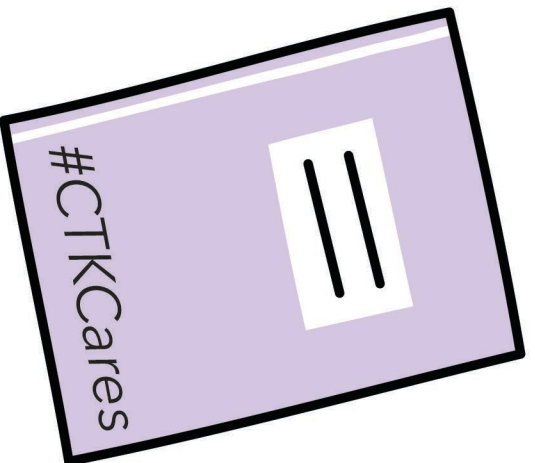
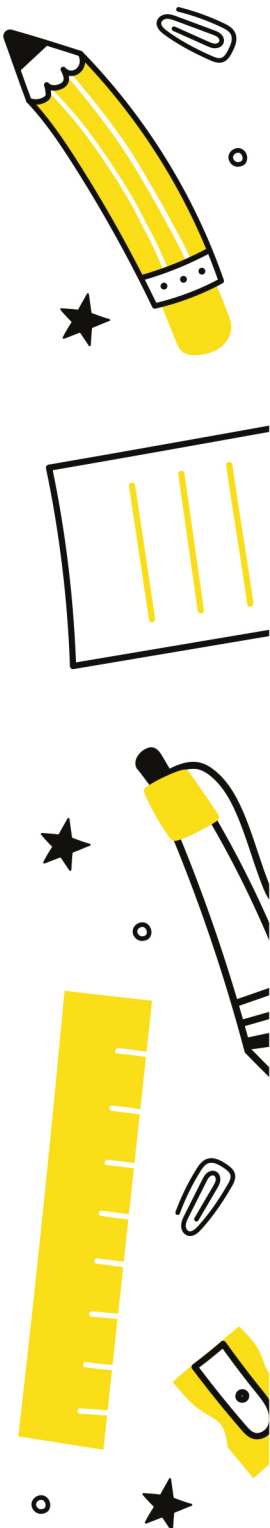




CHRIST THE KING
**KNOWLEDGE
ORGANISER**
Year 7 **PENTECOST**
(Term 3)





Knowledge Organisers

We use knowledge Organisers at Christ the King to help all students achieve. Knowledge Organisers improve your confidence by helping you to understand how to learn and revise. We are building a seven-year revision strategy that supports you to remember the core and powerful knowledge that is required to be successful in each subject.

The Ebbinghaus Forgetting Curve demonstrates that knowledge is lost over time if it is not revisited. A simple model for memory involves working memory and long term memory; working memory is limited, and can very easily become overloaded, whereas long-term memory is effectively limitless. You can support your limited working memory by storing key facts and processes in your long-term memory. Research evidence indicates that regular recall activities, known as retrieval practice, are an effective way of ensuring that knowledge is committed to long-term memory

At the start of each term, you will receive a knowledge organiser booklet that contains content for all subject areas. You will use your knowledge organiser in your lessons, in tutor time, and during homework tasks. An important aspect of your revision for assessments and end-of-year examinations will be to use the knowledge organisers for self-quizzing. If this core knowledge is secured, you will be in a strong position to use and apply this knowledge in a range of contexts. You will be given your knowledge organiser in a plastic wallet along with a homework booklet – the expectation is that you bring this to school every day – **it should be placed on your desk in every lesson**, ready to use. Geography and History highlight the essential 'golden knowledge' in yellow to support your learning.

How to use your Knowledge Organiser

The best way to use your knowledge organisers is to regularly use one of our Core 4 Revision strategies as part of your home learning. These strategies will be explained to you in more detail in tutor time, by your class teachers and as part of your Personal Development lessons.

o **Flash Cards:** Use the information from your knowledge organiser to create flashcards – these could be double sided, with a question on one side and the answer on another, or a keyword on one side and the definition on the other.

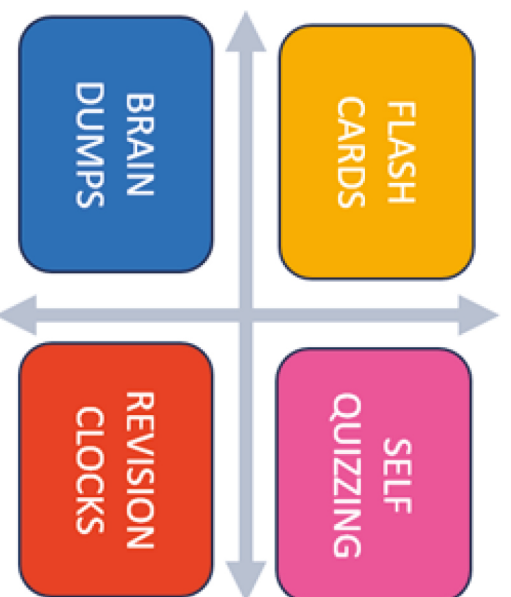
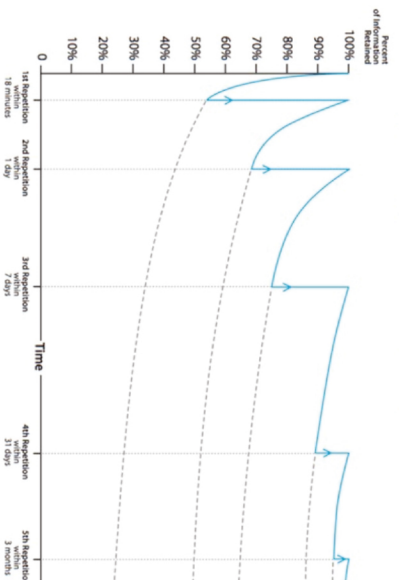
o **Self Quizzing:** There are different ways you can self-quiz:

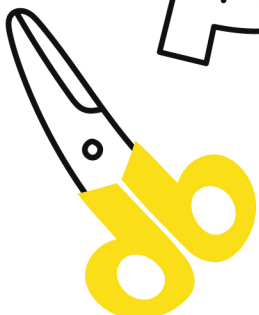
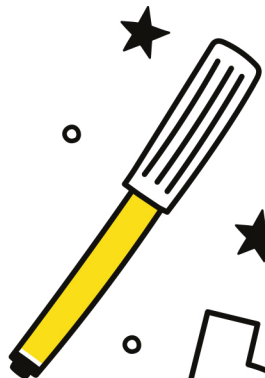
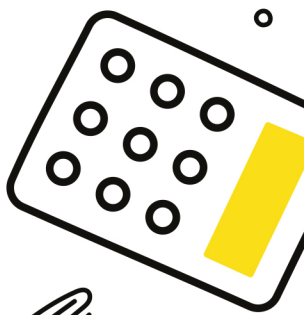
- Look, cover, write, (say), check
- Create gaps fills
- Create questions for the information you want to learn and then answer them from memory

o **Brain dumps:** These are a small but powerful revision strategy which help makes the information 'sticky' so that it goes into your long-term memory, ready for you to recall it into your working memory. They are good to use at the end of topics. An effective brain dump involves you writing down everything you can about a topic you want to revise from your memory. You then check the information against the information on your Knowledge Organiser – you then mark your work and add any missing information onto your brain dump in a different colour pen, so that you know which information you need to revisit, either through using flash cards or self-quizzing.

o **Revision Clocks:** Revision Clocks are a blank clock shape – divided into 12 segments. In each segment put a sub-heading and then include the information linked to that. They are effective as they allow you to 'chunk' up the core knowledge from the topic into the segments. You can use colours and pictures to make the information more 'sticky'.

Rate of Forgetting with Study/Repetition





Homework Schedule

You should complete at least one hour of Home Learning per school day.

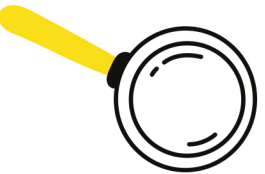
This will consist of:

- Knowledge Organiser and Online Learning as directed by your teachers.
- If you have no tasks set, carry out Knowledge Organiser activities as per the Knowledge Organiser timetable below.
- Two periods of 20 minute reading each week.

Week 1					
20 Minutes Per Subject	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	English	Science	Maths (Sparx)	Maths	English
Subject 2	RE	PE	RE	Science	Geography
Subject 3	Music	History	Technology / IT	MFL	Art

Week 2					
20 Minutes Per Subject	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Science	English	English	Maths (Sparx)	Science
Subject 2	RE	Maths	RE	Drama	Geography
Subject 3	Music (Practical)	History	Technology / IT	MFL	Art (Practical)

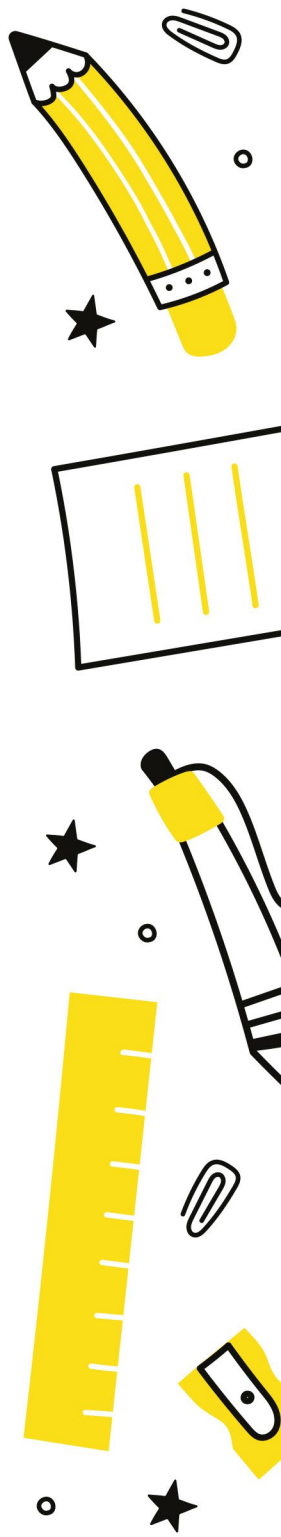
Read 20 minutes a day and you'll read 1,800,000 words per year.



Reading for 6 minutes a day reduces stress by 68%.



Children learn 4,000 to 12,000 words per year through reading.



What are the homework expectations?

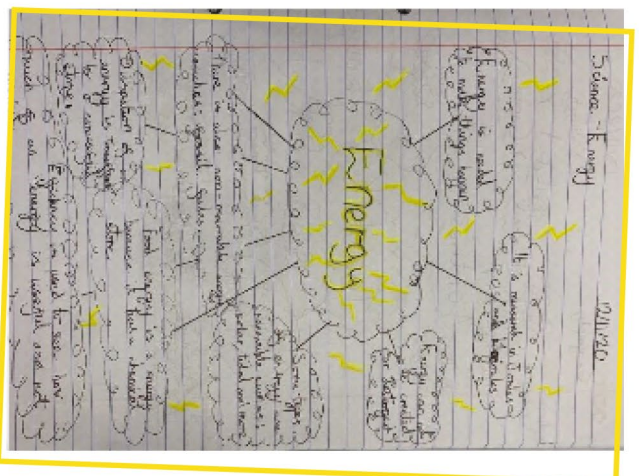
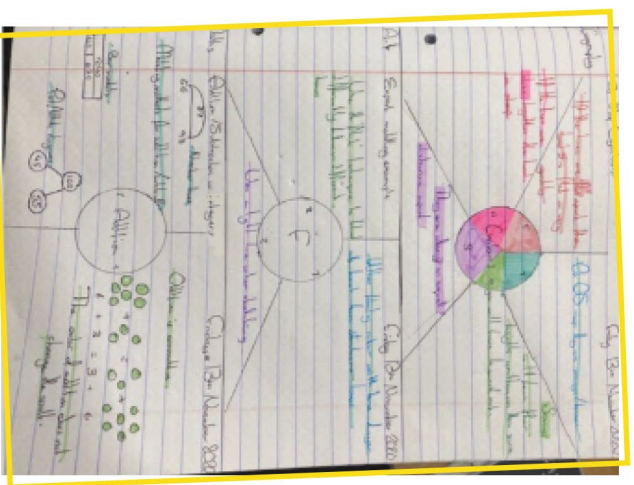
Each homework must meet the following 5 requirements:

- Write the complete title and date in full e.g *Wednesday 7th June 2023* on each page and underline.
- You should include minimum of words to summarise the topic. Do not copy the words from the text.
- Make full use of the page for each topic by scaling your notes and images appropriately to use all the space.
- You must include diagrams, sketches, or cartoon doodles to visually represent the topic, try to use humour.
- Highlight key words and phrases, using underlines and highlighter pens, and explain technical terms.

How should I present my work?

Please remember that the same rules apply to the presentation of your homework as applies for your class work: **dates and titles** (which should be the name of the subject) **need to be underlined with a ruler** and you should **present your work as neatly as you are able to**.

