number of sides is equal to the number of lines of symmetry.	The number of positions in which the rotated object appears unchanged. The number of positions is called the order of the symmetry. For example, Order 3 tells us that a shape can be rotated into three positions where the shape appears unchanged.
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11) Equilateral Triangle	<ul style="list-style-type: none"> • 3 equal angles • 3 equal sides 	12) Isosceles Triangle	<ul style="list-style-type: none"> • 2 equal angles • 2 equal sides 		
13) Scalene Triangle	<ul style="list-style-type: none"> • All angles are different • All sides are different 	14) Right-angled Triangle	<ul style="list-style-type: none"> • One angle of 90° • Can be isosceles or scalene 	<i>Square</i>	
15) Square	<ul style="list-style-type: none"> • 4 right angles • 4 equal sides • 2 pairs of parallel sides 	16) Rectangle	<ul style="list-style-type: none"> • 4 right angles • 2 pairs of parallel sides • 2 pairs of equal sides 	<i>Three lines of symmetry</i>	
17) Parallelogram	<ul style="list-style-type: none"> • 2 pairs of equal sized angles • 2 pairs of parallel sides • 2 pairs of equal sides 	18) Rhombus	<ul style="list-style-type: none"> • 4 equal sides • 2 pairs of equal sized angles • 2 pairs of parallel sides 	<i>Equilateral Triangle</i>	
19) Trapezium	<ul style="list-style-type: none"> • 1 pair of parallel sides 	20) Right-angled Trapezium	<ul style="list-style-type: none"> • 2 right angles • 1 pair of parallel sides 	<i>Six lines of symmetry</i>	
21) Isosceles Trapezium	<ul style="list-style-type: none"> • 1 pair of parallel sides • 2 pairs of equal sides • 2 pairs of equal sized angles 	22) Kite	<ul style="list-style-type: none"> • 1 pair of equal sized angles • 2 pairs of equal sides 	<i>Regular Hexagon</i>	
				<i>Five lines of symmetry</i>	
				<i>Regular Pentagon</i>	

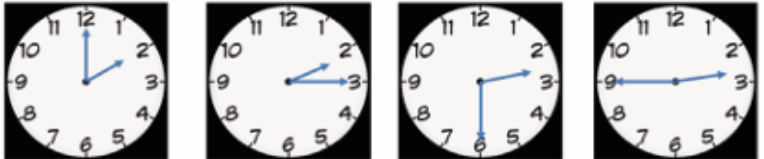
KPI 7.16 Angles

1) Angle	An angle is a measure of turn from one line segment to another. One whole turn is equal to 360 degrees.	2) Degree	The most common unit of measurement for angles.
3) Acute Angle	Less than 90°	4) Right Angle	Exactly 90°
5) Obtuse Angle	Greater than 90° but less than 180°	6) Reflex Angle	Greater than 180°
7) Angles on a straight line	Angles on a straight line sum to 180° 	8) Angles around a point	Angles around a point sum to 360° 
9) Angles in a triangle	Angles in a triangle sum to 180° 	11) Angles in any polygon	Any polygon can be split into several triangles to find the sum of the total interior angles. $a + b + i = 180^\circ$ $c + d + h = 180^\circ$ $e + f + g = 180^\circ$ So, total sum of interior angles = 540° This information allows us to find a missing angle.
10) Angles in a quadrilateral	Angles in a quadrilateral sum to 360° 		

KPI 7.17 Co ordinates

1) Coordinates	<p>Written in pairs and inside a bracket. The first number is the x coordinate (horizontal position). The second number is the y coordinate (vertical position).</p>		<p>Point A is in the SECOND quadrant</p> <p>Point B is in the FIRST quadrant</p> <p>Point C is in the THIRD quadrant</p> <p>Point D is in the FOURTH quadrant</p> <p>The coordinate (0,0) is also known as the ORIGIN</p>
2) Origin	The coordinate (0,0) is where the x axis and y axis intersect.	<p>6) Midpoint of two coordinates</p> <p>1. Add the x coordinates, divide by 2. 2. Add the y coordinates, divide by 2. 3. Write as a coordinate (x, y).</p> <p>E.g. The midpoint of $(2, 2)$ and $(8, 4) = (5, 3)$</p> <p>midpoint of x coordinates: $\frac{2+8}{2} = \frac{10}{2} = 5$</p> <p>midpoint of y coordinates: $\frac{2+4}{2} = \frac{6}{2} = 3$</p>	
3) Axis Plural-Axes	x axis is horizontal ($y = 0$). y axis is vertical ($x = 0$).		
4) Vertical lines	Always in the form $x = a$.		
5) Horizontal lines	Always in the form $y = a$.		

KPI 7.18 Time

1) Analogue									
2) Digital	<p>Times will appear differently on digital clocks depending on whether they are in 12-hour clock or 24-hour clock mode.</p> <table style="width: 100%; text-align: center;"> <tr> <td style="color: green;">2:00 am → 02:00</td> <td style="color: green;">2:15 am → 02:15</td> <td style="color: green;">2:30 am → 02:30</td> <td style="color: green;">2:45 am → 02:45</td> </tr> <tr> <td style="color: green;">2:00 pm → 14:00</td> <td style="color: green;">2:15 pm → 14:15</td> <td style="color: green;">2:30 pm → 14:30</td> <td style="color: green;">2:45 pm → 14:45</td> </tr> </table>	2:00 am → 02:00	2:15 am → 02:15	2:30 am → 02:30	2:45 am → 02:45	2:00 pm → 14:00	2:15 pm → 14:15	2:30 pm → 14:30	2:45 pm → 14:45
2:00 am → 02:00	2:15 am → 02:15	2:30 am → 02:30	2:45 am → 02:45						
2:00 pm → 14:00	2:15 pm → 14:15	2:30 pm → 14:30	2:45 pm → 14:45						
3) Days	<p>There are 24 hours in one day.</p> <table style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black;">4) Hours</td> <td style="border: 1px solid black;">1 hour = 60 minutes</td> <td style="border: 1px solid black;">5) Minutes</td> <td style="border: 1px solid black;">1 minute = 60 seconds</td> </tr> </table>	4) Hours	1 hour = 60 minutes	5) Minutes	1 minute = 60 seconds				
4) Hours	1 hour = 60 minutes	5) Minutes	1 minute = 60 seconds						

Key Vocabulary

1	Jesus	The most important figure in Christianity, believed to be the Son of God.
2	Mary	The mother of Jesus.
3	Ministry	The work of a religious person.
4	Crucifixion	The execution of Jesus, by the Romans, on a cross.
5	Resurrection	Jesus rising from the dead three days after his crucifixion.
6	Ascension	Jesus' ascent to heaven, 40 days after his resurrection.
7	Mary Magdalene	A follower of Jesus who witnessed his resurrection.
8	The Great Commission	Jesus' instruction to his followers to spread his teachings to all people.
9	Apostles	The twelve main followers of Jesus who spread his message.
10	St Paul	An early Christian leader who wrote many letters in the New Testament.
11	Phoebe	A deaconess mentioned in the New Testament who helped the early church.
12	Lydia	A businesswoman and early Christian supporter of Paul.
13	Nicene Creed	A statement of Christian faith.
14	Trinity	The Christian belief in one God in three persons: Father, Son and Holy Spirit.
15	Reformation	A movement in the 16 th century that led to the creation of Protestant churches.
16	Protestant	A branch of Christianity that broke away from the Catholic Church during the Reformation.
17	Catholic	The largest branch of Christianity, led by the Pope.
18	Pope	The leader of the Catholic Church.
19	Messiah	One expected to save and lead the people. Christians believe this to be Jesus.
20	Salvation	Being saved from sin and its consequences.
21	Sermon on the Mount	A collection of teachings by Jesus covering topics like love, prayer and moral guidance.
22	The Lord's Prayer	A prayer taught by Jesus to his disciples, summarising key beliefs in the Christian faith.
23	Denomination	A specific branch of group within Christianity.
24	Sacrament	An important ritual that represents an important part of the faith.

Holy Books introduced

The Bible	The most important book in Christianity. It is divided into two main parts: the Old Testament, which contains the history and teachings of the Jewish faith, and the New Testament, which focuses on the life, teachings, death and resurrection of Jesus and the early Christian community.
The Gospels	These are four books in the Bible which contain the accounts of the life of Jesus. They are written by Matthew, Mark, Luke and John.

Tools for Studying Religion

Theology is the study of God and ideas about God. Theologians look at how ideas about God influence beliefs in religions and the actions people will do.



Social Scientists use evidence to see how people are influenced by society. Social Scientists look at patterns in what people believe about God and how this may change due to time and place.



