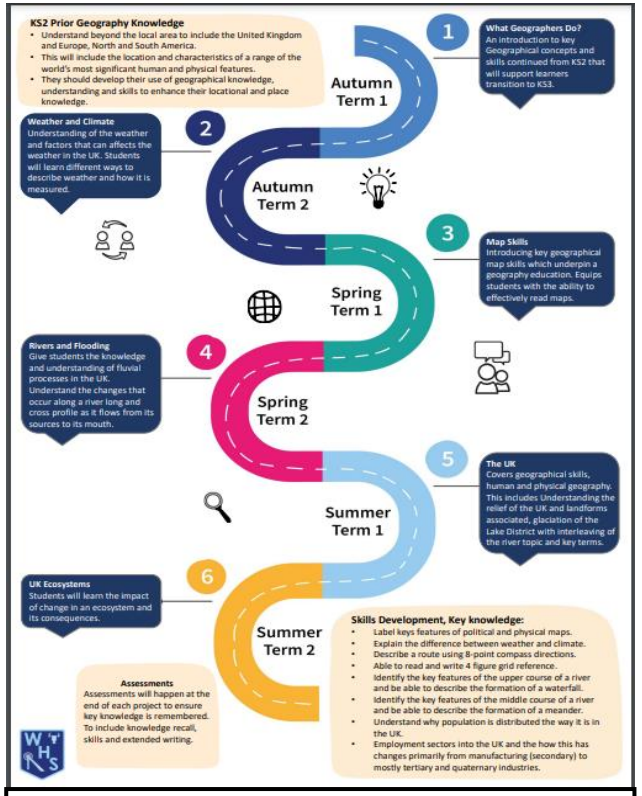
Westhoughton High School

Year 7 – Spring Term - Knowledge Organisers

Name: ..... **Form Tutor:** ..... **Form Group** .....

Introduction

The curriculum in each of your subjects at WHS has been carefully planned to help you learn new things, building upon what you know and preparing you for learning in the future. This is mapped out as a learning journey which each teacher will share with you, so you understand how your learning fits together as a whole. Each subject's roadmap is here: https://www.westhoughton-high.org/subjects/.

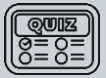
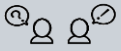
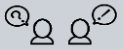


An example of a subject road map found on our website.

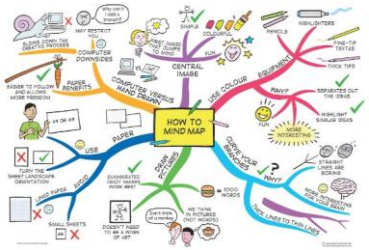
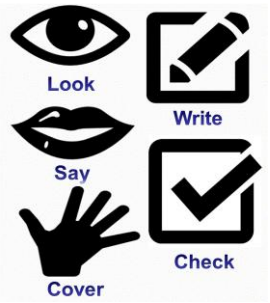
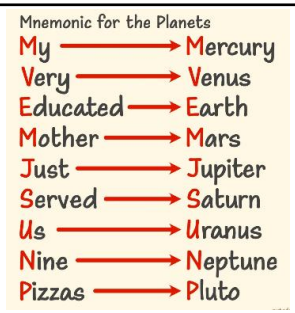
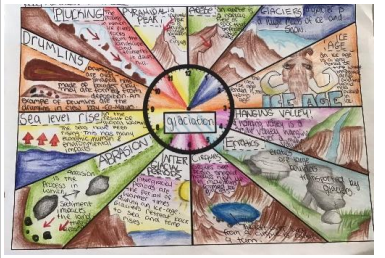
This booklet contains knowledge organisers for all the topics you will study in each subject this term. These give an overview of the essential knowledge that you MUST remember to be as successful as possible in Year 7 and as you move through each year of school. **You must bring your booklet to school every day and keep it safe at the end of each term as you will continue to use it to support ongoing revision.**

Learning Techniques to use with KOs

using them regularly is vital to make knowledge stick in your long-term memory (remember you need to revisit information at least 10 times before it is embedded in your memory). Try using these ideas, choose different techniques to learn small sections of knowledge each day.