If you are self-quizzing correctly, there should be **evidence of green pen on your page**. Here are some examples of how to set out your work:



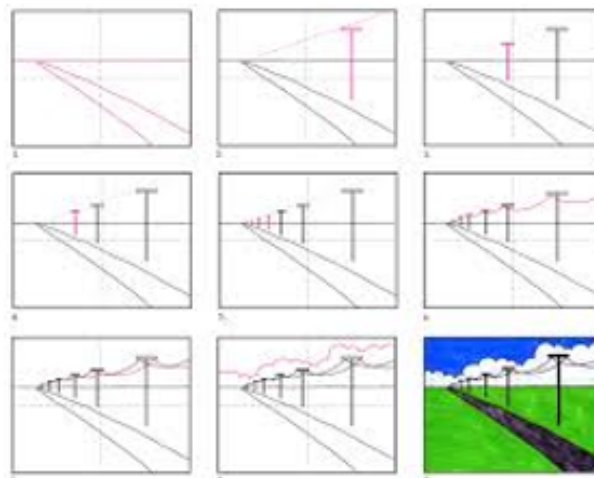
DON'T FORGET!

Always record
the date, topic,
and page
number in
your Home
Learning
Book!

A **Cityscape** in Art can be a type of **landscape** which can include buildings and streets often found in 'urban' towns and cities. Cityscape Art can take the form of drawings, paintings and photographs

Key words

1.Perspective	a technique which attempts to create the illusion of depth and 3 dimensions in a drawing or painting.
2 Horizon line	used to show where the land disappears in the distance
3 Vanishing point	used when drawing in perspective to create a 3D effect
4 Background	usually at the top and back of the painting or drawing and appears to be further away.
5 Foreground	can be seen at the front or bottom of a landscape which appears to be closer.
6 Composition	how you arrange and place the different parts of a piece of artwork
7 Realism	
8 Guidelines	light pencil lines which sketch out the basic image
9 Narrative	Can be used in art to help describe



Step by step guide of drawing a street scene using one point perspective

Order of drawing

1. Horizon line
2. Vanishing point
3. Lines which meet the vanishing point
4. Vertical lines
5. Add details



Hannah Sawtell – (born 1971)
Nottingham based artist.

She creates cityscape illustrations have a **Pop Art** feel and depict everyday scenes from local areas in Nottingham.






L.S. Lowry- (1887- 1976) born Salford, Manchester.

Lowry painted mostly industrial scenes of the North West of England. He developed a unique realist style and is most famous for his 'match stick' looking

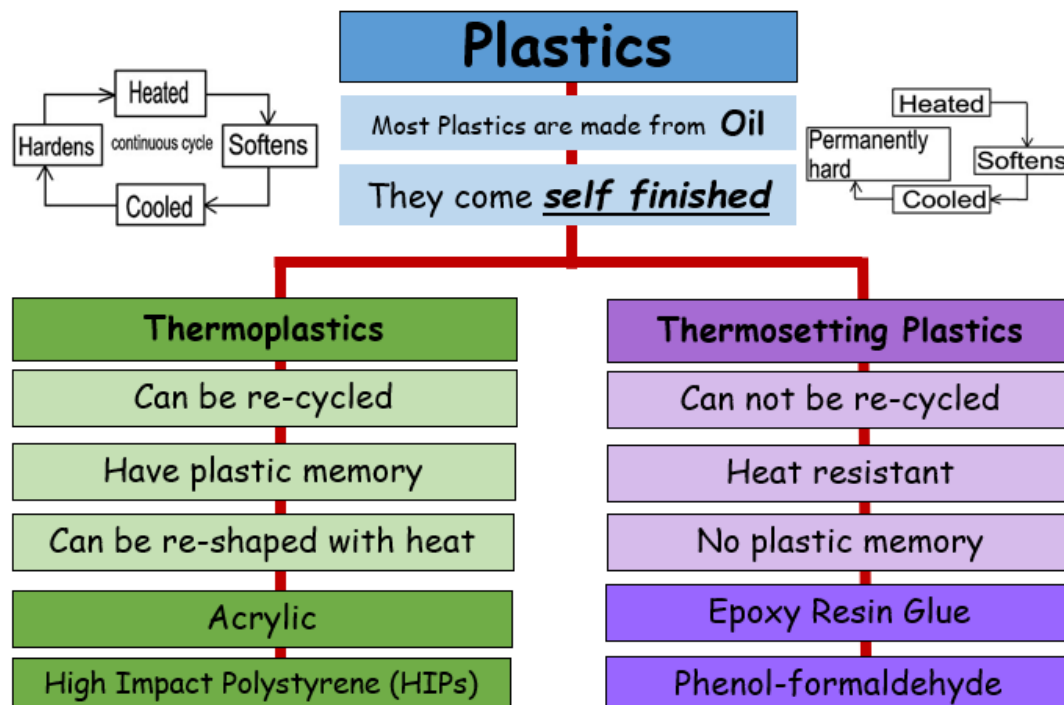




Key words	
1. Thermoplastic	Polymers that can be softened through heating before being processed and then left to cool and harden. Once cooled, they show no changes in chemical properties, meaning they can be re-melted and re-used several times.
2. Thermoset	A polymer-based material that is insoluble and non-melting
3. Acrylic	A clear, strong, stiff plastic. Acrylic is available in many colours.
4. Jig	A device that holds a piece of work.
5. Marking out	the process of marking lines and positions on piece of work.

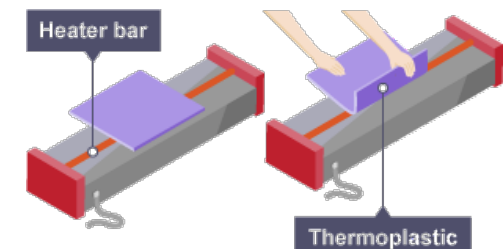
Tools		
Try Square		Used for marking out and checking 90° angles on wood, metal or plastic.
Coping Saw		A saw used to cut wood and plastic. Its thin blade makes it ideal for cutting curved lines.
File		A file is a tool used to remove fine amounts of material from a piece of work.

Know your safety signs



Line bending:

Once the acrylic is cut it can be bent. It needs to be heated to around 150 to 170 °C to bend without cracking, after cooling the bend produced remains the same. A Jig can be used to ensure the bend is accurate.



Process of converting oil to plastic

Extraction	Raw materials, such as crude oil, are extracted from the ground.
Transportation	Transport oil to the refinery.
Refined	Crude oil is separated into liquids and gases.
Polymerisation	Polymerization occurs, which is just a term for converting gases into polymers.
Compounding	The last step is compounding, where different materials are blending together to make plastics.



1. Key word	Definition
1. Fibre	A fibre is the smallest element of a fabric; it looks like a human hair.
2. Fabric	Textile fabrics are woven or knitted from yarn , which is made from fibres .
3. Seam	This is the join where two or more pieces of fabric meet. An unfinished seam leaves the edges open to fraying.
4. Renewable	This means that it can be replaced by new growth so that it does not run out.
5. Fossil fuels	Non-renewable sources such as coal, coal products, natural gas, crude oil and petroleum products.
6. Sustainable	They are replaced at a rate equal to or greater than the rate at which they are used).
7. Bio-degradable	The ability for a material to be broken down naturally by the organisms in an ecosystem.
8. Degradable	They can be broken down into very small parts.
9. Standard components	These are a range of components that can be bought ready made such as zips, buttons and Velcro.

2. Equipment

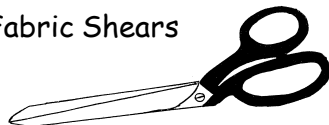
Embroidery
Scissors



Iron



Fabric Shears



Needle



3. Fibres come from several sources and can be either:

Natural



From plants or animals.



Plants – Cotton and Linen.
Animals - Silk and Wool.

They are renewable, sustainable and biodegradable.



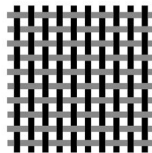



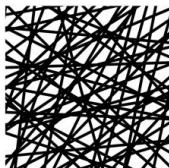

Synthetic



Manmade from **fossil fuels** -coal, oil and gas.

Nylon, Polyester, acrylic.

Cannot be replaced, does not decompose and contributes to environmental problems if they end up in landfill.

Construction	Description	Properties and Examples
Weaving  woven	Woven fabrics are made by interlacing two sets of yarn at 90° angles to each other. The weft runs along the width of the fabric and the warp runs along the length of the fabric.	Woven Fabrics are strong and stable they are used to make: 
Knitting  knit	Weft knitting can be made by hand or machine using yarn that forms interlocking loops across the width of the fabric. Warp knitting is made by machine that forms vertical interlocking loops.	Knitted fabrics are stretchy , comfortable and warm to wear they are used to make: Clothing, such as jumpers and cardigans. 
Bonded  non-woven	Bonded fabric is made from webs of fibres that are bonded together with glue, heat, stitches or needle punching. Felt is made from matting wool fibres together using moisture, heat and pressure.	Bonded fabrics do not fray but are weak , they are used to make: 



Adding Colour to Fabric:

Most fabrics start out as beige or white (loomstate).

There are 2 main ways to add colour to textiles – **Printing and Dyeing**

Printing



Printing involves pressing a pattern directly on to the fabric. This can be done by machine or by hand.

There are many ways to do this:

- Block Printing
- Screen Printing
- Roller Printing
- Transfer Printing
- **Sublimation Printing**



Dyeing



Fabric dyeing involves soaking fabric in a dye bath so that it absorbs the colour into the fibre.

There are many ways to do this:

- **Tie dye**
- Batik
- Dip dye



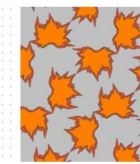
Applique

Applique is where fabric is sewn on to another piece of fabric using hand or machine stitches. It is mainly used to add decoration and colour, but can also have a function, for example to strengthen or repair the knee area on children's trousers.

Biomimicry

Biomimicry involves looking at nature for inspiration to solve engineering problems and to develop innovative new designs for products and architecture.

BURR → **VELCRO**



We can also be inspired by nature when considering the patterns and shapes of products.

Fairtrade

Cotton is one of the world's biggest crops. As many as **100 million rural households** (90 percent of them in lower-income countries) rely on cotton production for their livelihoods.

Fairtrade ensures that farmers in lower-income countries get a fair price for their produce. It also aims to improve pay, working conditions, rights for workers as well as more environmentally friendly and sustainable products.



Embroidery	Description	Image
Running Stitch	This is a small even stitch that runs back and forth through the cloth, without overlapping.	
Back Stitch	Individual stitches are made backwards to the general direction of sewing. It is more durable than running.	
Cross Stitch	A type of counted embroidery that uses little crosses or 'x's to create a tiled pattern or design.	
Blanket Stitch	This stitch reinforces the edges of fabrics to prevent them from fraying. It is also used to provide a decorative finish.	

Material Properties

Cotton - Natural	Grows on a cotton plant in a ball called a boll, fibres are combed and spun into a yarn.	Takes dye well, soft, strong, absorbent, recyclable, used in clothing.
Polyester - synthetic	Can be woven or knitted, thick or thin and available in a variety of colours, can be blended with other fibres for better properties.	Strong and versatile, it holds colour and washes well.



YEAR 7 MACBETH

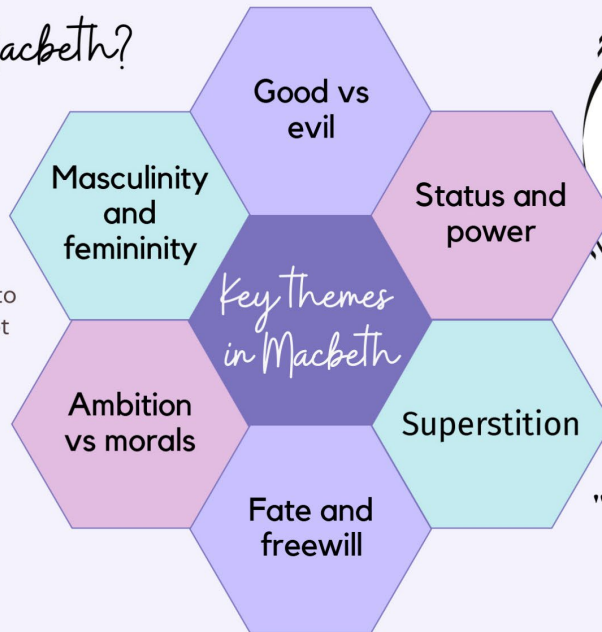
WHAT AM I
DOING
WELL ?

WHAT DO I
NEED TO DO
TO IMPROVE ?

WHAT TOOLS CAN WE USE
TO CREATE A POWERFUL
ATMOSPHERE ?

What happens in Macbeth?

- Three witches predict great things for Macbeth.
- Lady Macbeth persuades Macbeth to kill King Duncan to get the throne.
- Macbeth kills Duncan and becomes King of Scotland.
- Macbeth has his best friend, Banquo, murdered.
- Macbeth begins to think that he's invincible while also losing his grip on reality.
- Lady Macbeth can't live with the crimes she's helped commit and takes her own life.
- There is a battle and Macduff decapitates Macbeth.