Jesus' Birth:

Jesus' birth is described in the Gospels of Matthew and Luke and took place around the year 1 AD whilst the Jewish homeland was being ruled by Romans.

Jesus' mother, Mary, was told by the Angel Gabriel that she would have a baby called Jesus, which means "God with us".

Jesus is the incarnation of God – this means that He is God in human form, who came to earth to teach people how to live.

Jesus' Ministry:

The Sermon on the Mount: Jesus re-frames the Torah and tells people to follow the spirit of the law, rather than the letter of the law. Teaches that the poor and marginalised will enter God's kingdom (Heaven).

Prayer: Jesus is often seen going away to pray. He also taught the disciples (followers) to pray the Lord's Prayer.

Parables: Jesus used stories to teach people about Heaven and how to live. E.g. the parable of the Sheep and Goats shows how Christians should treat others, and the eternal consequences.

Miracles: Jesus performed many miracles, including turning water into wine, healing the sick, calming a storm, and walking on water.

Jesus' Death and Resurrection:

Holy Week: Holy Week begins on Palm Sunday (remembering Jesus' triumphal entry into Jerusalem) and ends on Easter Day (also called Resurrection Sunday).

Death (Crucifixion): Jesus was betrayed by Judas and denied by Peter. Pontius Pilate sentenced Jesus to death by Crucifixion (on a cross). He was killed in public with two other thieves.

Resurrection: Jesus was buried in a sealed tomb. The women went to pay their respects and found the tomb open and empty. An angel told them that Jesus had risen. Jesus then appeared to the disciples and explained the meaning of his death and resurrection to them.

The Great Commission and Ascension:

The Great Commission: The sending of Jesus' followers into the world to "make disciples of all nations...teaching them to obey everything I have commanded you."

Ascension: Jesus goes up to heaven to return to be with God, the Father, and leaves behind the Holy Spirit. He promises to return (the second coming)

Pentecost: The Holy Spirit came to the disciples and they could speak in 'other tongues' (languages) so that they could spread the Gospel.

The Establishment and Growth of the Church:

St Paul: Paul had been a Jewish man who persecuted Jewish people, until he had a vision of Jesus on the road to Damascus and became a follower of Jesus.

He travelled to other nations and wrote letters to the early church communities to spread the Gospels.

Christianity in the Roman Empire: Christians were often persecuted. Emperor Constantine made Christianity the official religion of the Roman Empire which led to the establishment of the Church.

Authority of the Bible:

Christians look to the Bible for guidance on how to live their lives and believe that it is inspired by God.

Interpretations: Some believe that the Bible was written for all people, whereas others think we have to look at the context of when it was written.

Some understand it literally and others take a more liberal (symbolic) approach.

The Gospel writers sometimes describe events in different ways, and in a different order.

Catholicism and Protestantism:

Catholicism (Apostles, Popes and Bishops): The Catholic Church believes that the Pope and Bishops are the successors of Peter and the apostles .

Various Church traditions have developed throughout history and they have different understandings about the authority of the Bible vs the Church.

The inaccessibility of the Bible to most (illiterate) people throughout Church history prompted the work of the Reformers to translate the Bible into German, English, etc.

Protestantism: Protestantism began through a protest against Catholicism's more questionable practices (e.g. indulgences). Martin Luther's 95 theses are usually recognised as marking the beginning of the Reformation.

There has been subsequent growth and development of many different denominations, including Pentecostalism

Sacraments:

Life After Death:

Evangelism and Mission:

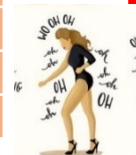


Tenses (& key verbs)



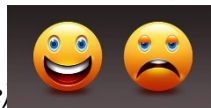
Son= they are
 Hay - there is
 Es - is
 Tiene - has

Regular verbs – present tense endings



FUTURE Saying what you are going to do

Opinions & Pronouns



Me chifla (*pleases me*) Me enfada (*angers me*)
 Me impresiona (*impresses me*) Me repugna (*angers me*)
 Me fascina (*fascinates me*) Me irrita (*repulses me*)
 Me interesa (*interests me*) Me aburre (*bores me*)

Connectives



También / además also/furthermore
 Pero / sin embargo but / however
 que which
 Donde where
 Porque / dado que because/ given that
 Aunque although
 Así que / por eso there fore /so

Complexity

Tengo que+ inf - I have to....
 Tengo que vivir en - I have to live in
 Tengo que compartir con - I have to share with

No tiene....TAMPOCO tiene... =
 It doesn't have..... neither does it have.....

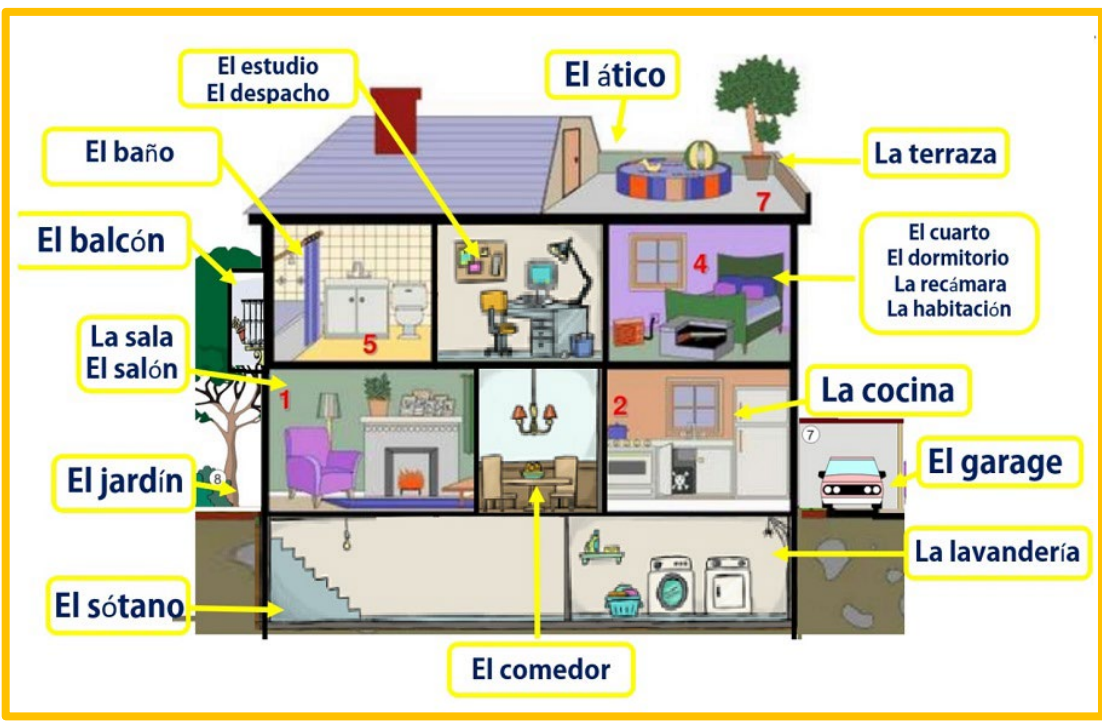


Adjectives

Acogedor(a)	Cosy
Adosado/a	Semi-detached
Reformado/a	Renovated
antiguo/a	old
viejo/a	old
moderno/a	modern
nuevo/a	new
bonito/a	pretty
feo/a	ugly
cómodo/a	comfortable
incómodo	uncomfortable
ordenado/a	tidy
desordenado/a	untidy
limpio/a	clean
sucio/a	dirty

Vivo en un piso nuevo
 La cocina es limpia pero
 los baños son pequeños





PREPOSICIONES DE LUGAR

¿DÓNDE ESTÁ EL MONTO?

encima de	debajo de	a la derecha de
a la izquierda de	entre	al lado
adentro de	enfrente de	detrás de

Más palabras

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

LA PUERTA 	EL ARMARIO 	LA ESTANTERÍA 	LA VENTANA
			LAS CORTINAS
EL ESCRITORIO 	EL ORDENADOR 	EL COJÍN 	LA CAMA
			LA ALMOHADA
			LAS SÁBANAS
			EL EDREDÓN
LA LÁMPARA 	EL ESPEJO 	EL CUADRO 	
LA MESILLA DE NOCHE 			

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WAGOLL

T O P C A T

Vivo en una casa adosada y renovada. Mi casa es pequeña que me molesta.

Vivo con mi familia en las afueras de la ciudad de Manchester. Mi barrio es residencial. Sin embargo mi amigo vive en el campo que me aburre.

