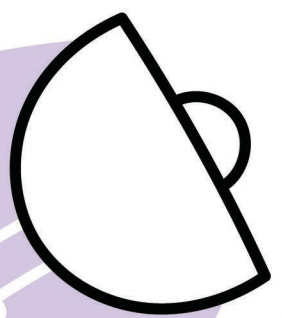
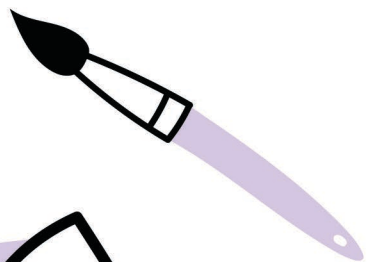
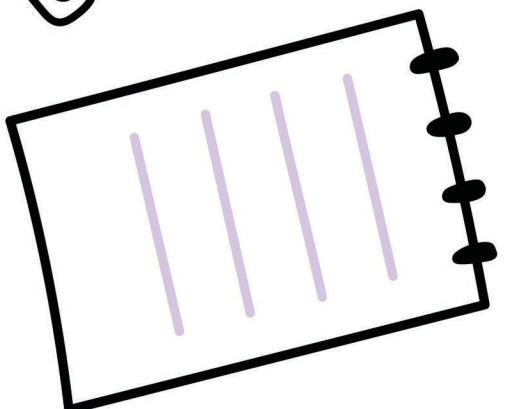
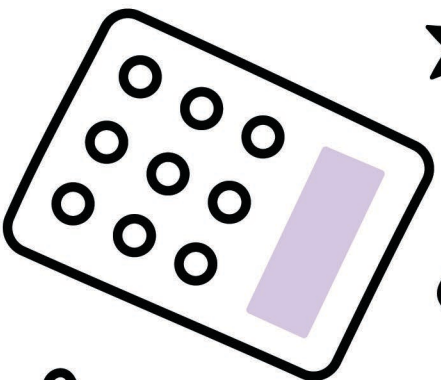
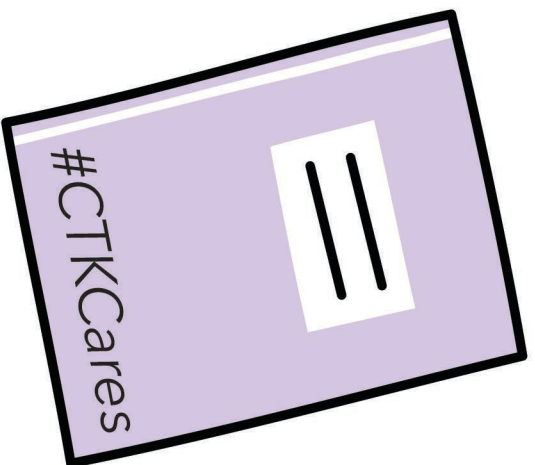
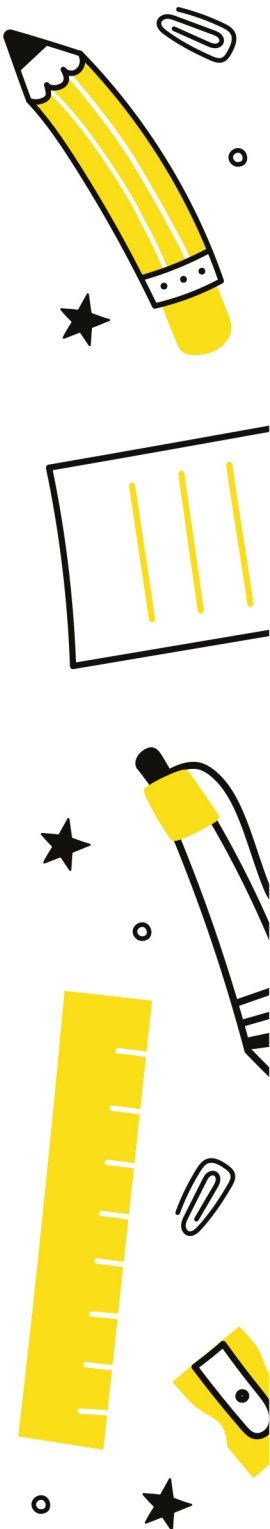




CHRIST THE KING
KNOWLEDGE
ORGANISER

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

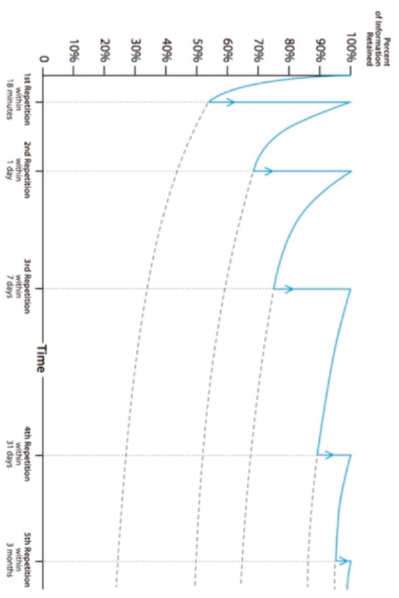
At the start of each term, you will receive a knowledge organiser booklet that contains content for all subject areas. You will use your knowledge organiser in your lessons, in tutor time, and during homework tasks. An important aspect of your revision for assessments and end-of-year examinations will 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

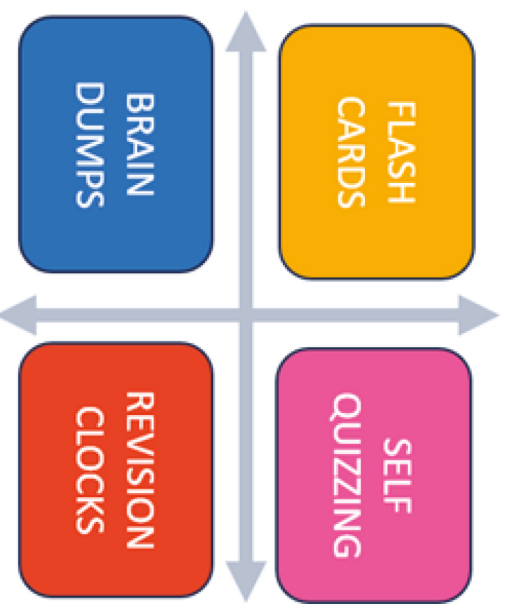
The best way to use your knowledge organisers is to regularly use one of our Core 4 Revision strategies as part of your home learning. These strategies will be explained to you in more detail in tutor time, by your class teachers and as part of your Personal Development lessons.