OUT! DAMNED SPOT!
Lady Macbeth (Act 5 Scene 1)

Unsex me here,
And fill me from the crown to the toe top-full
Of direst cruelty.
Lady Macbeth (Act 1 Scene 5)

"There's daggers in men's smiles."

"IS THIS A DAGGER WHICH I SEE BEFORE ME, THE HANDLE TOWARD MY HAND?"
Macbeth (Act 1 Scene 7)

"What's done cannot be undone."

"BY THE PRICKING OF MY THUMBS, SOMETHING WICKED THIS WAY COMES."
Macbeth (Act 1 Scene 3)

NOTHING IS but what is not.

Rehearsal and performance techniques: Tools to improve your character and engage the audience.

MONOLOGUE An extended speech by one character; sometimes to another character, sometimes to the audience, sometimes to themselves.	CROSSCUTTING Showing two scenes side by side on stage and cutting from one to the other; often to show a contrast or two locations.	SOUNDSCAPE An ensemble (group of actors) use their voices and bodies to create the sounds of a real or imaginary location.
IMPROVISATION Work that is created spontaneously or without rehearsal. Actors must listen to each other and respond to what is being said without a script.	ATMOSPHERE The overall feeling or mood created by the actors in a scene. The atmosphere should affect the way to audience experience the scene or play.	CHORAL MOVEMENT Using movement as a group to emphasise the words being spoken and add to the overall atmosphere being created.
CONSCIENCE ALLEY All actors except one line up and share the thoughts of a particular character out loud in turn, as the actor playing that character walks down the 'alley'.	HOT SEATING One actor sits in the 'hot seat'. Everyone in the ensemble asks the actor questions about their character's thoughts and feelings which they answer in role (as their character).	ROLE ON THE WALL A rehearsal technique involving writing down everything you know about your character from the script. This helps to identify any gaps in your knowledge of the character.



WHAT AM I
DOING
WELL ?

WHAT DO I
NEED TO DO
TO IMPROVE ?

WHAT TOOLS DO I
HAVE TO ENGAGE THE
AUDIENCE ?

DEVISING TECHNIQUES:

Different tools used to respond to a stimulus...

Narration

Adding a spoken commentary about the action on stage.

Slow motion

Slowly exaggerating your actions to highlight a key moment.

Unison

Movement or speech performed at exactly the same time by more than one person.

Transition

A smooth, clean movement creating fluency from one scene to the next.

Mime

Acting in complete silence, using on physical skills.



DON'T FORGET TO SET TARGETS FOR EACH REHEARSAL PERIOD!

To **devise** means to create a performance from scratch, sometimes using a stimulus.

The **atmosphere** is the overall mood or feeling created for the audience.

Music can be added to build tension or create an atmosphere.

Tension is a growing sense of expectation which engages the audience.

The **climax** is the highest point of tension in the storyline.

THOUGHT-TRACKING-

One actor shares their character's thoughts and feelings with the audience while the other actors hold a freeze frame.

ROLE ON THE WALL-

Writing down a thorough description of your character's outside appearance and inside thoughts and feelings.

YEAR 7 WHAT'S BEHIND THE DOOR?

VOCAL KEYWORDS

PACE

The speed at which an actor delivers their lines.

PAUSE

Used to emphasise a moment between characters; silence can be used to create atmosphere.

PITCH

How low or high an actor's voice is when delivering their lines.

CLARITY

Delivering dialogue in a clear voice so the audience can hear.

PROJECTION

Using your voice to speak loudly and clearly.

TOPE

The emotion behind what your character says e.g. an angry tone, a surprised tone.

PHYSICAL KEYWORDS

BODY LANGUAGE

Showing emotion through the way you sit, stand or position yourself.

GESTURES

Using your hands (or sometimes eyes and head) to communicate with other characters and the audience

FACIAL EXPRESSION

Showing emotion through your face- eyes, mouth, eyebrows.

INTERACTION

How characters react to each other to convey their relationship.

SPACE

The way actors move around the stage space to show their relationship with other characters.












LEVELS

Used to show the 'power' difference between characters.

A STIMULUS IS A STARTING POINT FOR IDEAS

A BRAINSTORM IS A SHARING OF INITIAL IDEAS WITH YOUR GROUP

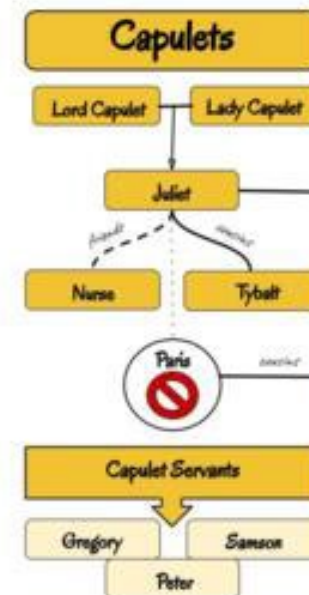


LITERARY TERMS		KEY CONCEPTS	
	1. Soliloquy: a long speech expressing the thoughts of a character alone on stage.		7. Courtly love: courtly love' sees love as ideal, not real. Rather than meeting the loved one, lovers exchanged letters and poems comparing their lover to beautiful, exaggerated ideas like angels or goddesses.
	2. Sonnet: a 14 line poem in rhyming couplets. It traditionally is about the topic of love. There is a change in meaning or twist in the final lines.		8. Fate: the idea that higher powers such as God or fate controlled the events in a person's life . The prologue about 'star-crossed lovers' introduces the role of fate from the start.
	3. Dramatic irony: when the audience knows something that the characters don't.		9. Honour code: a sense of family honour at the time meant that any small insult had to be repaid with revenge. This could lead to violence, death and civil unrest (large brawls across a city.)
	4. Hyperbole: an over exaggeration - not meant to be taken literally		10. Patriarchy : whereby men hold the power and women are excluded from it. For example, the father was the ruler of the household, and women had no rights in law. Daughters were regarded as 'property' and often married off very young as a way to join wealthy and powerful families.
	5. Tragedy: a genre of drama based on human suffering and, mainly, the terrible or sorrowful events that befall a main character or cast of characters.		11. Catholicism: Italy in which the play is set (Verona) was a Catholic society, which believed that suicide was a mortal sin, punished by an eternity in hell.
	6. Foreshadowing: the playwright gives us hints or clues to suggest what will happen later in the plot.		

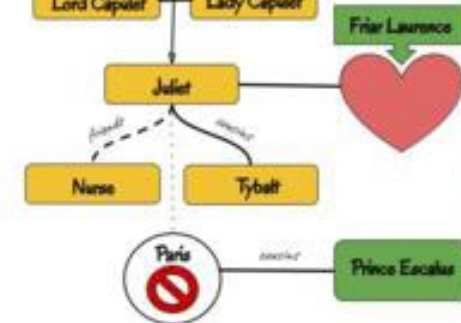
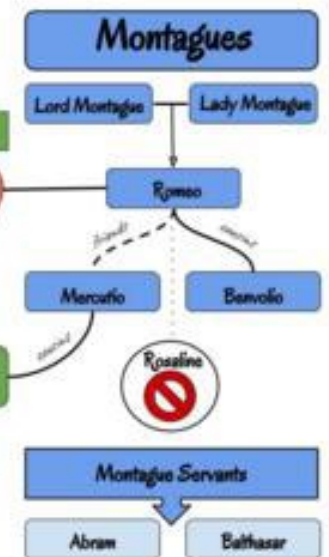
THE GLOBE



JULIET



ROMEO





1. The 4 C's



Cooking	Cleaning	Chilling	Cross Contamination
<p>Cooking kills bacteria.</p> <p>Food needs to be heated till steaming hot with the core temperature reaching 75°C for 30 seconds.</p>	<p>Cleaning kills bacteria.</p> <p>Wash hands before, during and after food preparation.</p> <p>Wash all work tops, utensils, chopping boards and equipment.</p> <p>Rinse fruit, salad and vegetables.</p>	<p>Chilling prevents microbial growth.</p> <p>Cool food to below 5°C as quickly as possible.</p> <p>Defrost food in the fridge.</p>	<p>Bacteria is transferred from one object to another.</p> <p>Keep raw meat and shellfish on the bottom shelf of the fridge.</p> <p>Keep raw and cooked food separate.</p> <p>Never wash raw meat.</p>

2. Using a knife safely

Bridge



Claw



- Use a firm grip and even pressure.
- Use the bridge or claw to hold food whilst cutting.
- Always cut down towards the chopping board, never cut towards yourself.
- Carry a knife with the point facing downwards.
- Don't touch the knife blade.
- Always put a knife down, don't hand it to someone else.
- Never leave your knife soaking in the washing up bowl.
- Never catch a falling knife.
- Always hand your knife back in at the end of the lesson.

Key topics: The Eatwell guide, the 4 C's, nutrients, knife skills, using the oven and hob, combining ingredients, shaping, forming, testing for readiness, weighing and measuring, washing up and clearing away.

3. Heat Transfer and Cooking Methods

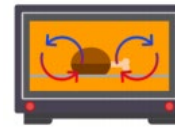
Conduction



The transfer of heat from one object to another by **direct contact**.
Metal is a good conductor of heat.

Dry frying, stir frying

Convection



The transfer of heat energy by the movement of molecules, in **a liquid or in the air**, from a warm area to a colder area.
Molecules rise as they heat up and then fall back down again as they cool creating convection currents.

Baking, boiling, poaching and steaming.

Radiation



The process where heat and light waves strike and penetrate your food through electromagnetic energy.
Heat energy in radiation is in the form of **infrared heat rays**.

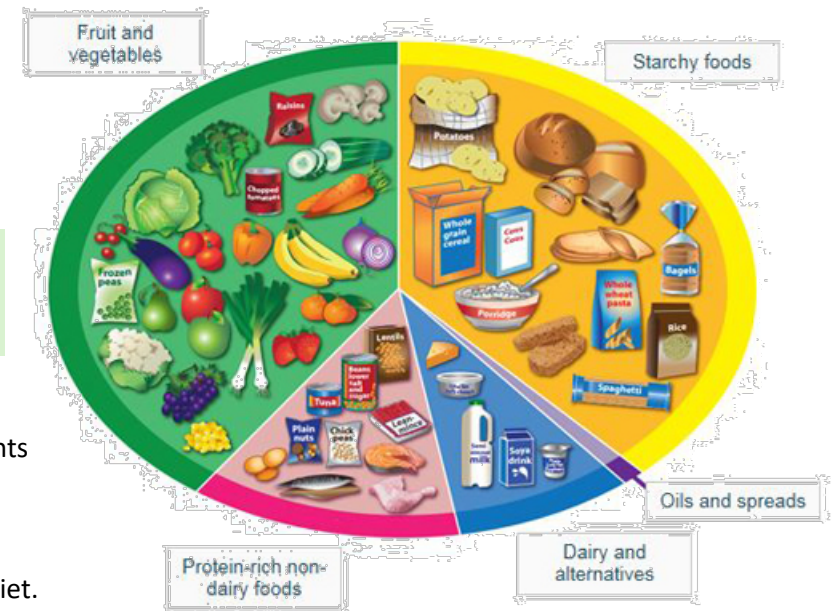
Microwave cooking, grilling and toasting.

4. The Eatwell Guide



Watch this video for a recap.

This is the governments guideline showing a healthy balanced diet.






5. 8 tips for a healthy lifestyle

- Base your meals on starchy foods.
- Eat lots of fruit and vegetables.
- Eat more fish.
- Cut down on saturated fat and sugar.
- Try to eat less salt- no more than 6g a day
- Get active and try to be a healthy weight.
- Drink plenty of water.
- Don't skip breakfast.



6. Key Terms

1. Cross contamination	When bacteria is transferred from one object to another.
2. Diet	The type of foods that a person eats. Some people have special diets depending on their age or needs.
3. Nutrients	Nutrients are chemical compounds in food that are essential for the body to function properly and maintain health.
4. Macro nutrients	These are nutrients that are needed by the body in large quantities; they are Carbohydrates, Proteins and Fats.
5. Micro Nutrients	These are nutrients that are needed by the body in small amounts; they are vitamins and minerals.
6. Health	This defines your physical wellbeing. Good health indicates that you are free from illness.
7. Enzymic browning	An oxidation reaction that takes place in some foods, mostly fruit and vegetables, causing the food to turn brown.