Me gusta mi casa porque ES bonita y también ES bastante moderna. Además mi barrio ES limpio y tranquilo y TIENE un parque grande.

En el futuro voy a vivir en el centro de una ciudad grande porque será muy divertido. Voy a vivir en un piso increíblemente nuevo que será fantástico.

Materials

Everything around us is made of materials. The material is what an object is made of, for example a cup can be made of glass, plastic or paper. Materials can be **natural** (found in nature), or **synthetic** (made by humans). The material that we choose to make an object from depends on its purpose. Understanding materials helps us select the right one for different uses, with the use depending on the property of the material.



glass cup



plastic cup



paper cup

Ceramics

A ceramic is a non-metallic material that is formed by heating and cooling a soft substance, which transforms it into a hard material.

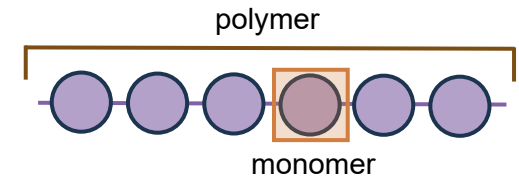
Clay ceramics are made by shaping wet clay while it's soft and then heating it to a high temperature and allowing it to cool, which causes it to harden.

Property	Examples of uses
hard	vases, statues and many other objects
strong when compressed	bricks used for building structures
good electrical insulators	outdoor electrical power - line insulators
non-reactive with water	mugs and dishes
resistant to chemicals	kitchen and bathroom tiles
high melting points	oven baking dishes, jet engine turbine blades

Ceramics are **brittle**, so they cannot be bent, and they shatter or break when hit, dropped, or if too much force is applied.

Polymers

A polymer is a long chain molecule made of repeating units called monomers.



Polymerisation is the joining of monomers to form polymers.

Natural polymers occur naturally and are found in plants and animals e.g. cellulose in plant cell walls, starch in potatoes, wool from sheep, chitin that forms exoskeletons.

Synthetic polymers are manufactured using chemicals taken from crude oil e.g. polyester and nylon used in clothing, PVC used to make rain gutters, polyethene used for plastic bags.

An increased population increases demand for resources and raw materials. Raw materials, which are natural resources that are used to make other things, are running out e.g. crude oil used to manufacture synthetic polymers. Competition for and the reduction of raw materials like crude oil has ethical, social, economic and political consequences.

Polymers have common properties, like being in the solid state at room temperature.

Property	Examples of uses
good electrical insulators	casing around electrical wires
chemically unreactive	food containers
durable	shopping bags
mouldable	Plastic bottles



Materials

Polymers (continued)

Polymers can have very different properties.

- Polymers can have different properties when they are made of different monomers. This is because different monomers have different properties.
- Polymers can also have different properties when they have different length chains lengths. Longer polymer chains have higher melting points and are stronger.

Plastics and polymers can cause environmental and health problems:

- Many polymers take hundreds of years to degrade, accumulating in landfills and oceans.
- Improper disposal and littering of polymer products cause widespread pollution.
- Polymer chemicals may disrupt reproduction in organisms.

Global efforts like the plastic bag charge are being taken to address polymer - related environmental issues.

Polymers can be reused, recycled, incinerated, or sent to landfill. Each method has advantages and disadvantages, e.g. landfill takes up space and releases harmful gases.

Composite materials

A composite material is a material that is made from two or more different types of material.

- The materials for a composite material are chosen because they have different properties that combine to make a more useful material with improved properties.
- Each material in a composite keeps its original properties, and the properties of those materials complement one another.

Composite materials (continued)

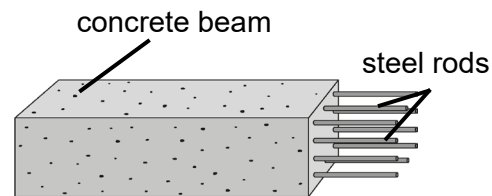
The properties of composites make them suitable for specific applications e.g. breathable fabric used for outdoor activities.

The exact properties and behaviour of a composite material will depend on:

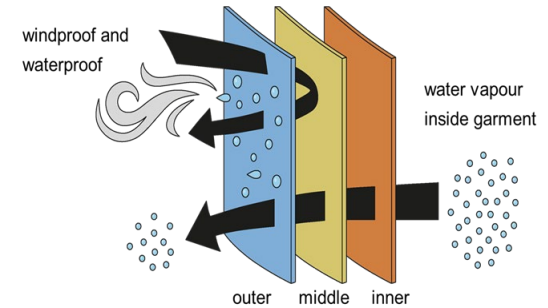
- choice of materials
- the amounts used of each material
- the way each material is structured within the new composite material.

Reinforced concrete is a composite material because it is made from concrete and steel, which are two different materials.

Reinforced concrete is strong in compression and tension. It is used for construction and for building.

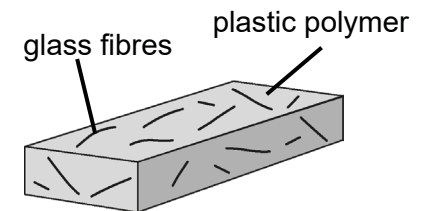


material	property
concrete	strong in compression
steel	strong in tension



Fibreglass is a composite material because it is made from glass fibres and a plastic polymer, which are two different materials.

Fibreglass is strong in tension, lightweight and stiff. It is used for making kayaks and car body panels.



material	property
glass fibres	strong in tension and lightweight
plastic polymer	weak in tension and stiff



Materials

Scientific methods

Scientists use a scientific method to collect high - quality data to explain observations and answer questions.

A scientist might choose any of the four scientific methods:

- Testing a hypothesis by changing variables e.g. smoother surfaces cause less friction to act on objects sliding over them.
- Testing a hypothesis without changing variables e.g. as age increases, the likelihood of developing arthritis increases.
- Experimenting by changing variables without testing a hypothesis e.g. testing different elements to classify them as metals or non - metals.
- Observing phenomena without changing variables or testing a hypothesis e.g. biologists observing cells or astronomers observing planets.

Measurement error

Random error is a measurement error that arises unpredictably from the experimental environment and cannot be controlled. As it is unpredictable, random error cannot be removed or corrected.

But the impact of random error can be minimised by taking multiple measurements, ignoring any anomalies and calculating a mean.

Conclusions

It is important that a conclusion is based on the observed data and trends without making over - generalisations that extend beyond the scope of the experiment. This makes the conclusion more reliable. E.g. when testing polymer strengths, a statement such as “polymer C is always stronger than polymer B” would be an over - generalisation.

Developing technology through scientific knowledge

Scientific advances have enabled workers in Science, Technology, Engineering, and Mathematics (STEM) fields) to further technology and industry by developing new tools and machines, and by making the production of goods in large quantities possible.

For example, being able to create new composite materials such as fibreglass has led to their use for car body panels, and these are mass produced, made in large quantities, every day.

Developing scientific knowledge through technology

Technology developments have allowed scientists to learn more about materials.

Technology	What it allows scientists to do
Electron microscope	See the structure of materials down to the level of each atom.
Computer simulations	Simulate how ceramics behave under different conditions.
Three- dimensional (3D) printing machines	Quickly produce prototypes and test new ceramic designs.

Advancements in technology have improved scientific research by providing scientists with many ways of collecting high - quality data and communicating.

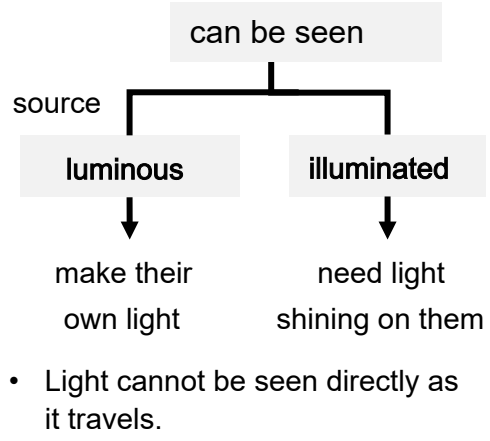
- Computer simulations allow scientists to test materials under different conditions.
- Cloud - based platforms (online tools) allow scientists all over the globe to communicate and collaborate.