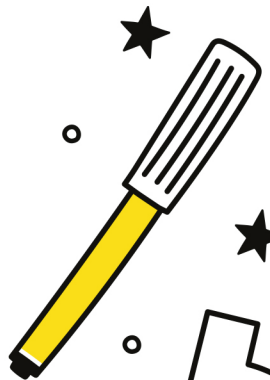
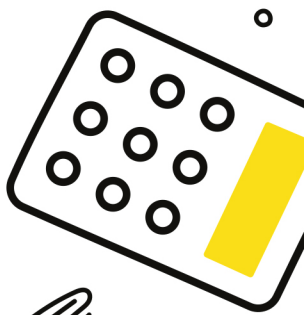
- Flash Cards:** Use the information from your knowledge organiser to create flashcards – these could be double sided, with a question on one side and the answer on another, or a keyword on one side and the definition on the other.
- Self Quizzing:** There are different ways you can self-quiz:
 - Look, cover, write, (say), check
 - Create gaps fills
 - Create questions for the information you want to learn and then answer them from memory
- 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.

Rate of Forgetting with Study/Repetition



- 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’.





Homework Schedule

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

This will consist of:

- o Knowledge Organiser and Online Learning as directed by your teachers.
- o If you have no tasks set, carry out Knowledge Organiser activities as per the Knowledge Organiser timetable below.
- o 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)

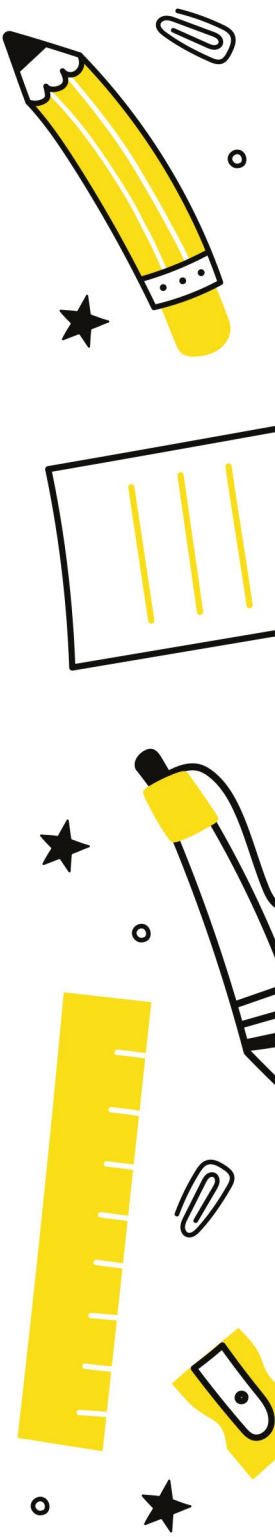
Read 20 minutes a day and you'll read 1,800,000 words per year.



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?

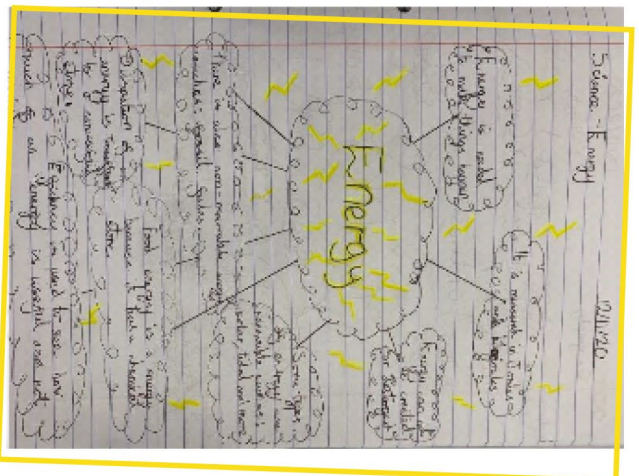
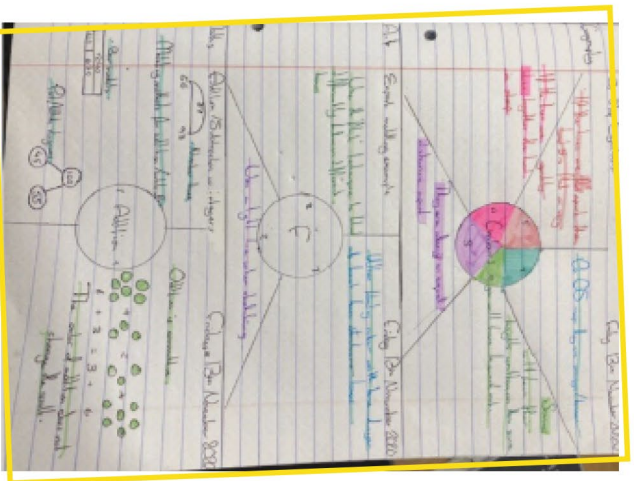
Each homework must meet the following 5 requirements:

- 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:



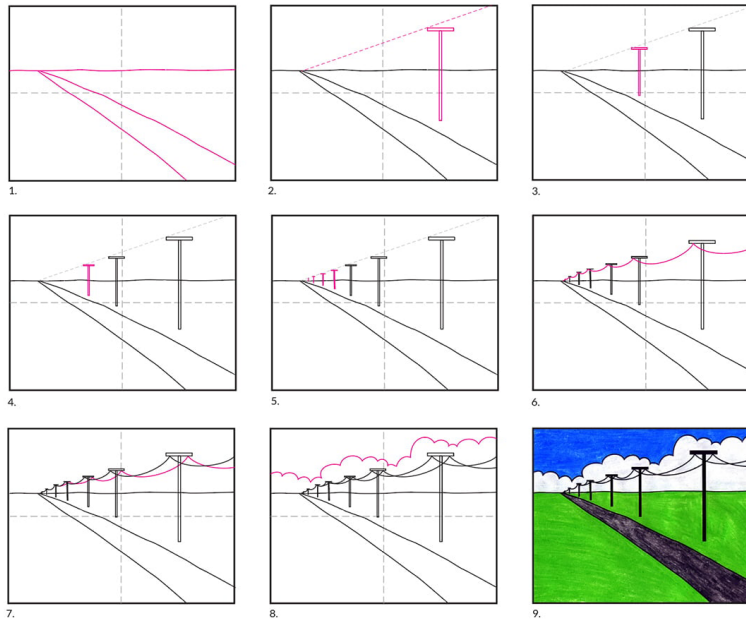
DON'T FORGET!

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.