	Nutrient	Function	Food sources
6. Macronutrients	Carbohydrate	This is the primary source of energy it also makes you feel full.	Bread, pasta, rice and potatoes.
	Protein	The bodies building block. Helps the body to grow and repair itself.	Nuts, eggs, fish, meat, beans and pulses.
	Fat	This is used as a secondary source of energy . It helps to insulate the body and maintains brain function .	Meats, cheese, butter, oils, nuts and seeds.
7. Micronutrients	Vitamins A B C D	There are many different vitamins and they play a vital role in keeping skin, eyes, hair and blood healthy .	Fruits and vegetables, meats, dairy, eggs, cereals, sunlight etc.
	Minerals Calcium, iron and sodium	Minerals help your body grow, develop and stay healthy. They help build strong bones, teeth, blood and nervous systems .	Dairy, vegetables, fish, meat, cereals etc.
	Fibre	 Prevent constipation , increase the feeling of fullness , reduce the risk of heart disease, diabetes and some cancers.	Wholegrain cereals, fruits and vegetables.
	Water	Keeps you hydrated , controls body temperature, helps kidneys filter waste.	Fruit, vegetables, milk, soup.

8.





Tu veux aller au café cet après-midi ?	1	You want to go to the café this afternoon?
Oui, je veux bien merci, à quelle heure ?	2	Yes, i really want to thank you, what time?
À trois heures trente.	3	At three thirty
Bonjour, comme boisson vous désirez ?	4	Hello, for a drink, what would you like?
Je voudrais un Orangina sil vous plaît	5	I would like an orangina please
Je veux un chocolat chaud s'il vous plaît	6	I want a hot chocolate please.
Oui, d'accord, j'arrive tout de suite	7	Yes, ok, I'll be straight back
...		...
Vous voulez autre chose ?	12	Do you want anything else?
Je voudrais une glace.	13	I would like an ice-cream
Quel parfum ?	14	What flavour ?
Fraise s'il vous plaît	15	Stawberry please
Et pour vous ?	16	And for you ?
Je voudrais une crêpe avec du nutella s'il vous plaît	17	I would like a pancake with Nutella please.
Voilà, merci	18	Here you go, thank you.
...		...
Pardon monsieur, c'est combien ?	19	Excuse me sir, how much is it?
Ça fait dix-sept euros, quatre-vingts s'il vous plaît.	20	That is 17 euros 80 please
Voilà, merci, au revoir	21	Here you go, thank you, good-bye
Au revoir, bonne journée	22	Good bye, have a good day.

J'habite dans un petit appartement au centre-ville de Paris.	1	I live in a small flat in the centre of Paris
Paris est la capitale de la France et c'est situé dans le nord du pays.	2	Paris is the capital of France and it is situated in the north of the country.
Ici, on peut visiter la Louvre, le tour Eiffel et l'arc de triomphe.	3	Here, you can visit the Louvre, Eiffel tower and the arc de triomphe.
J'adore ma ville car c'est très animé cependant	4	I love my town because it is very lively however
c'est aussi assez sale.	5	It is also quite dirty.
Ici le 14 juillet on fête le jour national, il y a	6	Here, on the 14th July we celebrate 'national day' there is
un grand défilé et des feux d'artifices, c'est vraiment chouette	7	A big parade and fireworks, it is really great.



1. Population key words

Population change	Change in the number of people in a specified area over time
Birth Rate	Number of babies born per 1,000 of population
Death Rate	Number of deaths per 1,000 of population

2. Settlement and Urbanisation key words

Site	The place the settlement is located
Situation	Where the settlement is in relation to other settlements and surrounding features
Settlement hierarchy	Order of settlements in a region or country by population OR services
Land-use	The function of the land – what it is used for.
Terraced Housing	Row of similar houses joined together by their side walls
Traffic congestion	Slow speeds, longer travel times and queues when traveling in a vehicle.
Derelict building	Empty building which is no longer used and in a poor state of repair.
Retail	The selling of goods
Regeneration	Improving the buildings and landscape to provide benefits for an area
Urbanisation	The increasing percentage of a population living in urban areas
Megacity	A city with a population of over 10 million people

3. Early factors in choosing settlement location

Flat land
Raw materials
Water supply
Defendable site
Fertile soil
Shelter

6a. Challenges in HIC urban areas

Traffic congestion
Derelict buildings
Lack of green space
Crime

6b. Opportunities in HIC urban areas

Transport links
Close-knit communities
Entertainment and leisure
Retail

8. LIC/NEE Urban Land-Use Model



Central Business District (CBD)
Industry along transport route
Shanty towns
Basic housing
High cost housing

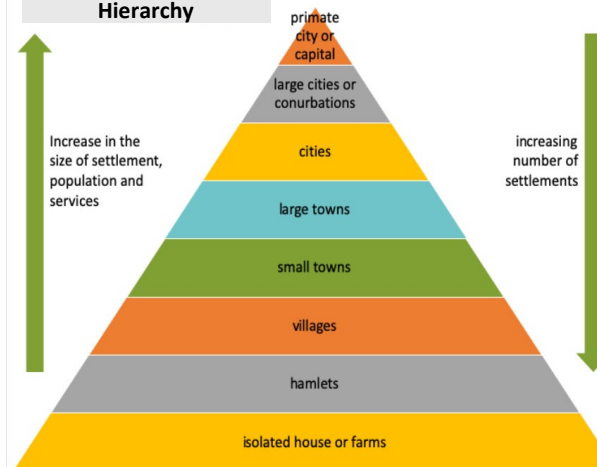
8. LIC/NEE Urban Land-Use Model

Shanty towns	Self-built housing on the edge of cities
Basic housing	Formally constructed housing with services such as water and electricity
High-cost housing	Similar in structure and style to those found in HICs

9. Causes of urbanisation in LIC/NEE Cities

Natural Increase	Birth rate is higher than death rate
Rural-urban migration	The movement of people from the countryside to cities
Push factor	A reason a person has for leaving a place
Pull factor	A reason a person has for moving to a place

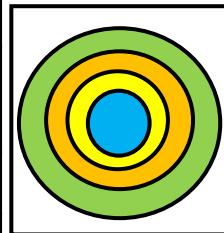
4. Settlement Hierarchy



7. Urban Transport Systems

Integrated Public Transport	Combining modes of transport for ease and efficiency of use
Congestion Charge	Charging polluting cars for entering an urban area
Park and Ride	Cars are parked on the outskirts of an urban area and drivers take public transport from there to the CBD

5. HIC Urban Land-Use Model



CBD	Central Business District. The commercial centre of an urban area.
Inner City	Mainly terraced housing in grid patterns, originally built near to factories to house workers.
Suburbs	Residential area mainly made up of private, semi-detached housing.
Rural-Urban Fringe	The edge of a city where it meets the countryside

10. Challenges in LIC/NEE Urban Areas

Healthcare	Lack of access to healthcare facilities and trained doctors, nurses and midwives
Education	Not enough schools and a shortage of teachers. Wages are low for teachers.
Water supply	Not all the population have access to running water in an urban area
Energy supply	Shortages of supply because homes are not properly connected to the energy grid.
Crime	Lack of education and jobs mean some turn to crime for income.
Informal economy	Poorly paid jobs with no benefits and no tax is paid to the government from these jobs
Air pollution	Traffic congestion and pollutants from factories in the air create smog and unsafe air



1. Physical Landscapes key words

Landscape	The visible features of an area of land
Geology	The study of rock types
Landform	Feature created by landscape processes
Coast	The land along the sea
Sediment	Small pieces of material (such as rock) moved by air and water
Glacier	Slow moving mass of ice or compressed snow
Bedrock	Hard, solid rock beneath the top layer of the ground

2. Layers of the landscapes

Physical (base) layer	The physical landscape sculpted by physical processes and geology
Biological layer	Soil, plants and trees
Human layer	Settlements, communications and farming

3. The Rock Cycle

Rock Cycle	One type of rock changes into another type of rock
Igneous	Rock formed on the surface (during eruptions) or deep underground by the cooling of molten rock
Sedimentary	Formed by deposition
Metamorphic	Undergone change due to intense heat and/or pressure

4. Landscape processes

Weathering	Breakdown of rocks in situ
Erosion	Wearing away and removal of pieces of rock
Transportation	Movement of rocks from an area of erosion to an area of deposition
Deposition	Dropping of rock particles

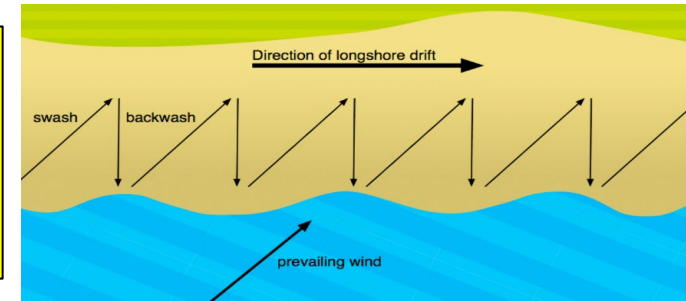
5. Features of a river valley

Drainage Basin	Area of land drained by a river and its tributaries
River Channel	The groove in the land through which water travels
Tributary	Small river which joins a larger river
Confluence	The point where two rivers meet
Source	Start of a river
V-shaped river valley	Deep river valley shaped like a V
Waterfall	A 'step' in the river over which water plunges
Meander	A bend in a river
Floodplain	The flat land either side of the channel which floods when the river bursts its banks
Mouth	End of a river

6. Coastal landforms

Cliff	Steep, often vertical rock face
Bay	Land curves in away from the sea and is surrounded by land on three sides
Headland	A tall, narrow piece of land projecting into the sea
Cave	A natural hollow in a cliff
Arch	An opening in the cliff from where a cave has collapsed
Stack	Steep, often vertical column in the sea
Beach	Sediment deposited by the sea
Spit	A narrow, jutting finger of sand projecting into the sea
Tombolo	A beach which joins an island to the mainland

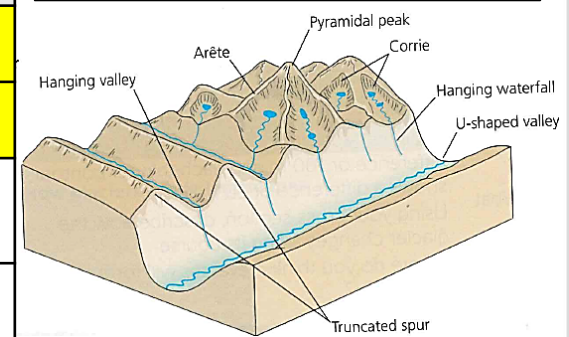
7. Longshore Drift – the zigzag movement of material along a beach in the direction of wind



8. Glacial processes key terms

Plucking	The movement of glaciers pulls rock from the bedrock
Abrasion	Scraping of a glacier over bedrock
Freeze-thaw weathering	Changing temperature of water causes rock to weaken and break
Moraine	Debris mixed with ice which is transported by glaciers

9. Landforms in a glacial valley created by erosion



10. Glacial landforms key terms

Corrie	A sheltered, over-deepened hollow with a steep back wall and lip
Arête	Sharp mountain ridge between two corries
Pyramidal Peak	A sharply pointed peak caused by the formation of three or more corries
U-Shaped valley	Deep valley with straight sides and flat bottom – shaped like a U.
Misfit river	River that is too small for a valley
Truncated spurs	Steep cliffs along the sides of a U-shaped valley
Hanging Valley	Small valley hanging high above a U-shaped valley
Fjord	Flooded glacial valley
Ribbon lakes	Long, thin lake found in a U-shaped valley
Glacial till	Debris transported by a glacier where it then melts. This is a mixture of rocks and clay.
Erratic	Very large boulder
Drumlin	Smooth, egg-shaped hills.



1. Key words

Trade	the action of buying and selling goods and services
Merchant	a person who trades in items produced by other people
Religion	a system of belief, faith and worship
Caliphate	a state under the leadership of an Islamic ruler
Excavation	the exposure, processing and recording of archaeological remains

2. What were the silk roads

The Silk roads were a network of routes that links people, trade, knowledge and religions.
They stretched from Europe in the West to China in the East.
They included some of the most important cities in the world such as Samarkand, Baghdad, Constantinople and Xian.

3. How did they begin?

Persia was situation in the heart of the Silk Roads and first began expanding their network outwards.
Alexander the Great continued expansion further, building roads and sharing ideas as he went!
Zhang Qian, a Chinese diplomat, headed West and began the trade of horses, significant for Silk Road expansion.

4. What religious ideas spread?

Buddhism, Islam, Zoroastrianism, Christianity were all spread along the Silk Roads.

5. What was traded on the silk roads?

Horses, silk, rhubarb, wool, spices, musk, gunpowder, paper, furs linen and silver were all traded on the Silk Roads.

The Sogdians were the greatest merchants of the Silk Roads period, situating themselves along the Silk Roads and acting as translators. Their home was the ancient city of Samarkand.

Items were transported on camels.

6. Baghdad – the jewel of the Silk Roads

Baghdad was the capital city of the Abbasid Muslim Empire. The town was built from scratch in 762AD.

It was built in the shape of a circle with an outer wall and two inner walls and a moat for defence.

It had a population of nearly 1 million.

It was a cosmopolitan city. People from Turkey, Persia, India and north Africa came to trade and live!

7. Misconceptions

Western Europe is the centre of the world.

Rome was the capital of the Roman empire.

Women treated as second class citizens in the Ancient World.