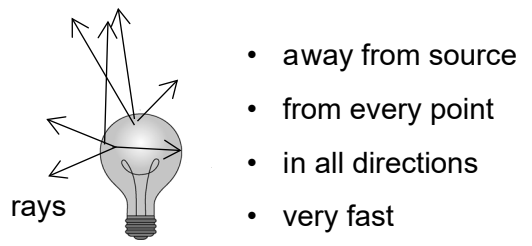
7.06: Sound and light



Describing light



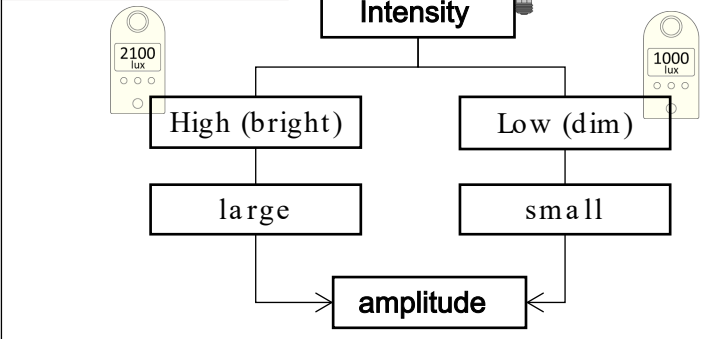
Light travels



Light is constantly emitted from a source that is 'on'.
 Light fills an enclosed space.
 Darkness is the absence of light.

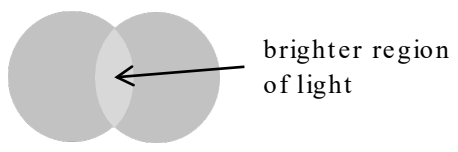
Light is the transfer of energy by the radiation pathway to its surroundings so that a region is lit up.

Brightness

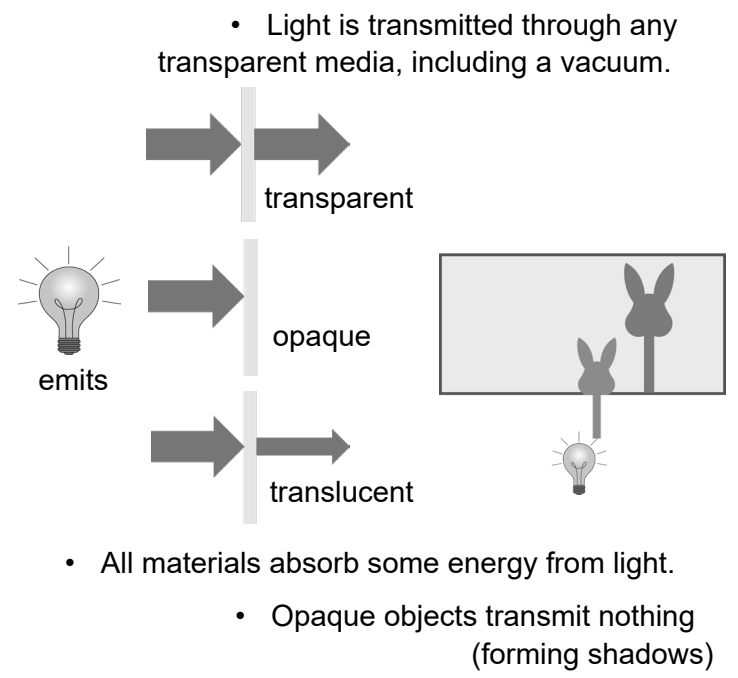


- Some sources transmit more energy away in a given time.
- Light spreads out from a source.
- Brightness decreases with distance.
- Light from multiple sources falling on a screen is brighter than one.

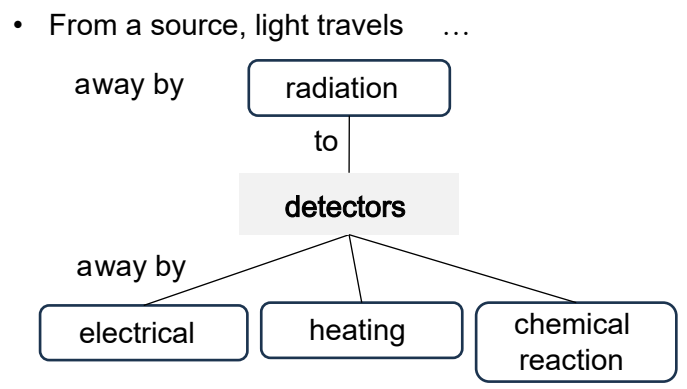
Light meter measures brightness in lux.



Different media



Energy pathways



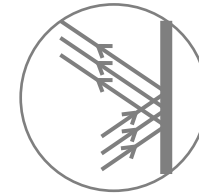
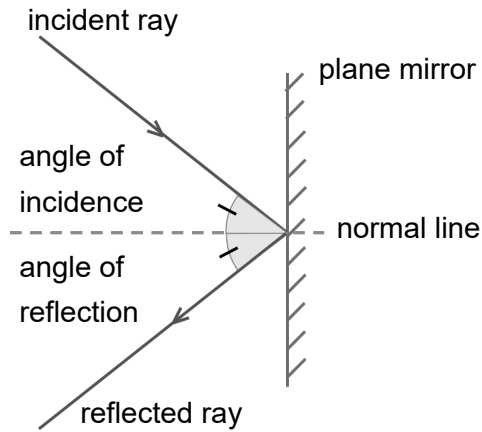
7.06: Sound and light



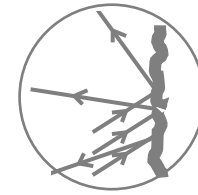
Light reflecting

- All surfaces reflect light and obey the **law of reflection**.

the angle of incidence = the angle of reflection



specular reflection

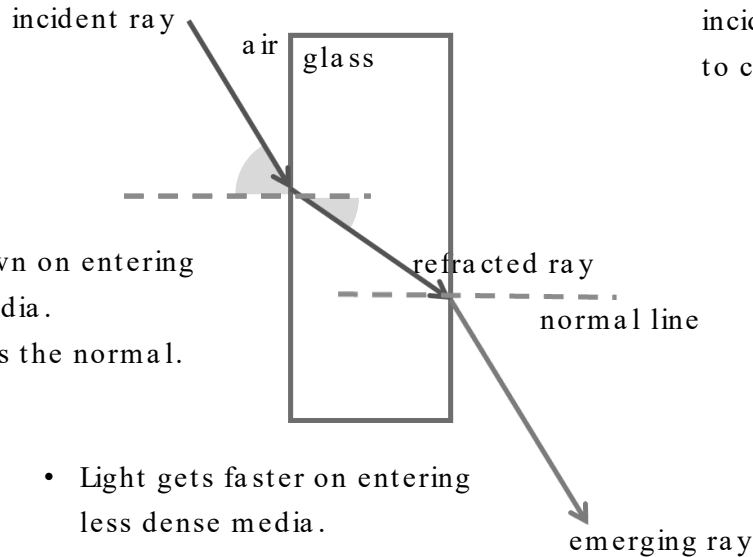


diffuse reflection

- Most surfaces reflect light **diffusely** (scatter it).

Light refracting

As the angle of incidence increases, there is more refraction.

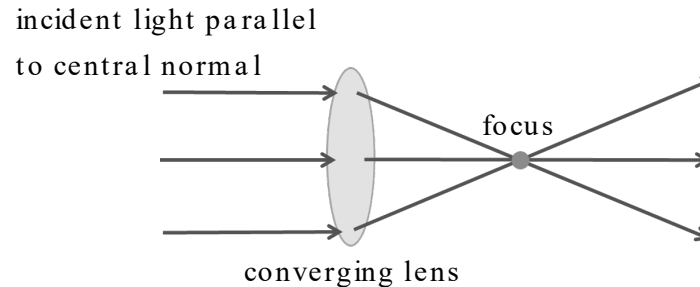


- Light slows down on entering more dense media.
- It turns towards the normal.

- Light gets faster on entering less dense media.
- It turns away from the normal.

Converging lenses form a focus and can form a clear image.

Lenses



- The focal length is the distance from lens to focus, or lens to image.
- Thicker lenses (more curved) refract more, have a closer focus and longer focal length.