	Term	Definition
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	An art style that focuses on depicting subject matter as it appears in everyday life, without artificiality or exaggeration.
8	Guidelines	Light pencil lines which sketch out the basic image.
9	Narrative	Can be used in art to help describe.



Drawing Guide: 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)
Location: Nottingham based artist.
Style: She creates cityscape illustrations that have a **Pop Art** feel and depict everyday scenes from local areas in Nottingham.



L.S. Lowry (1887–1976)
Location: Born Salford, Manchester.
Style: Lowry painted mostly industrial scenes of the North West of England. He developed a unique realist style and is most famous for his "matchstick" looking figures.



Key words	
1. Thermoplastic	A type of plastic that can be melted and reshaped many times. It becomes soft when heated.
2. Thermoset	A plastic that sets permanently when first heated. It cannot be melted or reshaped again.
3. Acrylic	A thermoplastic that is strong, lightweight, and glossy. Often used in signs, displays, and school projects.
4. Jig	A tool that helps you cut, drill, or shape materials accurately and repeatedly .
5. Marking out	The process of drawing lines or shapes on a material to show where to cut, fold, or drill.

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.
Pillar Drill		A large, fixed drilling machine used to make accurate vertical holes in materials like wood, metal, or plastic.

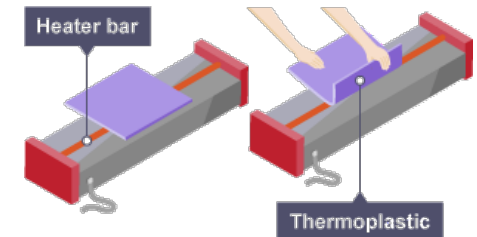
Know your safety signs



Plastics
 Most Plastics are made from **Oil**
 They come **self finished**

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.



- Thermoplastics**
- Can be re-cycled
- Have plastic memory
- Can be re-shaped with heat
- Acrylic
- High Impact Polystyrene (HIPs)

- Thermosetting Plastics**
- Can not be re-cycled
- Heat resistant
- No plastic memory
- Epoxy Resin Glue
- Phenol-formaldehyde

Process of converting oil to plastic	
Extraction	Raw materials, such as crude oil, are extracted from the ground.
Refined	The crude oil is transported to a refinery where it is cleaned and prepared for further processing.
Fractional Distillation	The oil is heated and separated into different parts, like petrol and the part used to make plastic.
Cracking	Big oil molecules are broken into smaller ones, which are useful for making plastic.
Polymerisation	The small molecules are joined together to make long chains called plastic.



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

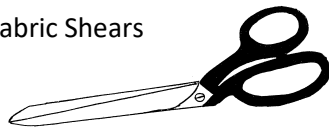
Embroidery Scissors



Iron



Fabric Shears



Needle



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

<p>Natural</p>	From plants or animals.	<p>Plants – Cotton and Linen.</p> <p>Animals - Silk and Wool.</p>	They are renewable, sustainable and biodegradable.	
<p>Synthetic</p>	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
<p>Weaving</p> <p>woven</p>	<p>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.</p>	<p>Woven Fabrics are strong and stable they are used to make: Clothing, curtains, furniture, blazers, sportswear.</p>
<p>Knitting</p> <p>knit</p>	<p>Weft knitting can be made by hand or machine using yarn that forms interlocking loops across the width of the fabric.</p> <p>Warp knitting is made by machine that forms vertical interlocking loops.</p>	<p>Knitted fabrics are stretchy, comfortable and warm to wear they are used to make: Clothing, such as jumpers and cardigans.</p>
<p>Bonded</p> <p>non-woven</p>	<p>Bonded fabric is made from webs of fibres that are bonded together with glue, heat, stitches or needle punching.</p> <p>Felt is made from matting wool fibres together using moisture, heat and pressure.</p>	<p>Bonded fabrics do not fray but are weak, they are used to make:</p>



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



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.	

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.



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.



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

Key Themes in Macbeth
Ambition vs morals
Good vs evil
Masculinity and femininity
Status and power
Superstition
Fate and freewill

Macbeth Quotes	
"I have no spur to prick the sides of my intent, but only vaulting ambition, which o'erleaps itself and falls on th'other"	Macbeth (Act 1 Scene 7)
"Nothing is but what is not."	Macbeth (Act 1 Scene 3)
"Is this a dagger which I see before me, the handle toward my hand?"	Macbeth (Act 2 Scene 1)
"What's done cannot be undone."	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)
"OUT! DAMNED SPOT!"	Lady Macbeth (Act 5 Scene 1)
"There's daggers in men's smiles."	Donalbain (Act 2 Scene 3)
"By the pricking of my thumbs, something wicked this way comes."	Second Witch (Act 4 Scene 1)



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

Physical Keywords	Definition
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.

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.
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.

General Definitions & Performance Concepts	
Devise	To create a performance from scratch, sometimes using a stimulus.
Atmosphere	The overall mood or feeling created for the audience.
Music	Can be added to build tension or create an atmosphere.
Tension	A growing sense of expectation which engages the audience.
Climax	The highest point of tension in the storyline.
Stimulus	A starting point for ideas.
Brainstorm	A sharing of initial ideas with your group.



1. Key Language Devices Used by Writers

Table with 2 columns: Term, Definition. Rows include Adjective, Alliteration, Emotive language, Imperative verb, First person pronoun, Juxtaposition, Metaphor, Personification, Repetition, Rhetorical question, Rhyme, Simile, Verbs, Volta.

2. Key Terms for Poetry

ballad - a poem or song that describes tragic events in short stanzas, often with a moral purpose
context - information such as: where and when the text was written, who it was written by, and what was happening at the time when it was published.
purpose - the reason why a poet chose to write the poem - his or her intention
speaker - a character or voice that the poet has created when the poem was written. The poet writes the text and is not necessarily the same as the speaker.
stanza - a grouped set of lines within a poem (another way of saying verse)
title - the name of a poem, play, novel - that may give the reader some ideas about the text

3. Key Connectives You Can Use for Comparison

comparing - identifying differences and similarities between two texts
analysing - being able to explain the poet/s choices of form and language and comment on the effect

Comparing differences

However ... Whereas ... Conversely ...
On the other hand ...

Comparing similarities

Equally ... Similarly ... Likewise ...
In the same way ...

Table with 2 columns: Element, Sentence Starters / Prompts. Rows include Point, Evidence, Technique, Explain effect, Relate.