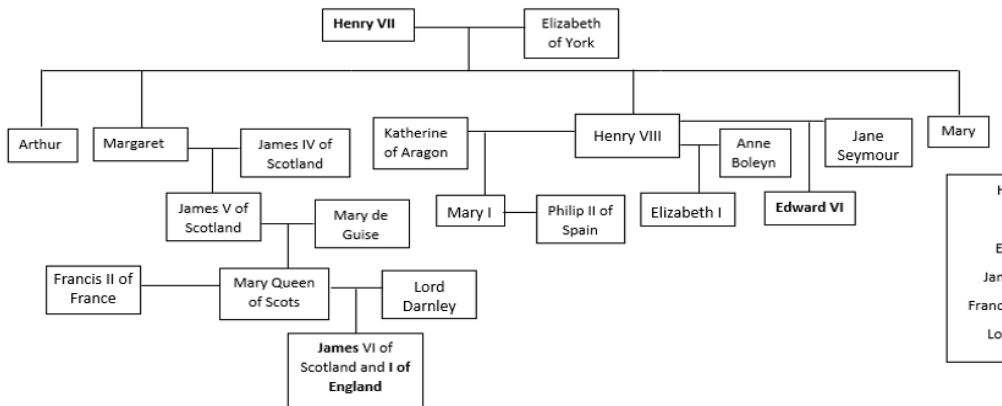
Christianity is European.

Europeans successfully resisted the Mongols.

Europe was superior academically and intellectually to the East.

Islam, Christianity and Judaism have always been rivals.

Globalization is a modern development.



2. The Reformation

Protestantism	Religion adopted by Henry VIII in 1534
Divorce	Dissolution of a marriage
Martin Luther	Founder of the Protestant faith
Reformation	England becomes a Protestant country, separate from the Catholic Church
Act of Supremacy	An Act passed by Parliament in 1534 which made Henry and his successors Supreme Head of the Church of England
Dissolution of the monasteries	Monasteries were closed and their assets taken

8. Source analysis - key words

Utility	How a source is or isn't useful to us
Reliability of the source	How trustworthy is the source
Interpretations	People's opinions about an event or individual
Provenance of a source	The origin of a source- What is the source? Who created it? When was it created? Why was it created?
Source content	What is the source about?

4. Elizabeth I

Elizabeth I	The youngest daughter of Henry VIII, a Protestant
Counter-Reformation	Actions to change England back to a Catholic country took place during Elizabeth's reign
Armada	A fleet of ships
Causes of the Spanish Armada (1588)	Marriage rejection, religious differences, piracy
Empire	A group of states or countries ruled over by one monarch or government
Illegitimate	A child born unlawfully

5. Mary Queen of Scots

Mary Queen of Scots	Elizabeth I cousin, a Catholic
The Babington Plot (1586)	A plot to assassinate Elizabeth I by Charles Babington (a Catholic exile), and Mary herself.
Imprisoned	Kept captive

6. Local History

Rufford Abbey	An Abbey which was dissolved during Henry VIII's reign
Monks	A member of the religious community, living under vow and chastity and obedience to God

3. Mary I

Bloody Mary	A nickname given to Mary I for her treatment of Protestants
Heretic	A person who does not have the same opinion as what is generally believed
Persecution	Treated badly because of beliefs, ethnicity, religion
Phillip of Spain	The King of Spain, who was Catholic, married to Mary I
Methods of execution	Killed by guillotine, hanging or burning at the stake



1. The Gunpowder Plot

James I	King of Scotland and England in 1603. Brought up as a Protestant
The Gunpowder Plot	A plot against James I and Parliament as a result of the repressive laws towards Catholics
Robert Catesby	Leader of the gunpowder plotters. A Catholic gentleman
Guy Fawkes	Found with 36 Barrels of gunpowder placed directly under the House of Lords
Hung, drawn and quartered	Hung by a rope, the abdomen was cut out, then pulled apart by the limbs

2. Charles I

Absolute Monarch	A ruler who has supreme authority and power
Henrietta- Maria	French Princess. Charles I wife. A Catholic
Personal Rule	Charles ruled for 11 years without Parliament
Raising the standard	Charles summons an army to fight parliament. This is from Nottingham
Short Parliament	Parliament were not happy with Charles about his actions over his personal rule, so he dissolved them after 3 weeks
Long Parliament	Stayed in power for 20 years

3. The English Civil War

Roundheads	Nickname of the Parliamentarians' army
Cavaliers	Nickname of the Royalist army
Civil War	A war between two sides in the same country.
New Model Army	A professional national army and could be sent anywhere in the country.
Weaponary	Pike, mortar, musket, cannon
Puritan	An extreme Protestant. They want no sign of Catholicism in the country
Oliver Cromwell	Leader of the New Model Army. Ruled the country after Charles I

4. Consequences of the English Civil War

Show Trial	Charles's trial was just for 'show'. The decision to execute him had already been made
Treason	Attacking a state or the authority of a country
The Lord Protector	Cromwell did not want to be called King, but this title gave him the powers of a king after Charles execution.
Protectorate	English government from 1653-1659
Features of Cromwell's rule	Banned Christmas, swearing, dancing and horse racing. Encouraged Jewish people to move back to England Won control of Jamaica

5. Timeline of key dates

1603	James I became king of England
5 th November 1605	The Gunpowder Plot
1625	Charles I becomes King
1642 - 1651	The English Civil War
January 1649	The Execution of Charles I
1653- 1658	The rule of Oliver Cromwell
1661	Restoration of the monarchy



1

Keyword	Definition
Script	Combination of blocks of code
Sprite	Character or graphical element of a game / app
Blocks	Drag-and-drop elements of programming logic that can be combined together
Code	Words that represent programming logic
Programmer	An app / games developer who focuses on logic and flow of a computer program
Coordinate	Position on the screen, (x and y in 2d games)

2

Programming Construct	Explanation
Sequence	Series of code / blocks that run one after the other
Selection	Code that branches depending on whether a condition is met (e.g. IF score is > 50: DO THIS)
Iteration	Code that loops, can be a set number of times or whilst a condition is met (e.g. LOOP FOREVER)

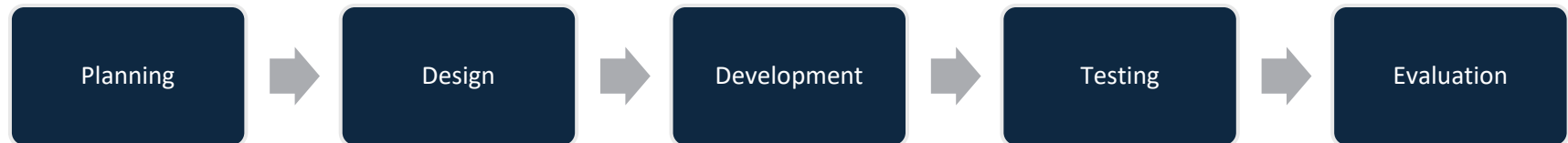
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Considerations when evaluating software:

- Game elements work effectively
- Graphics are high quality
- Gameplay is excellent with increasing player challenge
- Coding is highly efficient

4

Typical application / game development process:



5

Literacy – Key Words

Broadcast	A script used to activate other scripts during a project without needing a user prompt (i.e. a key press or mouse click).
Stage	The playable area / the screen
Background	The image which is like the wallpaper of the stage.



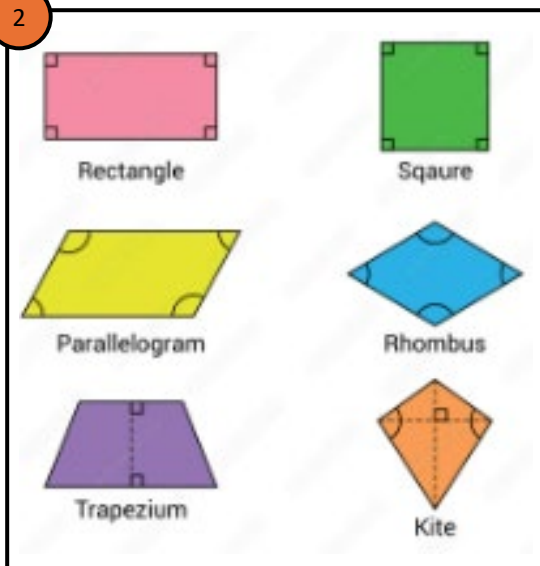
Constructions, Lines and Angles

Sparx Codes M502 M679 M393 U787 U245

1

Key Word	Definition
Parallel	Straight lines equal distance apart (Never Meet)
Perpendicular	Lines that meet or intersect at 90°
Polygon	A 2D shape with straight sides
Quadrilateral	A 2D shape with 4 straight sides
Acute	An angle less than 90°
Obtuse	An angle between 90° and 180°
Reflex	An angle more than 180°
Right Angle	An angle exactly 90°
Construct	To accurately draw shapes, lines, or angles using a pencil, ruler, compasses and protractors

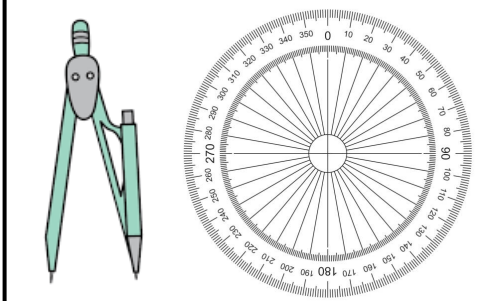
2



3

Compasses

Protractor



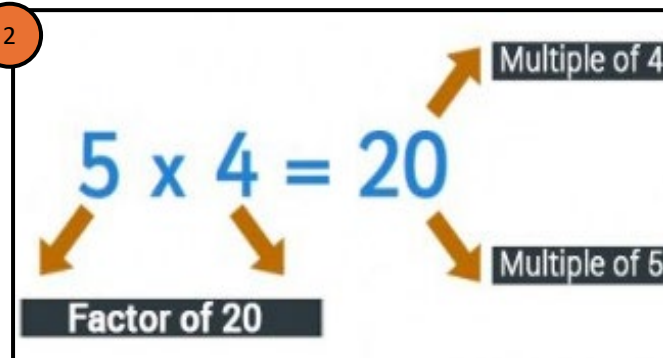
Developing Number Sense

Sparx Codes M994 M131 M878

1

Key Word	Definition
Factor	A number that divides into another with no remainder. E.g. 5 is a factor of 20
Multiple	A number in the times table. E.g. 40 is a multiple of 8
Significant Figure	A way of rounding numbers accounting for the number of non-zero digits
Estimate	To perform an approximate calculation by rounding amounts to 1 significant figure
Product	The result of <i>multiplying</i> values

2



3

$$62 \times 29$$

$$\begin{array}{r} 60 \\ \times 30 \\ \hline 1800 \end{array}$$

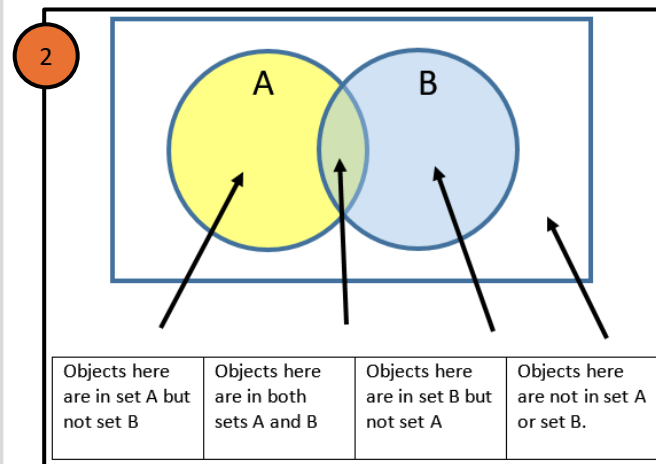
1800 is a reasonable estimate.