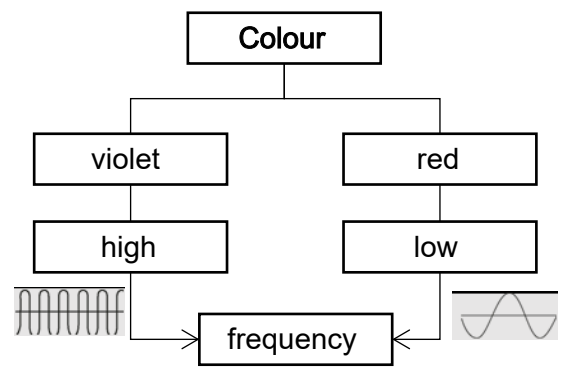
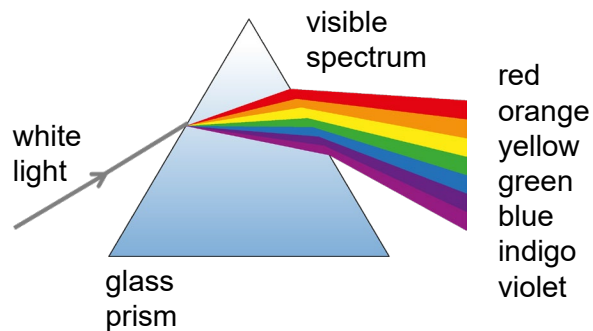


7.06: Sound and light



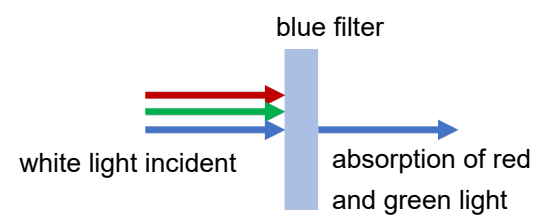
Coloured light

- Luminous objects emit light of particular colours.
- Most common sources emit white light.



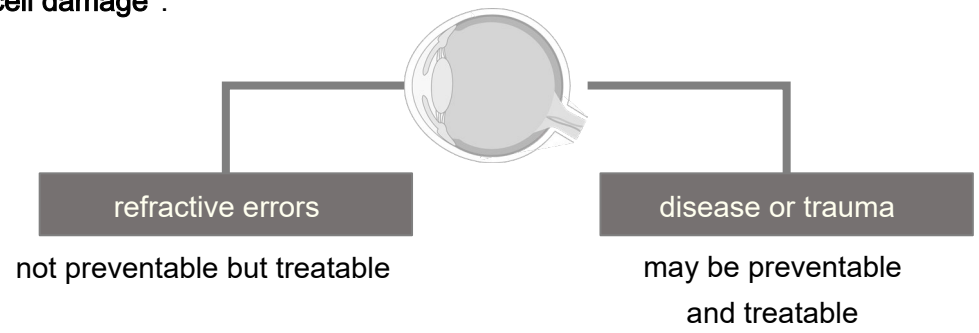
Coloured filters:

- transparent objects
- transmit own colour
- selectively absorb any other colour of incident light



Seeing differences

Many problems with our vision are caused by parts of the eye that are not the right **shape** or **size**, that have become **cloudy**, or due to **cell damage**.



People with low vision may use:

Long canes, guide dogs, talking books, Braille or other assisted devices.



Light from the Sun can be dangerous:

- Never look directly at the Sun.
- Wear sunglasses in bright sunlight.
- Protect the skin too.



7.06: Sound and light



Images

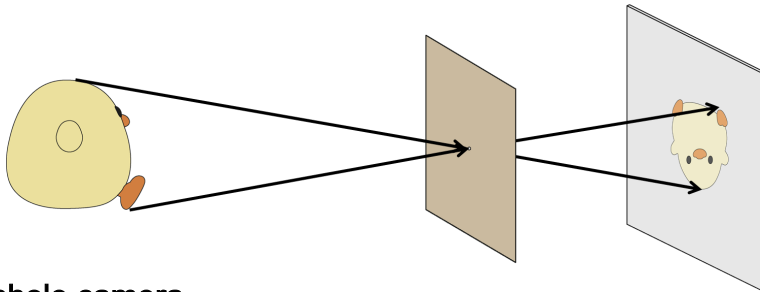


Image is:

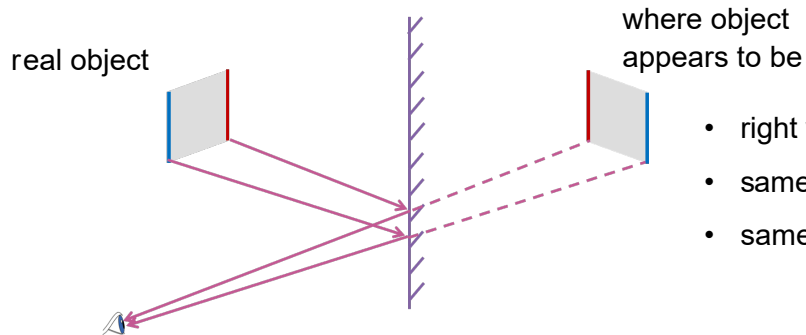
- inverted
- dim
- diminished.

Pinhole camera

- Some light from each point of the object facing, passes through the pinhole.
- The pinhole only allows a narrow beam through, from each point.
- Light from each point crosses over as it passes through the pinhole.
- Light from every point falls on the screen forming a complete image.

Mirror image

- Light from every point of real object reflects into eye.
- Brain interprets reflected light as originating from behind mirror.



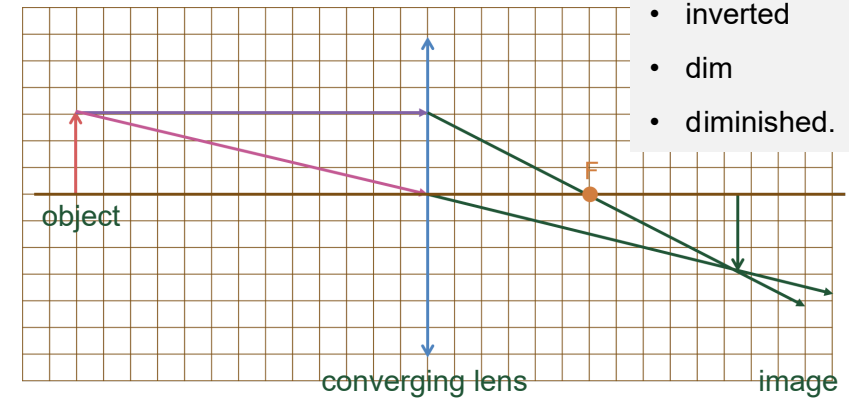
- right way up
- same size
- same distance

Images from lenses

- Some light from each point refracts through the lens.
- Light from each point arrives at specific points on the surface forming an image.

Image is:

- inverted
- dim
- diminished.



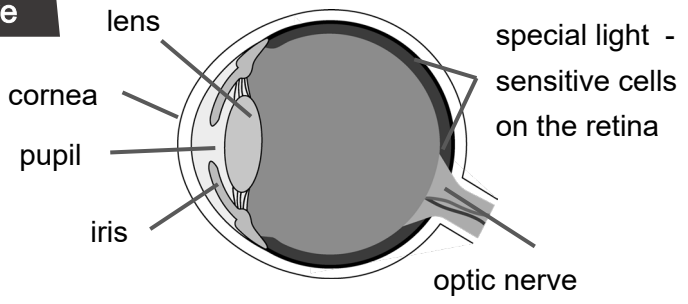
- A partially covered lens still forms an image, but dimmer.



7.06: Sound and light

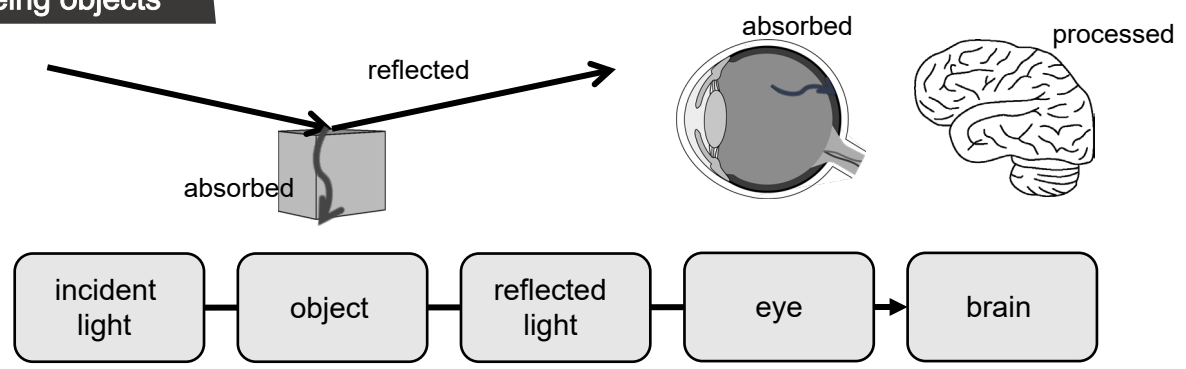


The human eye

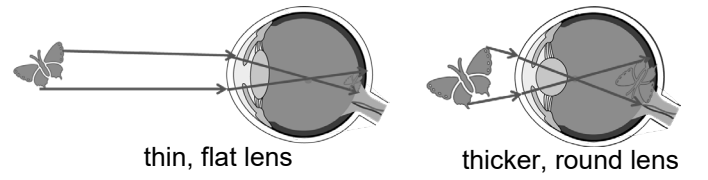


cornea	refracts light before it enters the eye
iris	controls the size of the pupil
pupil	lets light enter the eye
lens	refracts light to form an image
retina	made up of cells that detect light
optic nerve	carries electrical signals to the brain

Seeing objects



Seeing at different distances



The lens shape changes as needed.