1. The 4 C's



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

2. Using a knife safely

Bridge



Claw



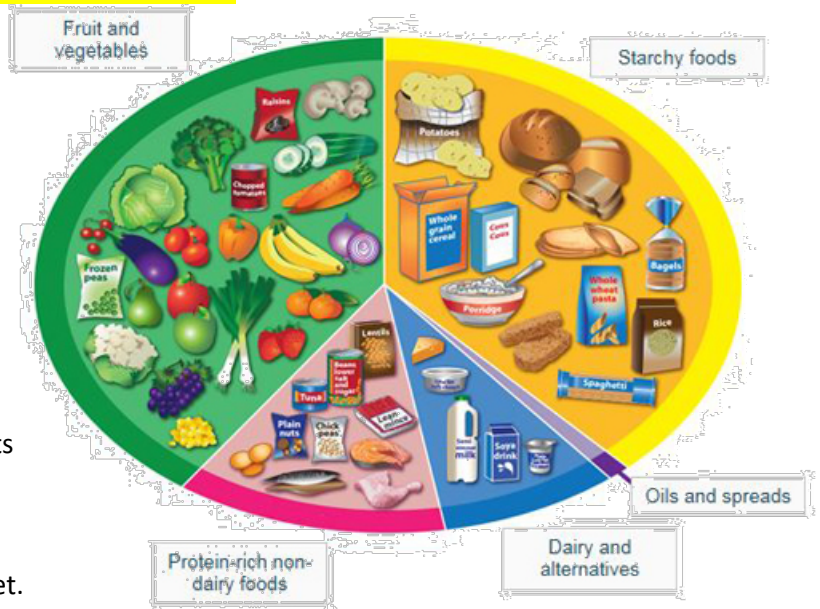
- Use a firm grip and even pressure.
- Use the bridge or claw to hold food whilst cutting.
- Always cut down towards the chopping board, never cut towards yourself.
- Carry a knife with the point facing downwards.
- Don't touch the knife blade.
- Always put a knife down, don't hand it to someone else.
- 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. The Eatwell Guide



Watch this video for a recap.



This is the governments guideline showing a healthy balanced diet.

4. Heat Transfer and Cooking Methods

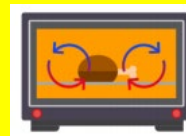
Conduction



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.



5	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.

7. 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.

8. 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.



9.





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.

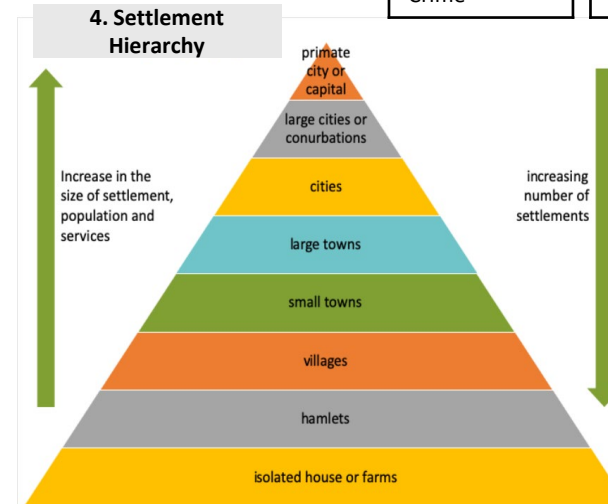
J'habite dans un petit appartement au centre-ville de Paris.	1	I live in a small flat in the centre of Paris
Paris est la capitale de la France et c'est situé dans le nord du pays.	2	Paris is the capital of France and it is situated in the north of the country.
Ici, on peut visiter la Louvre, le tour 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

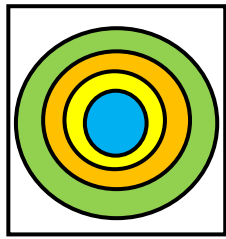


- Central Business District (CBD)
- Industry along transport route
- Shanty towns
- Basic housing
- High cost housing

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

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

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



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

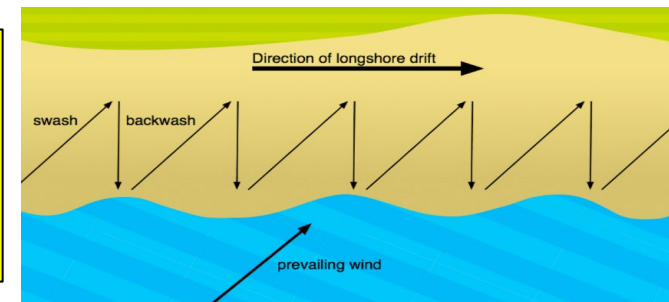
5. Features of a river valley

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

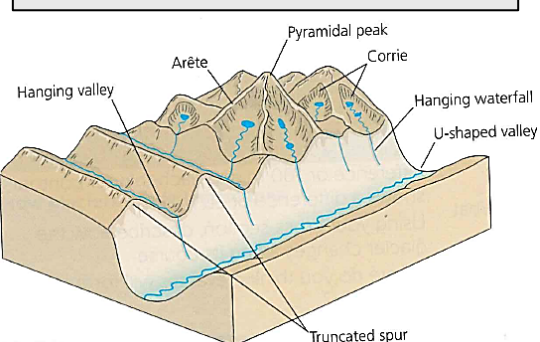
7. Longshore Drift – the zigzag movement of material along a beach in the direction of wind



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.



2. Key dates	
1485	The Tudor reign begins
1534	Act of Supremacy – Henry becomes Head of the Church of England
1558	Elizabeth becomes Queen – longest Tudor reign
1588	The Spanish Armada – England defeats Spain
1603	End of Tudor Period / beginning of the Stuart period.

2. Key People	
Henry VII	Won the throne in 1485 and ended the Wars of the Roses
Henry VIII	Broke away from Rome and the Catholic Church so he could divorce Catherine of Aragon.
Edward VI	Made England more Protestant
Mary I	Tried to return England to being Catholic
Elizabeth I	Created a religious compromise and defeated Spain in the Spanish Armada.