Sets and Probability

Sparx Codes M655 M829 M419 M941

1	Key Word	Definition
	Venn Diagram	An illustration that uses overlapping circles to show the logical relationship between two or more sets of items
	Intersection (AND)	The items shared between both categories of a venn diagram
	Union (OR)	The items or values that are in either category of a venn diagram
	Probability	A number given to the chance that something might happen
	Fair	Each outcome of an event has an equal chance of happening
	Bias	All outcomes of an event are not equally likely



3

Probability Formula

E : Event

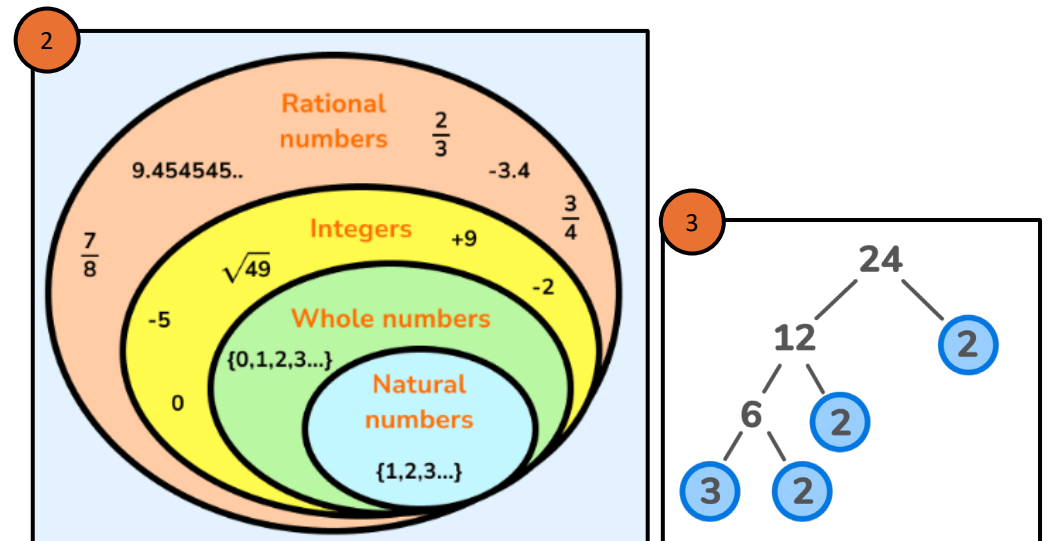
$$P(E) = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}}$$

$0 < P(E) < 1$

Working with Primes

Sparx Codes M108 M365 M698

1	Key Word	Definition
	Prime	a whole number greater than 1 that cannot be exactly divided by any whole number other than itself and 1
	Prime Factorisation	Breaking down a value into prime numbers that multiply to make it
	Highest Common Factor	The largest number that is a factor of two numbers
	Lowest Common Multiple	The smallest value that is a multiple of two or more given quantities





KEYWORDS

12 Bar Blues	The structure used in Blues music. There are 3 lines of 4 bars.
Blues Scale	A selection of notes that are put together to create a 'bluesy' scale. The blues scale is used for the notes during improvised sections of music.
Chords	The chords are played at the beginning of each of the 12 bars. The chords used in Blues are C, F & G. <u>Rule for a chord: play a note – miss a note – play a note – miss a note – play a note.</u>
Improvisation	Improvisation is where music is played and made up 'on the spot'. Music that is improvised is not usually written down, and not preplanned.
Walking Bass	The name for the bassline heard in Blues music. It is usually played at a "walking" tempo.
Call and Response	A performed plays/sings a 'call' and the other performers will 'respond'.

Origins – African slaves brought their musical traditions with them when they were transported to work in the North American colonies. These **Work songs** were sung rhythmically in time with the task being done. Their songs were passed on orally (word of mouth) and were never usually written down. They used **call and response** where phrases from a lead singer were followed by the others. Early styles of Blues was known as **country blues** and was usually a solo singer accompanied on guitar or piano sometimes with added harmonica or drums.

12 Bar Blues – The 12 bar blues is the name of the structure used in blues music. It is split in to 3 sections, which have 4 bars each.

Chords – A chord is 3 notes played together at the same time. A chord is also called a **triad**. Blues music only uses 3 chords which are played at the start of every bar.

C/// C/// C/// C///
F/// F/// C/// C///
G/// F/// C/// C///

C = CEG
F = FAC
G = GBD

Improvisation – Improvisation is where music is performed 'on the spot'. Music that is improvised isn't traditionally written down, and the performers will use their musical knowledge to perform something from scratch. In Blues music, the improvisation is usually the notes from the Blues scale.

Blues Scale – The blues scale is a certain selection of notes that have been put together to sound 'bluesy'. The scale is often used to create the improvisation.



Walking Bass – The walking bass is the main part of any Blues song. This is usually played by the bass guitar. The tempo of the bass line should be steady, which is why it is called the "walking" bass.



Song Structure – Modern Blues songs can sometimes follow modern pop song structure (Verse-Chorus). Older Blues songs usually consist of 3 lines. Lines 1 & 2 are the same, and line 3 is usually different. (This also ties in with the 12 chords).

Lyrics – The lyrics of Blues songs were often about depression, lack of money/employability, loneliness and them missing their family. The lyrics of line 1 & 2 are usually the same, with line 3 being different.

Musical Elements – Musical elements are often used separately and together to help create the mood and expression the emotion on a song.



Injuries in Sport

1. Types of Injury

	Injury	Description
1a	Sprain	Damage to a ligament that crosses a joint.
1b	Fractures	Broken bones caused by impact, twisting or repetitive stress on the bone.
1c	Dislocation	Joint injuries that occur when the bones meeting at a joint are dislodged through impact, twisting or pre-existing weakness to that area
1d	Concussion	Caused by violent impacts to the head
1e	Abrasion	Damage to the skin caused by impacts and collisions
1f	Torn Cartilage	Cartilage lines the end of bones and can be damaged through twisting actions
1g	Overuse injuries	Caused by repetitive actions or poor technique.

2. How to Treat an Injury (RICE method)

R	Rest	Immobilise the injured part
I	Ice	Apply an ice pack or other cold object to the affected area
C	Compression	Ensure the ice pack or compress is firmly pressed against the affected area
E	Elevation	Raise the injured limb above the level of the heart

The **RICE** method helps to reduce swelling and pain! Used most commonly for soft tissue injuries or injuries where swelling is likely to occur.

3. Prevention of Injury

3a	Follow rules and apply them fairly
3b	Always use protective equipment. Ensure all protective equipment is in good condition

Physical, Emotional and Social Well being

1. Physical Health

is linked to fitness— being able to perform effectively the physical tasks involved in life

2. Emotional Health

or mental health is linked to personal wellbeing—feeling positive about yourself

3. Social Health

also contributes to wellbeing— feeling positive about interactions with other people.

4. Wellbeing

a combination of physical emotional and social health

5. Physical health

5a. Stronger bones (increased bone density)
 5b. Lower cholesterol/ reduced obesity
 5c. Increase development of components of fitness
 5d. Increased life expectancy

6. Emotional health

6a. To increase self esteem confidence—increased endorphins released
 6b. Reduce risk of age related diseases— dementia
 6c. Releases stress and tension
 6d. Fun/ enjoyment/ reduced boredom

7. Social health

7a. To develop teamwork skills
 7b. To meet new people/ friends
 7c. To develop communication skills
 7d. Develop leadership skills

8. Negative effects of training on:

8a. Physical health—overexertion leading to heart failure /over use injuries
 8b. Emotional health— training complete injury and cause depression
 8c. Social health—training long hours means less time spent with family

6) Positive effects of exercise:

Helps you cope with the physical side of life
 Even moderate exercise improves how long you will live
 Lowers psychological illness
 Lowers risk of eating problems
 Gives you a lower resting heart rate and lower blood pressure
 Can help weight control

7) Negative effects of exercise :

Put you at risk of a sport related injury
 Time off to recover from injury can lead to psychological problems
 Competition pressure can lead to psychological problems
 Stresses and needs of a particular sport can lead to long term health problems



Key Quotes

1	I believe in the Holy Spirit, the Lord, the giver of life, who proceeds from the Father and the Son, who with the Father and the Son is adored and glorified, who has spoken through the prophets. (Nicene Creed)
2	As soon as Jesus was baptized, he went up out of the water. At that moment heaven was opened, and he saw the Spirit of God descending like a dove and alighting on him. (Matthew 3:16)

Key Words

1	Holy Spirit	The third person of the Trinity, true God, who Christians believe inspires people.
2	Pentecost	A Christian festival celebrating the time when the Holy Spirit came down to the apostles; also a Jewish festival known at Shavuot, celebrating the harvest and the giving of the Torah at Mt Sinai.
3	<i>Ruah</i>	A Hebrew word meaning wind or breath; God's Spirit that was breathed in Adam to bring him to full life.
4	People of God	One of the names of the Church, emphasising the community of believers united by their belief in God, the Father, Son and Holy Spirit.
5	Body of Christ	One of the names of the Church, emphasising the community of all those who are members of Christ's body through Baptism, with Jesus as their head, working together like one body.
6	Temple of the Holy Spirit	One of the names of the Church, emphasising the community of all those who are led by God's spirit in their lives given to them through the sacraments.
7	Confirmation	The Sacrament of Initiation that completes Baptism and strengthens a person's faith by being sealed with the Holy Spirit as a nature member of the Church.
8	Fruits of the Holy Spirit	The behaviours and attitudes that are shown by a person who is filled with the Holy Spirit, such as love, joy and kindness.



Key Facts

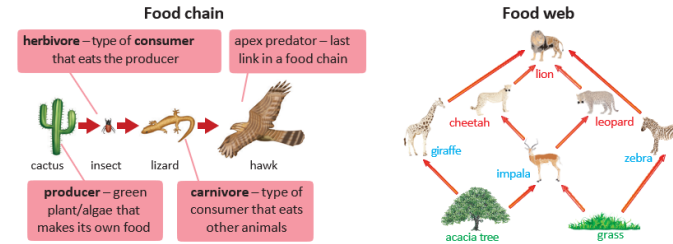
1	Symbols are used to communicate beliefs about the Holy Spirit . The symbols are based on biblical accounts of the Holy Spirit (dove, fire, wind) and link to Christian worship and rituals.
2	The Holy Spirit gives Christians 7 gifts: love, wisdom, understanding, counsel, fortitude, knowledge, piety and fear of the Lord.
3	Pentecost is when the Holy Spirit came to the apostles, filling them with confidence and the ability to speak different languages to spread the Good News. It is known as the birthday of the Church.
4	The Bible shows that the Holy Spirit played an important role in Jesus' life: Jesus was conceived of the Holy Spirit, the Holy Spirit appeared as a dove when Jesus was baptised, Jesus said God's spirit had anointed him to do God's work.
5	The Holy Spirit helped the apostles to carry out the mission given to them by Jesus, gave the early Christians perseverance in a time of persecution and continues to bring more people to the Church community.
6	Individual Christians can feel the Holy Spirit at work in their lives: the Holy Spirit guides people in their vocation, individuals are anointed in the Holy Spirit at Baptism which is sealed during Confirmation .
7	At Confirmation a person celebrates receiving the gifts of the Holy Spirit, which helps them to live a Christian life and follow God.



Keyword	Definition
Anther	The part of a plant that produces pollen
Bioaccumulation	The process by which chemicals build up in a food chain
Carpel	The female reproductive parts of a plant
Community	All the areas of an ecosystem
Competition	Where resources are limited, and one species has more of that resource than another
Ecosystem	All the organisms which are found in a location and the area in which they live
Fertilisation	When a female sex cell joins with a male sex cell
Food chain	The direction in which energy flows as one organism eats another
Food web	A diagram showing how different food chains are connected
Germination	The process in which the seed begins to grow
Interdependence	The way living organisms rely on each other to survive
Niche	The specific role an organism has in an ecosystem
Ovary	Contains the ovule
Ovule	The part of plant containing the ovum or egg cells
Petal	The brightly coloured part of a flower
Predator	An animal that eats another animal
Prey	The animal eaten by the predator
Producer	Organisms at the start of a food chain, they convert energy from the Sun
Pollen	The male sex cell of a plant
Pollination	The fertilisation of the ovule
Population	All the organisms that live in one area
Seed	An embryonic plant in a protective outer covering
Sepal	The outer casing of a flower
Stamen	The male reproductive part of a plant
Stigma	The part of a plant that catches the pollen
Style	The part of the plant that holds up the stigma

1. Food chains and webs

- Food chains show the direction in which energy flows when one organism eats another
- The direction of the arrows represent the direction in which the energy flows
- Food webs show how a number of different food chains are connected



- Producers are the organisms which start the food chain, they convert energy from the Sun, making their own food, these are often plants
- Prey are organisms which are eaten by other organisms
- Predators are the organisms which eat the prey

2. Disruption to food chains

- Interdependence is the way in which living organisms rely on each other to survive
- A food chain will be disrupted if one of the organisms die out
- If the producer dies out the rest of the food chain will also die out unless they have a different food source
- If the consumer population die out the number of organisms which they eat will increase unless they are eaten by another organism
- Bioaccumulation is the process by which chemicals such as pesticides and insecticides build up along a food chain

6. Pollination and fertilisation

Pollination is the fertilisation of the ovule, the point at which the pollen is transferred to the ovule from the anther to the stigma, there are two types of pollination

- Cross pollination is between two different types of plant
- Self pollination happens within the same plant

Germination is the process in which the seed begins to grow, for this to occur the seed needs:

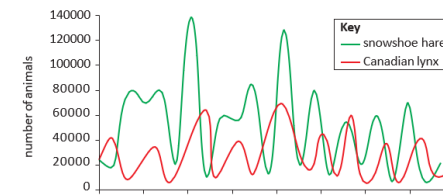
- Water to allow the seed to swell and grow and for the embryo to start growing
- Oxygen for that the cell can start respiring to release energy for germination
- Warmth to allow the chemical reactions to start to occur within the seed