Refraction errors of the eye

- short - sightedness
 - eye too long or the cornea too extended: focus in front of retina
- long - sightedness
 - eye too short or the cornea too rounded: focus behind the retina

Glasses to spread out the light before it enters the eye.

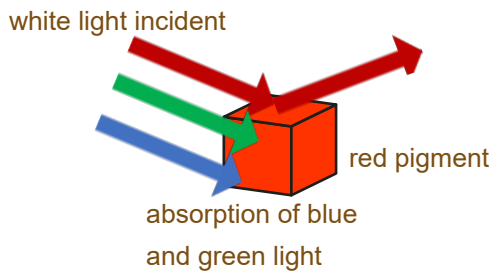


Glasses to converge the light before it enters the eye.



Seeing coloured objects

- If an opaque object is coloured, it has pigments which absorb specific colours.
- absorbs any colour different not in the pigment
- appears the colour of any scattered light



7.06: Sound and light

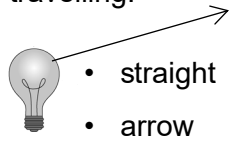


Scientific models

Representations of reality that can be used to explain observations

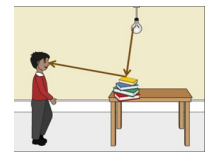
The ray model of light

- Rays are imaginary lines, **drawn to represent** the path light is travelling.
- From an infinite number, **a few** are chosen to be drawn.



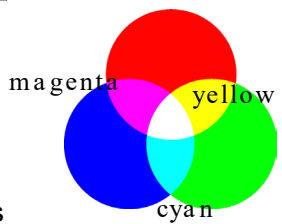
The 'passive-eye' model of vision

- Objects emit or reflect light into the eye.



The 'three primary colours' model of human colour vision

- eye has three types of sensor cell
- detect: red, green and blue, the primary colours of light
- directed at a white screen, combinations of primary colours can appear as secondary colours or white (and more)



The pinhole camera as a model for the eye

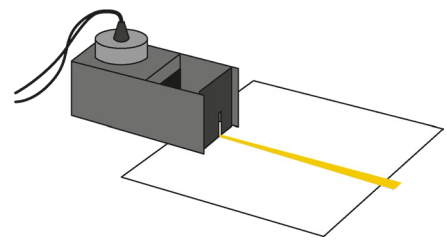
- Light enters through the pinhole similar to the pupil.
- Light 'crosses over' at the pinhole, similar to the lens.
- Light from the object falls on the screen, similar to the back of the eye.



Observing light

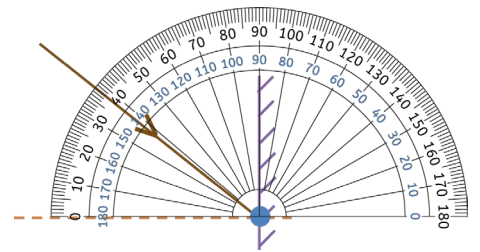
Using a raybox

- Raybox and comb, connected to a power supply
- Draw crosses (avoiding likely measurement errors).
- Plot and label rays.



Measuring angles

- centre at vertex
- scale starting at 0 ° on normal line
- read up from 0°



Trusted scientific research

High- quality data

- Well- chosen method
- Appropriate resolution
- Multiple measurements
- Repeatable
- Reproducible
- Appropriate range
- Systematic intervals

Trustworthy conclusions

- Process and display collected data
- Describe data from table or chart
- Explain interpreted data

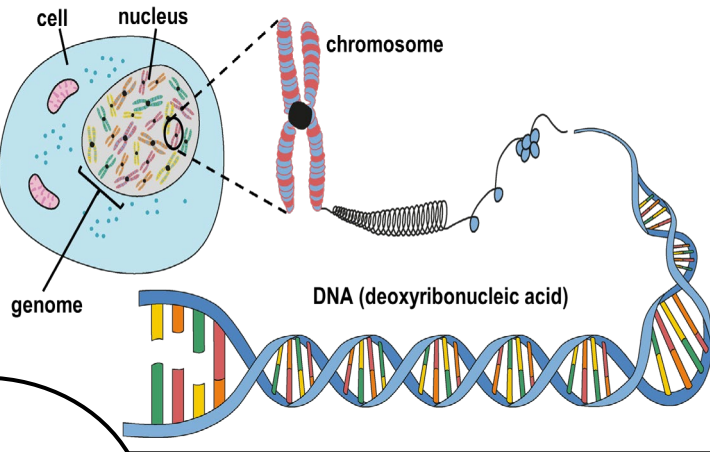


Life Cycles

- Reproduction is the process of making new living organisms known as offspring, which happens at some point in an organism's life cycle.
- Offspring inherit characteristics from both parents through their genomes, which contain the complete set of genetic information.
- Offspring usually look similar but not identical to their parents because they inherit half of their genome from each parent.

Genome, Chromosomes, DNA and Genes

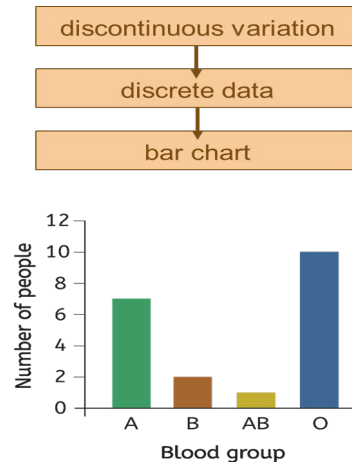
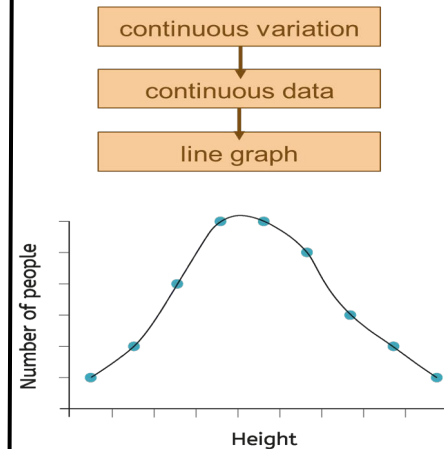
- The genome is made of a chemical substance called DNA.
- DNA is a natural polymer and has two strands that are connected across the middle and twisted to form a double helix structure.
- DNA is coiled into structures called chromosomes, which are stored in the nucleus in plant and animal cells.
- Different organisms have different numbers of chromosomes.
- Human body cells each contain 23 pairs of chromosomes, half of which are from each parent.
- Each chromosome is divided into sections of DNA called genes.
- The hierarchy in size order from smallest to largest is:
gene → DNA → chromosomes → genome.
- All the DNA in a cell, packed into chromosomes and made up of genes, together forms the cell's genome.



Scientific methods led to the discovery of DNA's structure in the 1950s. Rosalind Franklin's X-ray images revealed its spiral form, which helped Watson and Crick determine the double helix structure

Variation

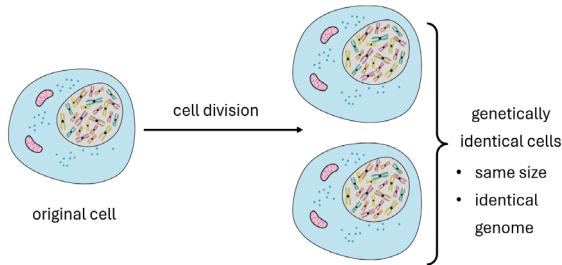
- A species is a group of organisms that can reproduce with each other to produce offspring that are fertile.
- Variation is the differences between organisms of the same species.
- Genetic variation is caused by an offspring's inherited genome.
- Environmental variation is caused by an organism's environment or by an organism's lifestyle.
- Variation within a species is important for adaptation and survival.
- Discontinuous variation is variation that that can be classified into specific categories (e.g. eye colour, blood type, rolling tongue, shoe size).
- Continuous variation is variation that can have a range of values (e.g. body mass, plant height, hand span, foot length).
- Discontinuous variation tends to be determined by a single gene or just a few genes. Continuous variation tends to be determined by many genes and the environment.
- Data on continuous and discontinuous variation can be classified as quantitative, including discrete (whole numbers, counted) and continuous (measured values), or qualitative, which consists of categoric data (descriptive labels).