3. Key terms	
Reformation	Change from Catholic to Protestant church
Heretic	A person who does not have the same opinion as what is generally believed
Catholic	Christian who follows the Pope
Protestant	Christian who rejected the Pope
Heir	Person who will inherit the throne
Treason	Crime of betraying your country
Propaganda	Information used to influence opinions

4. Tudor Life	
Gentlemen	These people were very and owned lots of land- 5% of the population
Citizens	Lived in towns and were rich making money buying and selling goods (5% of population).
Yeomen	These were farmers who owned or rented land (30% of population)
Laborers	Similar to peasant status in the middle ages, most lived in the country (60% of population)
Paupers	People who had no jobs and relied on charity
Poor Law 1601	Poor people had to stay in their own town/village and not wander

5. Crime and punishment	
Vagabonds	A person who wanders from place to place without a settled home or regular employment
Torture	the intentional and deliberate infliction of severe physical or mental pain or suffering on a person
Justices of the peace	Members of the local community who volunteer to act as judges in Magistrates' Courts

6. Spanish Armada 1588	
Armada	Fleet of ships
Causes	Marriage rejection, religious differences, piracy
Consequences	Showed Elizabeth as a strong leader, Catholicism became increasingly unpopular, the navy grew stronger

7. Exploration	
Francis Drake sailed around the world between 1577–1580	
Explorers wanted gold, land, and new trade routes to Asia	
Journeys were dangerous due to storms, disease, and lack of food	



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)

3	Considerations when evaluating software:
	• Game elements work effectively
	• Graphics are high quality
	• Gameplay is excellent with increasing player challenge
	• Coding is highly efficient



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

Rectangle Square

Parallelogram Rhombus

Trapezium Kite

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

$5 \times 4 = 20$

Factor of 20 Multiple of 4 Multiple of 5

3

62×29

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

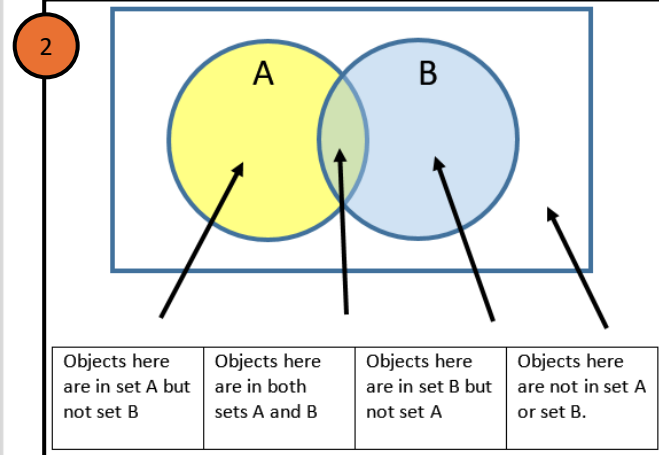
1800 is a reasonable estimate.



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

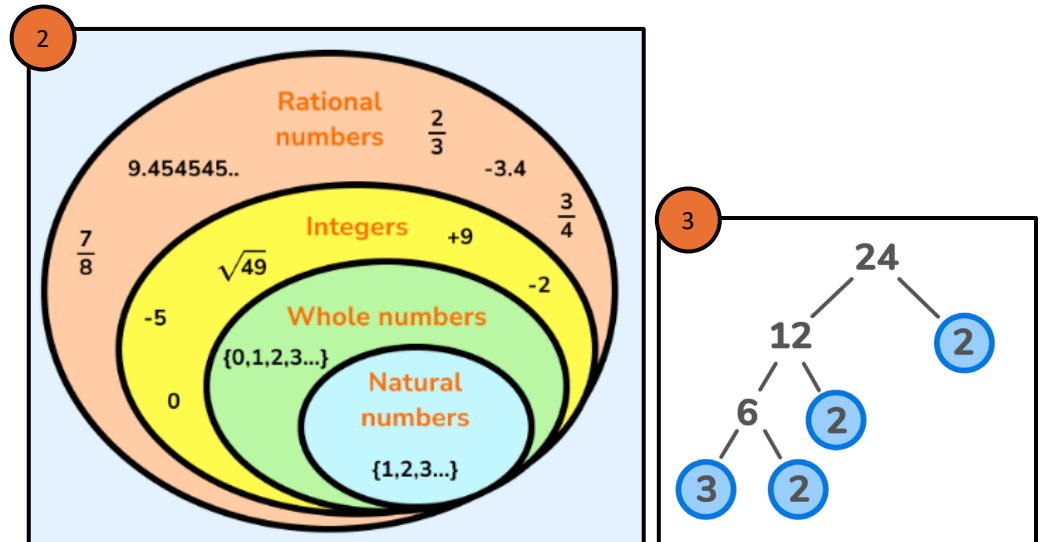
$$P(E) = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}}$$

$0 < P(E) < 1$

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





Key Words	
Term	Description
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. Rule for a chord: play a note — miss a note — play a note — miss a note — play a note.
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'.

Fundamentals of Blues Music

Origins and History

- **Origins:** African slaves brought their musical traditions with them when they were transported to work in the North American colonies.
- **Work Songs:** These were sung rhythmically in time with the task being done.
- **Oral Tradition:** Songs were passed on orally (word of mouth) and were never usually written down.
- **Country Blues:** Early styles of Blues were known as country blues and usually featured a solo singer accompanied by guitar or piano, sometimes with added harmonica or drums.
- **Lyrics:** Themes often included depression, lack of money/employability, loneliness, and missing family.

Musical Structure and Elements

- **12 Bar Blues:** The name of the structure used in blues music. It is split into 3 lines (or sections) of 4 bars each.
- **Song Structure:**
 - **Modern:** Sometimes follows modern pop structures like Verse-Chorus.
 - **Older:** Usually consists of 3 lines where Lines 1 & 2 are the same and line 3 is usually different. This pattern also applies to the lyrics.
- **Call and Response:** A technique where phrases from a lead singer (the "call") are followed or responded to by others.
- **Musical Elements:** Used separately and together to help create the mood and expression of emotion in a song.

Technical Components

Chords and Theory

- **Definition:** A chord is 3 notes played together at the same time, also called a triad.
- **The "Rule" for a Chord:** Play a note — miss a note — play a note — miss a note — play a note.
- **Blues Chords:** Blues music primarily uses 3 chords: **C, F, and G**. These are played at the beginning of each of the 12 bars.
 - **C** = CEG
 - **F** = FAC
 - **G** = GBD
- **12 Bar Progression Example:**
 - C /// C /// C /// C ///
 - F /// F /// C /// C ///
 - G /// F /// C /// C ///

Melody and Rhythm

- **Blues Scale:** A specific selection of notes put together to create a "bluesy" sound. It is often used for notes during improvised sections.
- **Improvisation:** Music that is performed and made up "on the spot". It is traditionally not written down or preplanned; performers use musical knowledge to create something from scratch.
- **Walking Bass:**
 - The name for the bassline heard in Blues music, usually played by the bass guitar.
 - It is played at a steady, "walking" tempo.