3. Ecosystems

- All of the organisms which live in one area are known as a population
- An ecosystem is all of the organisms which are found in a particular location and the area in which they live in, both the living and non-living features
- A community are all of the areas in an ecosystem, the area in which the organisms live in is known as the habitat
- A niche is the specific role in which an organism has within an ecosystem, for example a panda's diet consists of 99% bamboo

4. Competition

- Competition is the process in which organisms compete with one another for resources
- Animals compete for food, water, space and mates
- Plants compete for light, water, space and minerals
- The best competitors are those who have adapted in order to best gain these resources
- As the number of a predator in a population increases the number of the prey will decrease as more are being eaten
- As the number of the predator decreases the number of the prey will increase as less are being eaten
- The relationship between the predator and the prey is known as a predator-prey relationship

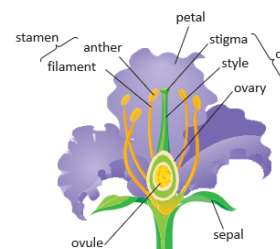


5. Parts of a flower

Stamen

Male part of the flower

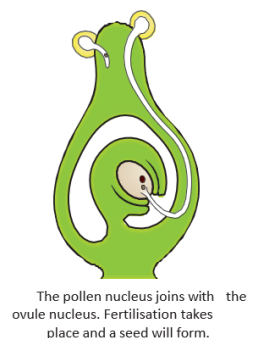
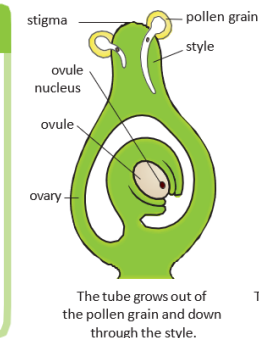
- The anther produces pollen
- The filament holds up the anther



Carpel

Female part of the flower

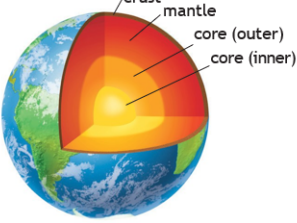
- The stigma is sticky to catch grains of pollen
- The style holds up the stigma
- The ovary contains ovules





Key word	Definition
Asteroid belt	A region of space between the orbits of Mars and Jupiter where most of the asteroids in our Solar System are found orbiting the Sun
Artificial satellite	Man-made structures which can orbit planets
Axis	A tilt of the Earth of 23.4° which gives rise to our seasons
Crust	The rocky solid outer layer of the Earth
Durable	Able to withstand wear, pressure, or damage; hard-wearing
Dwarf planet	A small rocky planet which orbits the Sun
Galaxy	A collection of stars
Gas giants	A large planet consisting of mainly hydrogen and helium
Inner core	The innermost centre of the Earth
Magma	Hot fluid within the Earth's crust which lava and other igneous rock is formed when cooled
Mantle	The second layer of the Earth beneath the Earth's crust
Milky way	The name of our galaxy
Natural satellite	Natural objects which orbit a planet e.g. moons
Outer core	A fluid layer of the Earth composed of mostly iron and nickel
Orbit	The curved path of an object around the Sun
Planet	A celestial body moving in an orbit around a star
Solar system	Our star, the Sun, and everything bound to it by gravity
Star	A luminous ball of gas, mostly hydrogen and helium, held together by its own gravity.
Sun	The Earth's star
Universe	All of space and time and their contents, including planets, stars, galaxies,
Year	The orbital period of a planetary body

The Earth

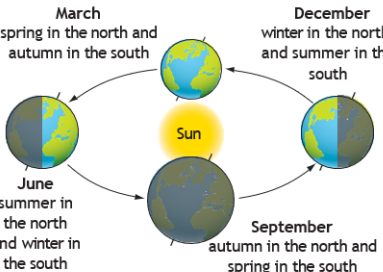


The Earth has three main layers:

- The **crust** is rocky and solid
- The **mantle** is made from mainly solid rock but this can flow
- The **outer core** is liquid metal and the **inner core** is solid

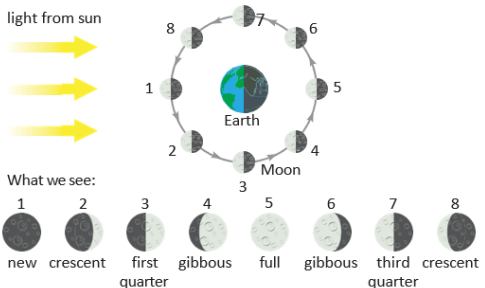
The spinning Earth

- The Earth takes 365 days to **orbit** the Sun, this is one Earth **year**
- The Earth takes 24 hours to spin on its axis, that is why we have day and night
- The Earth's **axis** has a tilt of 23.4° which gives rise to our **seasons**




3. The Moon

- The Moon is a **natural satellite** which orbits the Earth
- One orbit of the Earth takes 27 days and 7 hours, this causes us to see the **phases of the moon**
- The different phases of the moon are caused by different parts of the Moon being lit by the Sun



4. The night sky

- A **galaxy** is a collection of **stars**, our galaxy is known as the **Milky Way**
- Stars** produce their own light
- Planets** are large objects which do not produce their own light but orbit stars
- Natural satellites** include moons which can orbit planets
- Artificial satellites**, such as the International Space Station, are man-made structures which can orbit planets



5. The Solar system

Our **solar system** consists of eight planets which orbit the Sun, four inner and four outer planets

Inner planets	Outer planets
<i>Small and rocky planets (dwarf planets)</i>	<i>Gas giants</i>
Mercury, Venus, Earth, Mars	Jupiter, Saturn, Uranus, Neptune

- Between the inner and outer planets, between Mars and Jupiter, there is the **asteroid belt**
- The planets all orbit the Sun, but the path of their orbits are all slightly different, giving them the look of 'wandering' in the sky

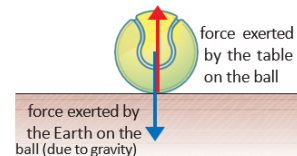


Key word	Definition
Acceleration	Speeding up
Air resistance	A non-contact force exerted by air particles on an object
Balanced	Forces acting on an object are the same
Contact force	When 2 objects are physically touching
Deceleration	Slowing down
Distance – time graph	A graph that shows the story of a journey
Field	The region where an object experiences a force
Force	A push or a pull
Motion	Movement
Gravity	A non-contact force that acts between 2 objects
Gravitational force	The force that brings you down to Earth when you jump
Interaction pair	Equal forces acting in opposite directions
Kilograms	The unit of measurement for mass
Mass	The matter which makes up an object
Newton	The unit of measurement for force
Non-contact	When 2 objects are not touching
Pull	A force
Push	A force
Relative motion	How quickly an object is moving compared to another
Resultant force	The difference between 2 unbalanced forces
Speed	A measure of how quickly or slowly something is moving
Unbalanced	When forces acting on an object are different
Weight	A downward force caused by gravity

1. What is a force?

- A **force** can be a **push** or a **pull**
- A force is measured in **Newtons (N)**
- We measure forces with a **newton meter**
- Forces explain why objects will move, change direction and change speed

- Forces always act in pairs, we call these **interaction pairs**
e.g. the tennis ball exerts a downward force of **weight** onto the table, the table exerts an equal and opposite reaction force onto the ball



2. Types of forces

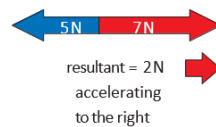
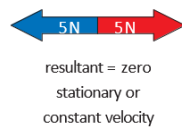
- Contact forces** act when two objects are physically touching
- Air resistance** and **friction** are examples of contact forces
- Non-contact forces** act when two objects are physically separated (not touching)
- Examples of non-contact forces include **gravitational force** and magnetic forces
- We call the region where an object experiences a non-contact force a **field**, examples of these include gravitational fields and magnetic fields

3. Gravity

- Gravity** is a non-contact force that acts between two objects
- Gravitational force** pulls you back to Earth when you jump
- The size of the gravitational force depends on the mass of the two objects and how far apart they are
- Weight** is the downward force caused by gravity acting upon the mass of an object, it is measured in Newtons (N)
- Mass** is the amount of matter within an object, whereas weight is the downward force of the object, we measure mass in **kilograms**
- We calculate weight with the equation:
$$\text{weight (N)} = \text{mass (kg)} \times \text{gravitational field strength (N/kg)}$$
- The value of the gravitational field strength can vary, so although a person's mass would be the same on different planets, their weight would not be

4. Balanced and unbalanced forces

- When forces acting on an object are the same size, but acting in different directions, we say that they are **balanced**
- When forces are balanced, the object is either not moving (stationary) or moving at a constant **speed**
- When the two forces acting on an object are not the same size, we say that the forces are **unbalanced**
- When forces are **unbalanced**, the object will either be in **acceleration** or **deceleration**
- The **resultant force** is the difference between the two unbalanced forces

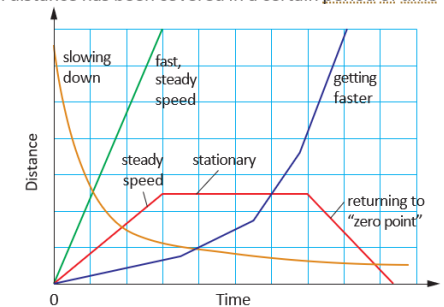


5. Speed

- Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:
$$\text{speed (m/s)} = \frac{\text{distance travelled (m)}}{\text{time taken (s)}}$$
- Relative motion** compares how quickly one object is moving compared to another
- If both objects are moving at the same speed, they are not changing position in comparison to one another, meaning that their relative speed is zero

6. Distance-time graphs

- Distance-time graphs** tell the story of a journey, they show how much distance has been covered in a certain **period of time**



- To find the average speed, the total distance must be divided by the total time



Keyword	Definition
Acid	A solution with a pH value less than 7
Acidic	A solution with a pH between pH1 and pH6
Alkali	A soluble base
Alkaline	A solution with a pH between pH8 and pH14
Base	Any substance which neutralises an acid
Chemical	A substance obtained by a chemical process
Chemical reaction	A change in which atoms are rearranged to create new substances
Concentration	The amount of substance dissolved in 1 litre of water
Concentrated	A solution with many solute particles per litre
Corrosive	A substance that can burn
Displacement	When a more reactive metal reacts with a compound containing a less reactive metal
Hydroxide	An ion containing hydrogen and oxygen
Indicator	A chemical used to identify substances as either acid or alkaline
Irritant	A chemical that makes the skin or eyes itch
Neutral	A solution of pH 7
Neutralisation	Reactions in which an acid reacts with a base to reach pH 7
Oxide	A substance which contains oxygen
Oxidation	A chemical reaction in which a substance combines with oxygen
pH scale	A measurement of a substance being acid, alkaline or neutral
Reversible	A change in which it is possible to get back to the original substances
Reactivity	The likelihood of a substance undergoing a chemical reaction
Reactivity series	A list of metals showing how different metals are compared to one another
Salt	A salt is a compound in which the hydrogen atoms of an acid are replaced by atoms of a metal
Strong acid	An acid in which all the acid particles split up when it dissolves in water
Universal indicator	A chemical which reacts with acids and alkalis to give a colour change
Weak acid	An acid in which only some of the acid particles split up when it dissolves in water

1. Chemical reactions

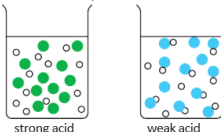
- A **chemical** reaction is a change in which atoms are rearranged to make new substances
- A **reversible** reaction is one where the products can react to get back the substances which you started with, most chemical reactions are not reversible
- You can look for signs that a chemical reaction has taken place such as flames, smells, heat change, a loud bang or gentle fizz

2. Acids and alkalis

- Acids** and **alkalis** are the chemical opposites of one another
- Both acids and alkalis can be **corrosive** and **irritants**
To see whether a substance is an acid or an alkali, we can use an **indicator**. Indicators show how acidic or how alkaline a solution is by showing its position on the **pH scale**, one example of this is **universal indicator**
 - If the solution has a pH value of 1–6 it is **acidic**
 - If the solution has a pH value of 8–14 it is **alkaline**
 - If the solution has a pH value of 7 it is known as **neutral**

3. Acid strength

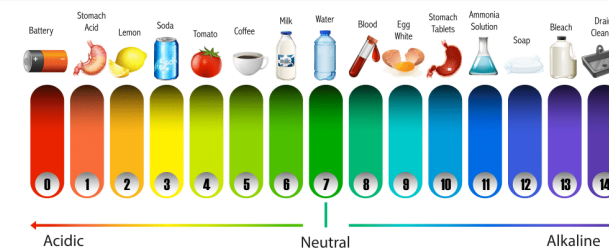
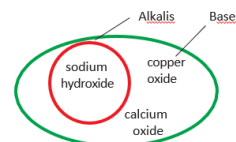
- The strength of an acid depends on how much of the acid has broken apart when it has dissolved in water
- Hydrogen chloride dissolves in water to form hydrochloric acid, this is a **strong acid** as all of the particles split up
- A **weak acid** will have particles that do not all split up