Life Cycles

Growth and Development

In multicellular organisms, growth is when an organism increases the number of cells it has. When multicellular organisms grow, new cells are made from existing cells by:



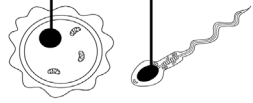
- cell enlargement – the cell gets bigger.
- cell division – the cell divides to form two genetically identical cells.

As an organism develops, specialised cells are created to carry out specific functions.

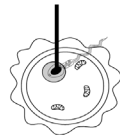
Sexual Reproduction and Fertilisation in Humans

23 chromosomes

23 chromosomes



fertilisation - nucleus of egg fuses with nucleus of sperm

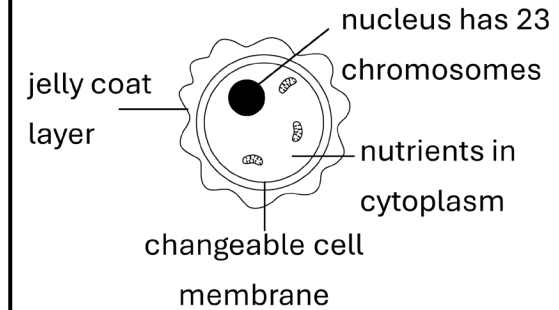
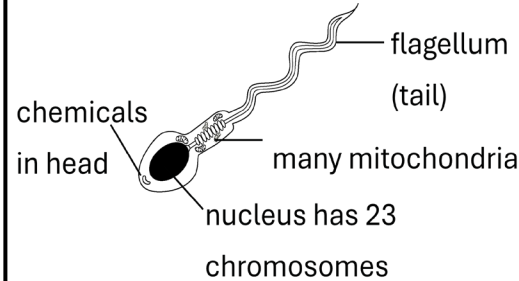


resulting in 46 chromosomes

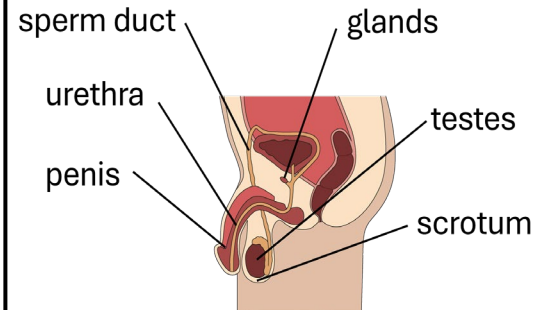
Technological advances like digital microscopes allow scientists to capture high - resolution images and videos of eggs, sperm, and the zygote during cell division.

- Fertilisation happens if the egg cell meets and joins with a sperm cell in the oviduct. The fertilised egg (zygote) attaches to the lining of the uterus (implantation).
- The sperm and egg each contain 23 single chromosomes.
- The fertilised egg (zygote) has 23 pairs of chromosomes.
 - During fertilisation, the genomes of both parents combine. This creates genetic variation.

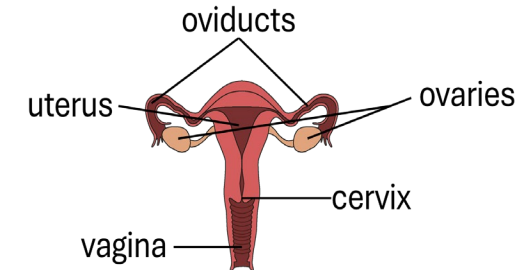
Gamete Adaptations (Egg and Sperm)



Male and Female Reproductive Systems



- testes – make sperm
- scrotum - holds the testes at the right temperature
- sperm duct – carries sperm from the testes
- glands – produce fluid that mixes with the sperm
- urethra – carries semen (and urine)
- penis - where semen (containing sperm) leaves the body



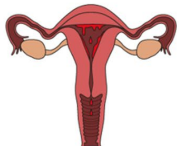
- ovaries - release eggs
- oviducts - carry the egg from the ovaries to the uterus
- uterus - where the baby develops
- vagina - sperms enters and the baby is pushed out
- cervix – ring of muscle that keeps the baby in place

Life Cycles

Puberty and the Menstrual Cycle

- Adolescence is a period of emotional and physical changes known as puberty.
- Puberty affects both males and females, with some changes specific to each sex.
- Both males and females experience changes such as underarm and pubic hair growth, increased body odour, emotional changes, and a faster growth rate.
- Males also go through voice deepening, enlargement of the testes and penis, sperm cell production, shoulder and chest widening, and facial and chest hair growth.
- Females develop breasts, start ovulating and having menstrual cycles, and experience hip widening.
- The menstrual cycle is an approximately 28 - day, hormone regulated process that prepares the female body for pregnancy, although some women may have cycles ranging from 21 to 35 days. The menstrual cycle begins at puberty, stops during pregnancy, and ceases completely after menopause, typically around age 50.

Days 1 - 5



Days 6 - 13



Day 14



Days 15 - 28



Days 1 – 5: Menstruation occurs as the uterus lining breaks down and is lost.

Days 6 – 13: The uterus lining builds up and thickens.

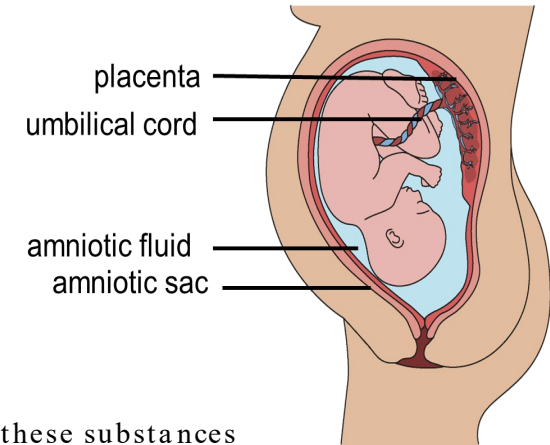
Day 14: Ovulation occurs and an egg is released from the ovary

Days 15-28: If the egg is fertilised, the uterus lining is maintained for implantation. If the egg is not fertilised, the cycle continues.

Pregnancy and Foetal Development

Fertilisation → Zygote → Embryo → Foetus → Baby → Birth

- A foetus develops in the uterus.
- The foetus relies on its mother for:
 - protection against bumps and temperature changes;
 - oxygen for respiration;
 - nutrients (food and water).
- The foetus also needs its waste substances to be removed.
- The foetus is protected by the uterus and the amniotic fluid, contained in the amniotic sac.
- The placenta provides oxygen and nutrients, and removes waste (e.g. carbon dioxide) by diffusion of these substances between the mother's blood and the foetus' blood.
- The umbilical cord joins the placenta to the foetus and transfers substances between the two.
- Substances like alcohol, cigarette chemicals, and drugs can cross the placenta by diffusion, affecting the developing baby.

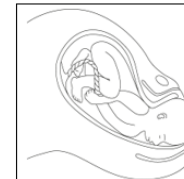


Birth



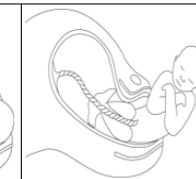
Stage 1

Uterus contracts and the cervix opens wider



Stage 2

Uterus contractions become stronger, and the baby is pushed out head first. The umbilical cord is cut.

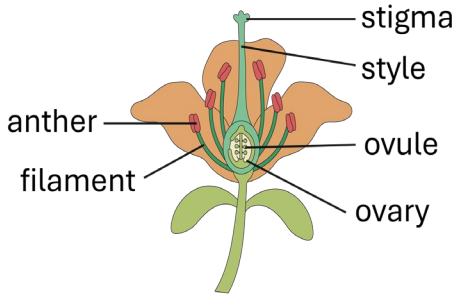


Stage 3

Uterus muscles contract and the placenta is pushed out of the vagina.

Life Cycles

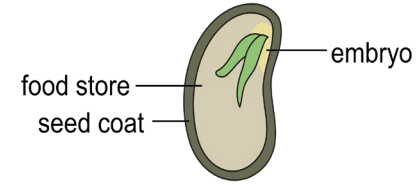
Plant Reproductive System and Pollination



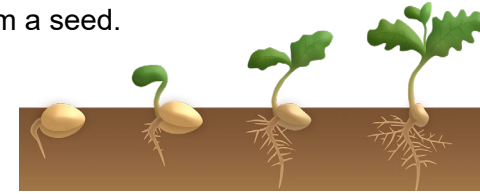
Pollen grains need to move from the anther of one flower to the stigma of another flower. This is called pollination.