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	6. Emotional health	
5a. Stronger bones (increased bone density)	6a. To increase self esteem confidence—increased endorphins released	
5b. Lower cholesterol/ reduced obesity	6b. Reduce risk of age related diseases– dementia	
5c. Increase development of components of fitness	6c. Releases stress and tension	
5d. Increased life expectancy	6d. Fun/ enjoyment/ reduced boredom	
7. Social health	8. Negative effects of training on:	
7a. To develop teamwork skills	8a. Physical health—overexertion leading to heart failure /over use injuries	
7b. To meet new people/ friends	8b. Emotional health– training complete injury and cause depression	
7c. To develop communication skills	8c. Social health—training long hours means less time spent with family	
7d. Develop leadership skills		
6) Positive effects of exercise:	7) Negative effects of exercise :	
Helps you cope with the physical side of life	Put you at risk of a sport related injury	
Even moderate exercise improves how long you will live	Time off to recover from injury can lead to psychological problems	
Lowers psychological illness	Competition pressure can lead to psychological problems	
Lowers risk of eating problems	Stresses and needs of a particular sport can lead to long term health problems	
Gives you a lower resting heart rate and lower blood pressure		
Can help weight control		



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 his 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.



Dialogue and Encounter



Key Quotes	
1	“That they may all be one.” (John 17:21)
2	“The desire to recover the unity of all Christians is a gift of Christ and a call of the Holy Spirit.” (Catechism of the Catholic Church, 820)
	“Scripture alone is the true lord and master of all writings and doctrine.” – Martin Luther

Key Words		
1	Ecumenical Council	In Catholicism, a meeting of the bishops of the worldwide Church at the invitation of the Pope, to decide on matters of the Church.
2	Schism	A split or division within a group
3	Dogma	An essential belief which becomes a binding teaching in Catholicism
4	Reform	To make changes to something
5	Christian Unity	All Christians are united in common beliefs such as the importance of Jesus and his teachings.
6	Ecumenism	The aim of promoting unity among the Christians Churches of the world.

Key Facts	
1	A schism is a split in the Church that happens when disagreements cannot be resolved, leading to new Christian groups forming.
2	Early disagreements (e.g. about the nature of Jesus) led to divisions such as Arianism , showing that different beliefs can cause separation.
3	Church councils (like Nicaea and Chalcedon) were used to clarify beliefs (dogma) , but not all groups accepted the decisions, causing further splits.
4	The Protestant Reformation (16th century) created major divisions in Western Christianity, with Protestants rejecting some Catholic teachings.
5	Martin Luther challenged Church practices (e.g. indulgences) and argued that the Bible alone is the main authority.
6	Over time, disagreements about beliefs, authority, and practices led to the creation of many different Christian denominations .
7	Ecumenism is the movement to promote unity among Christians , encouraging cooperation despite differences.
8	The Catholic Church teaches that religious education should promote dialogue, understanding, and respect for different beliefs , helping people live together peacefully





1. Variation

- The differences in characteristics of living things is known as **variation**
- There is a large amount of variation between different **species**, but within species many more characteristics are shared
- Even though two organisms may look the same, they will always have variation between them

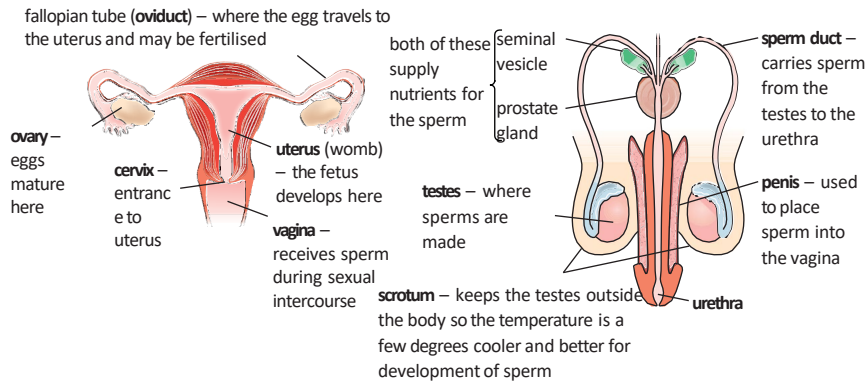
Inherited variation	Environmental variation
<ul style="list-style-type: none"> Is anything that comes directly from your parents, anything that you inherit Examples can include lobe less or lobed ear lobes and eye colour 	<ul style="list-style-type: none"> Is any type of variation that is caused by your surroundings Factors that can cause environmental variation include diet, education and lifestyle

- Environmental factors can also impact inherited factors, for example a poor diet can affect height or your exposure to the sun can affect skin tone
- Characteristics which are inherited and not affected by environmental variation include natural eye colour, blood group and genetic diseases

2. Adaptations

- Adaptations** are characteristics which organisms have developed to best survive in their surroundings
- Organisms with the best suited adaptations can breed and pass these on
- Those who are not best adapted will die out and not be able to pass on their genes

3. Reproductive systems

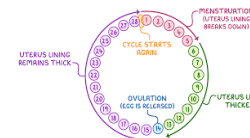


4. Adolescence

- Adolescence** is the process in which a child changes into an adult, it involves both physical and emotional changes
- The physical changes alone in this time are known as **puberty**, these are caused by **sex hormones**

5. The menstrual cycle

- The **menstrual cycle** is the process in which an egg is released from an ovary and leaves through the vagina
- Day 1: blood from the uterus lining leaves through the vagina, which is known as a **period**
- Day 5: the bleeding stops and the uterus lining starts to re-grow
- Day 14: an egg is released from one of the ovaries during **ovulation**
- If the egg is **fertilised** than the menstrual cycle stops until the baby is born



6. Fertilisation, implantation and gestation

- Egg cells and sperm cells are also called **gametes**, and each contains half the genetic information needed to form a complete organism.

Egg cells		Sperm cells
An egg is released by the ovaries every month	_____ egg cell	Sperm cells are produced in the testicles/testes
The egg cell is moved along the oviduct towards the uterus by cilia	cilia	Sperm are mixed with nutrients and fluid from the glands to form semen
nucleus	nucleus	During sexual intercourse a man will release semen into the vagina (ejaculation)
If a sperm meets the egg fertilisation may happen		
The fertilised egg may then implant in the uterus lining and form an embryo (ball of cells)		

- During **gestation** the developing **fetus** needs nutrients from the mother, these are passed through the **placenta** which is connected to the fetus by the **umbilical cord**
 - Nutrients are passed from the mother to the baby and waste products are passed back from the baby to the mother
 - The baby is protected from bumps to the mother by the **amniotic sac** which acts as a shock absorber
- Timeline of fetal development:
- Just a dot
 - 1 week – cells beginning to specialise
 - 3 mm long
 - 4 weeks – spine and brain forming, heart beating
 - 3 cm long
 - 9 weeks – tiny movements, lips and cheeks sense touch, eyes and ears forming
 - 7 cm long
 - 12 weeks – fetus uses its muscles to kick, suck, swallow, and practise breathing