- The **concentration** of the acid is the amount of acid which has dissolved in 1 litre of water
- The more concentrated the acid, the lower the pH

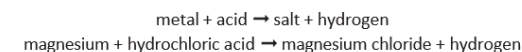
4. Neutralisation

- Neutralisation** reactions are any reaction in which acids react with a **base** to cancel out the effect of the acid
- These reactions form a neutral solution with a pH of seven
- A **base** is any substance which neutralises an acid
- An **alkali** is a base which has been dissolved in water

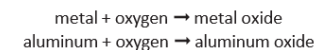


5. Metal reactions

When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off

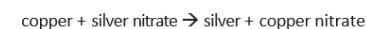


When a metal reacts with oxygen a metal **oxide** is formed, this process is known as **oxidation**



- When a metal reacts with water it forms a metal **hydroxide** and hydrogen gas.
 - The alkali (group 1) metals react most vigorously, giving off a brightly coloured flame
- $$\text{metal} + \text{water} \rightarrow \text{metal hydroxide} + \text{hydrogen}$$
- $$\text{sodium} + \text{water} \rightarrow \text{sodium hydroxide} + \text{hydrogen}$$

When a more reactive metal reacts with a compound containing a less reactive metal, it can take its place, this is known as a **displacement** reaction



- If the metal on its own is higher in the **reactivity series** than the metal in the compound a reaction will take place
- If the metal on its own is lower in the reactivity series than the metal in the compound, a reaction will not take place

6. The reactivity series

- The **reactivity series** describes how reactive different metals are compared to one another
- The higher the metal is in the reactivity series the more reactive it will be this means that it will react much more vigorously

most reactive

potassium	sodium	calcium	magnesium	aluminium	zinc	iron	lead	(hydrogen)	copper	mercury	silver	gold
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least reactive

7. Salts

Salts are substances which are formed when an acid reacts with a metal or metal compound

Different acids form different types of salts:

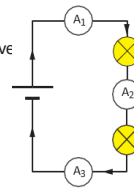
- Hydrochloric acids form chloride
- Sulphuric acids form sulphates
- Nitric acids form nitrates



Key word	Definition
Ammeter	A device to measure current
Atom	The particles all objects are made from
Attract	Opposite charges moving towards each other
Battery	A device that stores chemical energy and converts it to electrical energy
Cell	A single electrical energy source
Conductors	A material with a low electrical resistance
Current	The amount of electric charge flowing through the circuit per second
Electrons	Negatively charged particles
Electric charge	The force experienced when an object is placed in an electromagnetic field
Insulator	A material with a high electrical resistance
Neutral	No charge
Neutrons	Particles with no charge
Parallel	Electric circuits with more than one loop
Potential difference	The amount of energy transferred by cell / battery to the charges
Protons	Positively charged particles
Repel	Similar charges moving away from each other
Resistance	A measure of how easy or difficult it is for charges to pass through a circuit
Series	Electric circuits with only one loop
Voltmeter	A device to measure potential difference

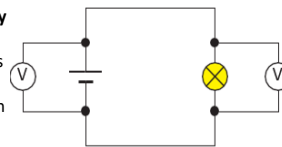
1. Current

- Current** is the amount of **charge** flowing per second
- The charges that flow in a circuit are **electrons**, they are negative charged
- Electrons** leave the negative end of the **cell** and travel around the circuit to the positive end of the cell
- Current has the unit of Amps (A) and is measured with an **ammeter** (which is placed in series or in the main circuit)



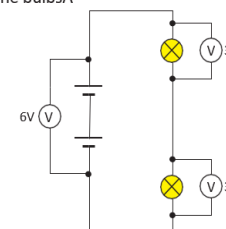
2. Potential difference

- Potential difference** is the amount of energy transferred by the cell or **battery** to the charges
- The value of potential difference tells us about the force applied to each charge and then the energy transferred by each charge to the component which it passes through
- Potential difference has the unit of volts (V) and is measured with a **voltmeter** (which is placed in parallel to the circuit)



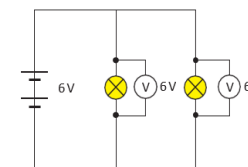
3. Series circuits

- Series** circuits only have one loop
- If one component breaks, the whole circuit stops working
- Current is the same everywhere in a series circuit
- The total potential difference from the battery is shared between the components in a series circuit
- Adding more bulbs decreases the brightness of the bulbs



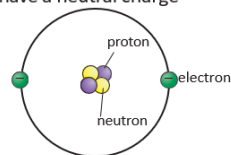
4. Parallel circuits

- Parallel** circuits have more than one loop
- If one component breaks, the rest of the circuit will still work
- Current is shared between the different loops in the circuit
- The potential difference is the same everywhere in the circuit
- Adding more bulbs does not affect the brightness of the bulbs



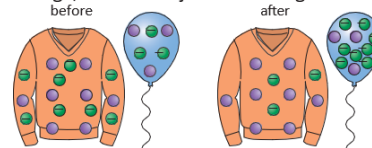
6. The atom

- The **atom** consists of a central nucleus with electrons orbiting around the outside in shells
- Electrons** have a negative charge
- Protons** are inside the nucleus and have a positive charge
- Neutrons** are inside the nucleus and have a neutral charge



7. Static electricity

- Static electricity is caused by the rubbing together of two **insulators**
- This causes electrons to be transferred, leaving one object with a positive charge, and one object with a negative charge



- Like charges will **repel**, opposite charges will **attract**

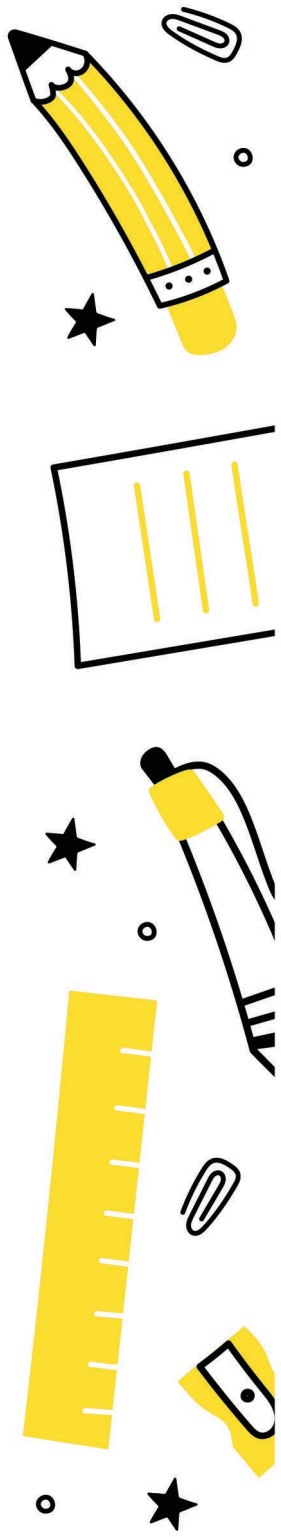


5. Resistance

- Resistance** is a measure of how easy or how hard it is for charges to pass through a component in a circuit
- Resistance has the unit of ohms (Ω)
- Resistance is calculated by measuring potential difference and current and using the following equation:

$$\text{resistance } (\Omega) = \frac{\text{potential difference (V)}}{\text{current (A)}}$$

- Materials with a high resistance are said to be **insulators**
- Materials with a low resistance are said to be **conductors**



THE CORE FOUR

How to Create Flash Cards



1. Identify Knowledge



- Do you have your knowledge organiser?
- Use your book to look at previous misconceptions from whole class feedback.
- What are you creating flashcards on?

2. Colour Coding



- Use different coloured flash cards for different topics. This helps with organisation, NOT recall.

3. Designing



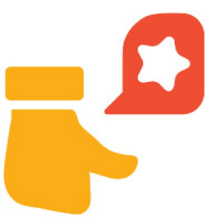
- 1 Question per flash card - make them concise and clear
- Use a one-word prompt, so that you can recall as much as you can
- No extended answer questions
- Number your cards for self-quizzing.

4. Using



- Write your answers down, then check, or say your answers out loud. This clearly shows the gaps in your knowledge.
- Do not just copy and re-read.
- Shuffle the cards each time you use them.
- Use the Leitner system to use flash cards every day.

5. Feedback



- How have you performed when you look back at your answers?
- Is there anything you need to revisit in more detail?
- Is your knowledge secure? If so, move on to applying knowledge in that area in specific extended exam questions.

THE CORE FOUR REVISION TECHNIQUES



Brain Dumps



1. Identify Knowledge

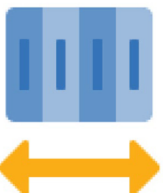
- Identify the knowledge / topic area you want to cover.

2. Write it Down



- Take a blank piece of paper/white board and write down everything you can remember about that topic (with no prompts)
- Give yourself a timed limit (e.g 10 minutes)

3. Organise Information



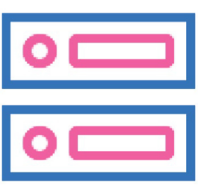
- Once complete and you cannot remember any more, use different colours to highlight / underline words in groups.
- This categorises / links information

4. Check Understanding



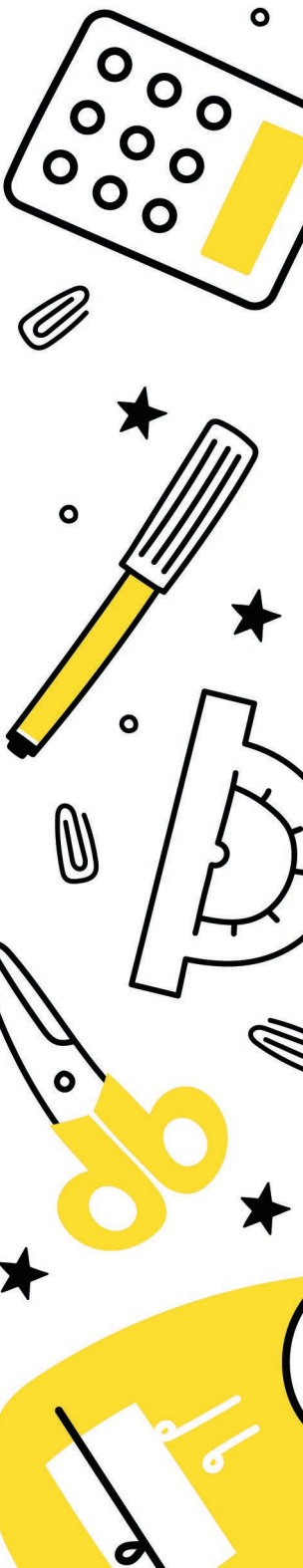
- Compare your brain dump to your Knowledge Organiser or book and check your understanding.
- Add any key information you have missed (key words) in a different colour.

5. Store and Compare

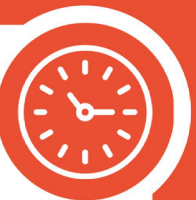


- Keep your brain dump safe and revisit it.
- Next time you attempt the same topic, try and complete the same amount of information in a shorter period of time or add more information.

THE CORE FOUR REVISION TECHNIQUES



THE CORE FOUR



Revision Clocks



1. Identify Knowledge

Select a topic you wish to revise. Have your class notes, knowledge organiser or revision books ready.



2. Designing

You can make your own revision clock by drawing a clock in the centre of a page and dividing it into 12 chunks. You can also use an existing template from your teacher, or one you can find online.



3. Manageable Chunks

Organise your revision notes into 12 sub-topics and make brief notes for each sub-topic into one of the segments on the page, creating manageable chunks of information. Combine text with images to help retain the information.



4. Using Revision Clocks

Revise each segment for 5 minutes. Turn the clock over and recite the sections out loud or ask someone to quiz you.



5. Check Understanding

How have you performed when you compare you answers to what you have written? Is your knowledge secure?

Remember to repeat the process regularly, using different techniques to answer the questions. Put it somewhere visible for you to use again.

THE CORE FOUR REVISION TECHNIQUES

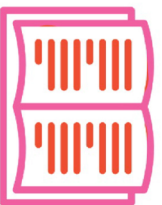


Self Quizzing



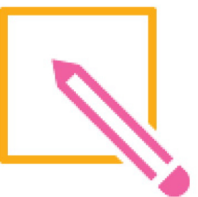
1. Identify Knowledge

- Identify knowledge / content you wish to cover



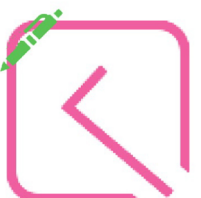
2. Review and Create

- Spend around 5 - 10 minutes reviewing content (knowledge organisers / class notes / textbook.)
- Create 10 questions on the content (if your teacher has not provided you with questions already)



3. Cover and Answer

- Cover up your knowledge and answer the questions from memory.
- Take your time and where possible answer in full sentences.



4. Self Mark and Reflect

- Go back to the content and self-mark your answers in green pen.



5. Next Time

- Revisit the areas where there were gaps in knowledge and include these same questions next time.

THE CORE FOUR REVISION TECHNIQUES