Plants can be pollinated by wind or pollinators (e.g. bees).

- The ovule thickens and hardens to form the seed.
- The seed coat protects the developing embryo.
- The food store provides nutrients for the developing embryo.
- The ovary matures to form the fruit.



- Germination is the development of a plant from a seed.
- Water, oxygen and a suitable temperature are needed for a seed to germinate.
- During germination, the seed absorbs water and swells, causing the hard seed coat to split. The roots grow downwards, and shoots start to grow upwards. The first leaf starts to appear, and more leaves follow.



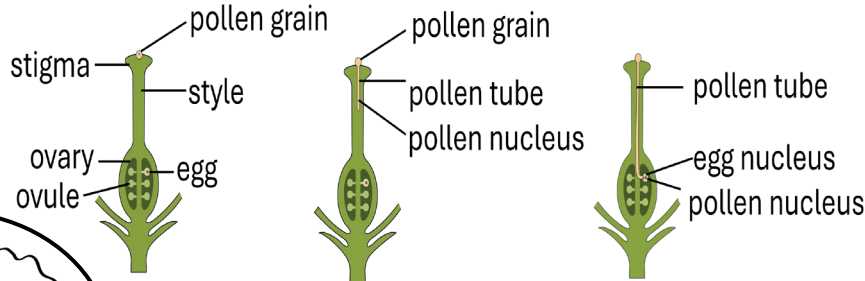
Name of structure	Male or female?	Function
stigma	female	catches the pollen (it is sticky)
style	female	connects the stigma to the ovary
ovule	female	produces the eggs
ovary	female	contains the ovules
anther	male	produces pollen
filament	male	holds up the anther

Seed Dispersal

- Seeds must be dispersed from each other and from the parent to reduce competition for light, water, space and soil minerals.
- **Wind** - Seeds are light and have a large surface area from hairs or a winged structure (e.g. dandelion, maple).
- **Animals** - Brightly coloured and tasty fruits are eaten by animals and seeds are deposited in their waste (e.g. berries, tomato). Animals also collect and bury seeds (e.g. acorn). Seeds can also attach to the animal's surface.
- **Explosion** – Seeds are contained in a pod that bursts open when ripe, throwing the seeds away from the plant (e.g. pea pod).

Fertilisation and Germination in Plants

Pollen grains land on the stigma and grow a pollen tube that delivers the pollen nucleus to the egg nucleus inside the ovule. A zygote is formed, which develops into an embryo.



Asexual Reproduction

- Some plants reproduce asexually, creating identical offspring without pollination. Methods include runners, bulbs and tubers, resulting in clones that have the same genome and characteristics as the parent plant.
- Unicellular organisms, like bacteria, also reproduce asexually by copying their genome before dividing into two genetically identical cells.
- Sexual reproduction promotes genetic variation, enhancing adaptation and disease resistance. Asexual reproduction allows rapid population growth but lacks diversity, making populations vulnerable to environmental changes.

Year 7
Networks

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



A **network** is where devices are connected together usually by cable or Wi-Fi. This could be a few computers in a room, many computers in a building or lots of computers across the world.

Wired and Wireless data transmission

A computer network can be either wired or wireless.

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



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

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



Internet services

There are a range of services provided by the internet. These include:

- World Wide Web
- Email
- Online gaming
- Instant messaging
- Voice over IP (VoIP) –audio calls
- Internet of Things (IoT)
- Media streaming (e.g. watching Netflix online)

The rules for each service are different. As a result, a different protocol is used.

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

Network Hardware—physical equipment required to set up a network

Hub—Connects a number of computers together. Ports allow cables to be plugged in from each connected computer.

Router—Used to connect two separate networks together across the internet

Server—A powerful computer which provides services to a network

Cable—Used to connect different devices together. They are often made up of a number of wires.

PROGRAMMING 1 - SCRATCH

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

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

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

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

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

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

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



Count controlled iteration will execute the commands a set number of times. Example: "perform 200 star jumps"
Condition-controlled iteration will execute the commands until the condition you set is no longer being met. Example: "perform star jumps until 3pm"

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

SCRATCH



DIGITAL SKILLS

IMPACT OF TECHNOLOGY

Cyberbullying is similar to bullying but tends to occur online. Cyberbullying can come in many forms. Some examples are:

- Threatening someone to make them feel scared
- Harassing someone by repeatedly sending them messages
- Ruining somebody's reputation
- Excluding someone from a group
- Stealing someone's identity and pretending to be them
- Publicly displaying private images or messages

Key Words

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



STOP
cyberbullying

PASSWORDS
are like underpants



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

Do you really want to send that?

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

Using technology appropriately, carefully and positively leads to positive digital citizens.

Digital citizenship to the responsible use of technology by anyone who uses computers, the Internet and digital devices to engage with society on any level.

Secure passwords

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

Where to get help

Talk to a trusted adult
<https://www.ceop.police.uk/>
<https://www.childline.org.uk/>

Design and Technology . polymers

Literacy / key words

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 to be manufactured using Computer Aided Manufacture (CAM) Computer aided manufacture is very fast and accurate and requires less human intervention.

CAD

Techsoft2d 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

Design and Technology . Timbers

Literacy / key words

Softwood	Physical s and Working properties	Manufactur ed board	Physical 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	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
Pine	Pale coloured with aesthetically pleasing grain. Lightweight, easy to form, used for construction and decking	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
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	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
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		



Extra - Read/watch/do

Watch:
FSC



<https://www.youtube.com/watch?v=HBScUXDIF90&t=25>

You will be assessed on

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

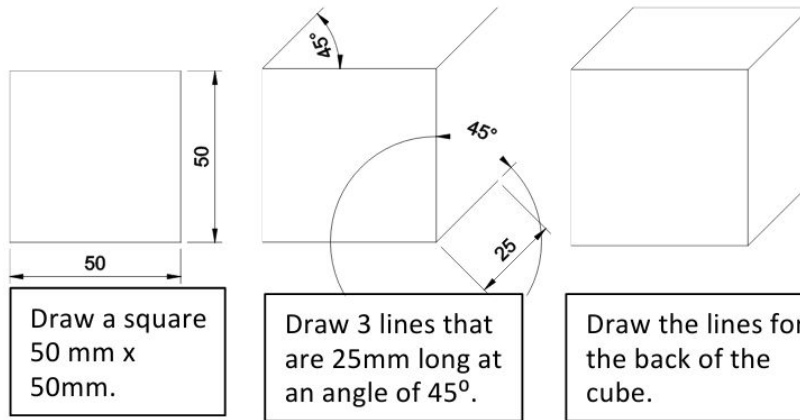
Links to curriculum

Make

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

Literacy / key words

Oblique drawing

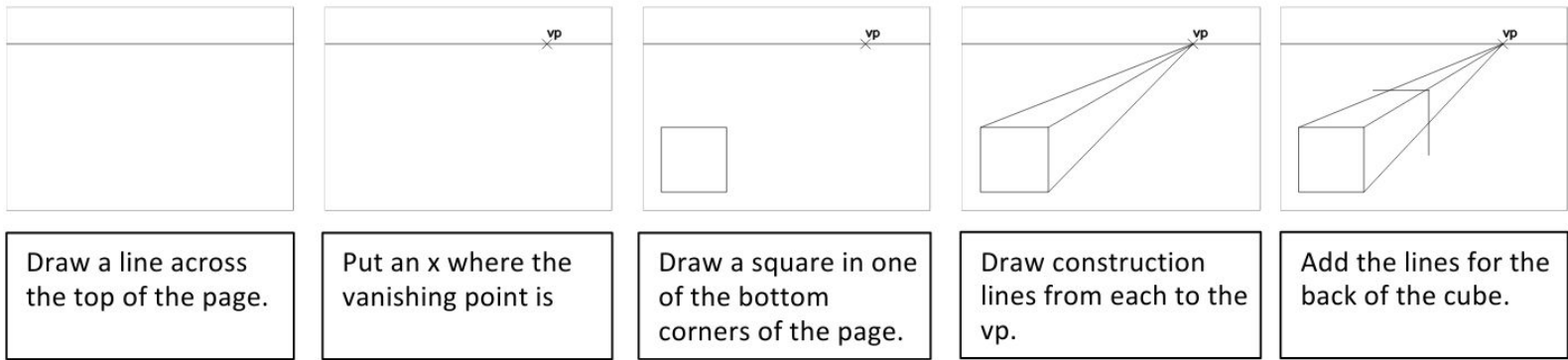


Draw a square 50 mm x 50mm.

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

Draw the lines for the back of the cube.

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.

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.



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