Ovary	Part of the female reproductive system that holds and matures the egg cells
Oviduct	The tube the egg travels down to the uterus
Ovulation	When the mature egg is released from the ovary
Penis	Part of the male reproductive system that places sperm into the vagina
Period	The loss of blood and tissue from the uterus
Placenta	Provides nutrition to the developing foetus
Puberty	The physical changes during adolescence
Scrotum	Part of the male reproductive system that keeps the testes outside the body
Semen	The fluid that supplied the nutrients for the sperm
Sex hormones	Hormones involved in puberty and adolescence
Species	Individuals that can breed and produce fertile offspring
Sperm cell	The male reproductive cell
Sperm duct	Part of the male reproductive system which carries the sperm from the testes
Testicles	Part of the male reproductive system where sperm are made
Umbilical cord	Carries the blood from the mother to the foetus
Urethra	Part of the male reproductive system the tube that carries the semen out of the penis
Uterus	Part of the female reproductive system where the foetus develops
Vagina	Part of the female reproductive system which receives the sperm during intercourse
Variation	The differences between individuals of the same species

Keyword	Definition
Adaptation	Characteristics which organisms develop to best survive in their surroundings
Adolescence	The physical and emotional process of a child changing into an adult
Amniotic sac	A protective membrane filled with fluid that protects the foetus in the uterus
Cervix	The entrance to the uterus
Cilia	Tiny hairs on the surface of cells in the fallopian tubes
Egg cell	Female sex cell released from the ovary
Embryo	A ball of cells that can become a foetus

Environmental variation	Variation caused by the surroundings
Fertilisation	When a sperm cell joins with an egg cell
Fetus	The unborn offspring
Gamete	Egg cells and sperm cells
Inherited variation	Characteristics inherited from your parent's genes
Menstrual cycle	The process in which an egg is released from an ovary and leaves the vagina



1. Chemical reactions

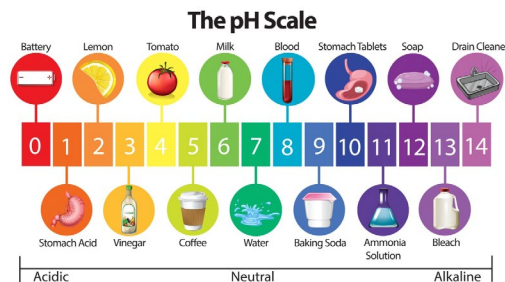
- A **chemical** reaction is a change in which atoms are rearranged to make new substances
- A **reversible** reaction is one where the products can react to get back the substances which you started with, most chemical reactions are not reversible
- You can look for signs that a chemical reaction has 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**

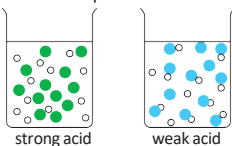
To see whether a substance is an acid or an alkali, we can use an **indicator**. Indicators show how acidic or how alkaline a solution is by showing its position on the **pH scale**, one example of this is **universal indicator**

- 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

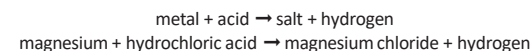
- Neutralisation** reactions are any reaction in which acids react with a **base** to cancel out the effect of the acid
- These reactions form a neutral solution with a pH of seven
- A **base** is any substance which neutralises an acid
- An alkali is a base which has been dissolved in water

7. Salts

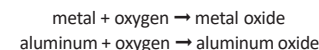
- Salts** are substances which are formed when an acid reacts with a metal or metal compound
- Different acids form different types of salts:
- Hydrochloric acids form chlorides
 - Sulphuric acids form sulphates
 - Nitric acids form nitrates

5. Metal reactions

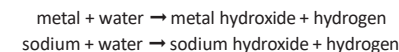
When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off



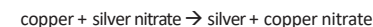
When a metal reacts with oxygen a metal **oxide** is formed, this process is known as **oxidation**



- 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



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

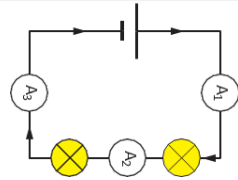
Keyword	Definition
Acid	A solution with a pH value less than 7
Acidic	A solution with a pH between pH1 and pH6
Alkali	A soluble base
Alkaline	A solution with a pH between pH8 and pH14
Base	Any substance which neutralises an acid
Chemical	A substance obtained by a chemical process
Chemical reaction	A 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



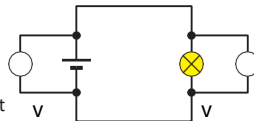
1. Current

- **Current** is the amount of **charge** flowing per second
- The charges that flow in a circuit are **electrons**, they are negatively 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)



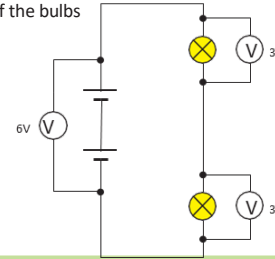
2. Potential difference

- **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)



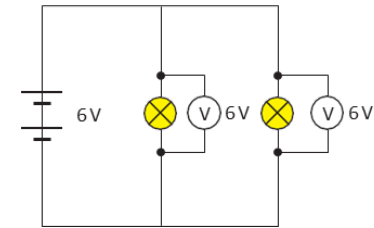
3. Series circuits

- **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



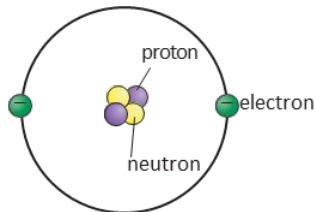
4. Parallel circuits

- **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



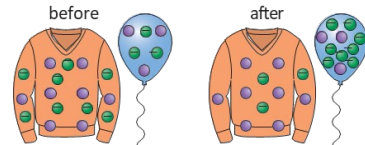
6. The atom

- 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

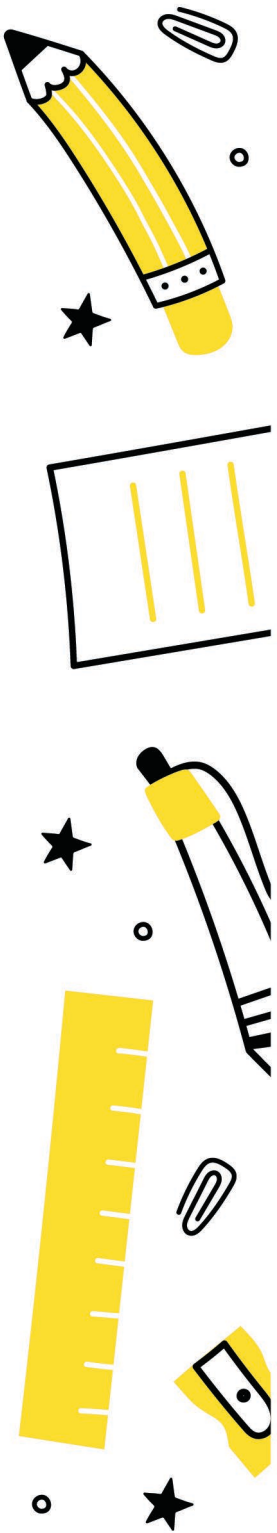
- **Resistance** is a measure of how easy or how hard it is for charges to pass through a component in a circuit
- Resistance has the unit of ohms (Ω)
- Resistance is calculated by measuring potential difference and current and using the following equation:

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

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

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



THE CORE FOUR

How to Create Flash Cards



1. Identify Knowledge

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



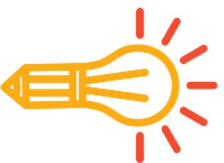
2. Colour Coding

- 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.



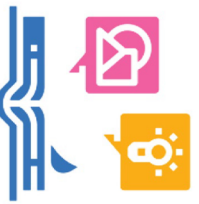
THE CORE FOUR REVISION TECHNIQUES



Brain Dumps

1. Identify Knowledge

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



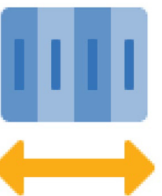
2. Write it Down

- 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



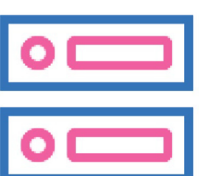
4. Check Understanding

- 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.

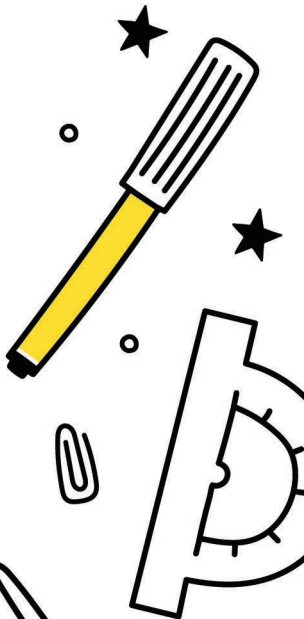
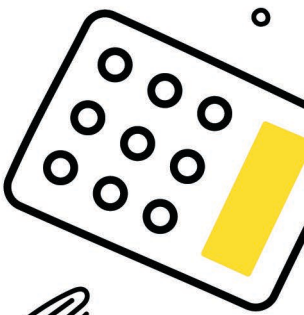


5. Store and Compare

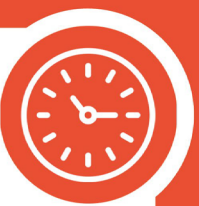
- Keep your brain dump safe and revisit it.
- Next time you attempt the same topic, try and complete the same amount of information in a shorter period of time or add more information.



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 your 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.

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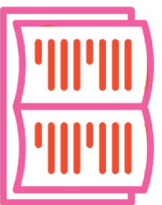


Self Quizzing



1. Identify Knowledge

- Identify knowledge / content you wish to cover



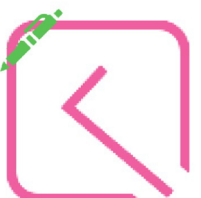
2. Review and Create

- Spend around 5 - 10 minutes reviewing content (knowledge organisers / class notes / textbook.)



3. Cover and Answer

- Cover up your knowledge and answer the questions from memory.



4. Self Mark and Reflect

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



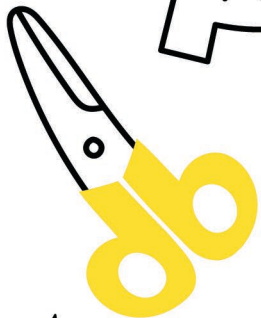
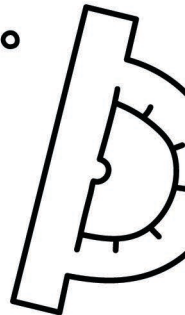
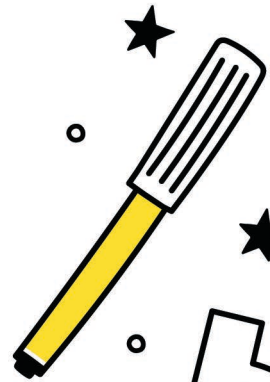
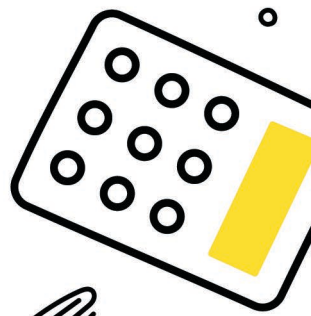
5. Next Time

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

- Create 10 questions on the content (if your teacher has not provided you with questions already)

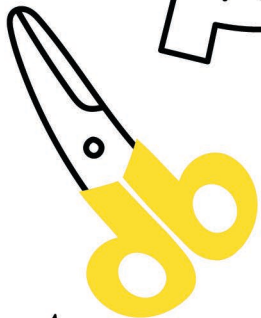
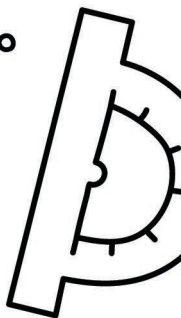
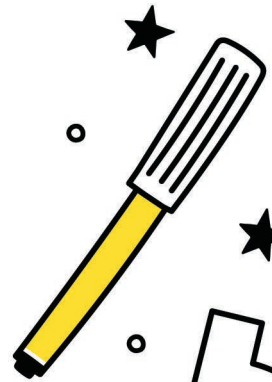
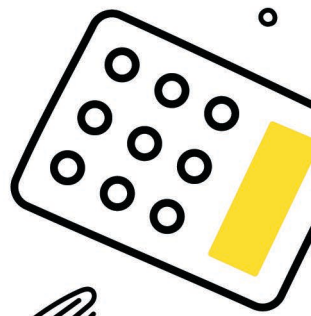
- Take your time and where possible answer in full sentences.

THE CORE FOUR REVISION TECHNIQUES



NOTES

A series of 25 horizontal lines for writing notes, spanning the width of the page.



NOTES

A series of 25 horizontal lines for writing notes.