	Look, Say, Cover, Write, Check	Key Word Definitions	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
STEP 1	Look at and read aloud a specific area of your KO. 	Write down the key words and definitions in two columns.	Use your KO to condense and write down key facts or information onto flash cards. 	Use your KO to create a mini quiz. Write down your questions relating to the information. 	Create a mind map with the information on your KO. 	Ask a partner, friend or family to use the KO or your flash cards. 
STEP 2	Cover or flip the KO over and write down everything you remember. 	Repeat the above but don't look at your KO 	Add pictures that might help you remember. Then self-quiz using the flash-cards. 	Answer the questions, remember to use full sentences. 	Check your KO to make sure there are no mistakes on your mind map. 	Make sure they test you on different sections of the KO and also on previous topics.
STEP 3	Check what you have written down. Correct any mistakes and add anything you missed in green pen. 	Use a green pen to check and correct your work 	Ask a friend or family member to quiz you on your knowledge. 	Ask a friend or family member to quiz you using the questions. 	Try to make more connections, link the information together where you can.	Repeat this regularly so that you are frequently looking at KOs past and present. 

How to make learning stick…

Mind Mapping	Flash Cards	Look, Say, Cover, Write, Check	Key Word Mnemonics	Revision Clocks
				
Mind mapping is a great way of representing key information from a topic in a visual way. Use colour and images to represent the knowledge you need to learn. Keep writing to a minimum; use only keywords/phrases. Watch the clip for more tips and advice.	Make flash cards using your KO. Write a question on one side and the answer on the other or record key-words and definitions. Test yourself frequently. For more advice scan the code.	This technique is one that has been well used from primary school upwards. It is useful for rehearsing keywords, definitions and spellings. Look at the information, read it aloud, cover it up, write it down and then check it is correct.	A mnemonic is a sentence you make up where each word begins with the same letter as the word you want to remember. It is a useful technique for remembering a group of facts/words in a certain order.	Draw a basic clock and break your KO down into 12 chunks. Make notes on each chunk in the 12 clock sections, use colour and images to make it memorable. Revise each section for 5 minutes, turn over and test how much you can recall. Watch the clip for more tips and advice.
				

How will your work be marked?

These are the marking literacy symbols that teachers will use to mark your work and cover the basics of good literacy skills.

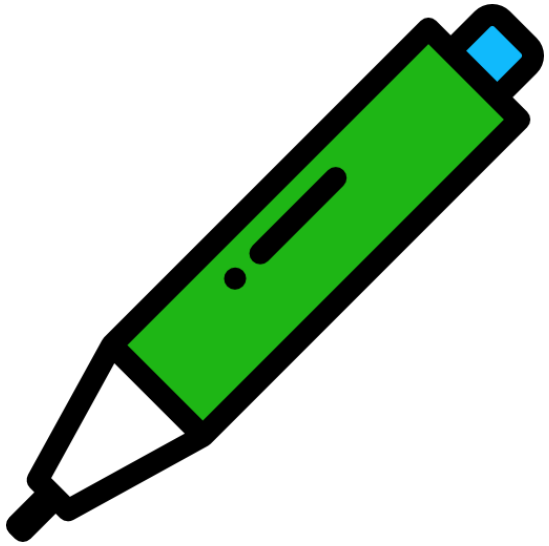
It is important that when you receive a piece of assessed work you do not just look at the score but also look at what literacy mistakes you made.

Teachers will also correct your work during a lesson.

Action you need to take:

When your teacher has highlighted a mistake, you need to correct these in green pen. For spelling mistakes you need to re-write the correct spelling 3 times.

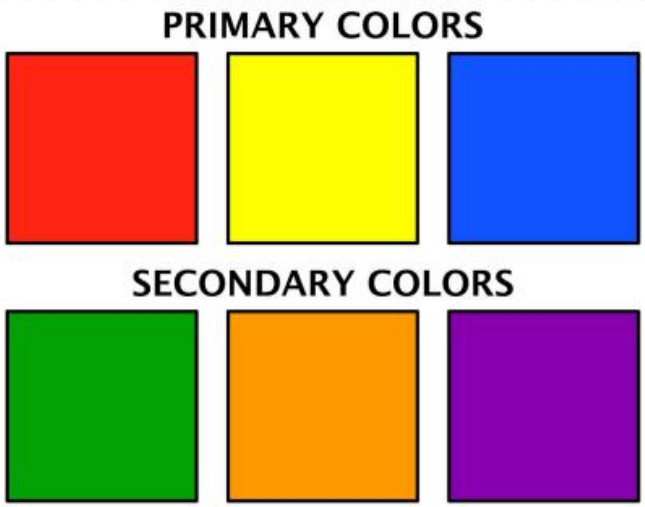
Ultimately, improving your literacy skills falls on you, take the feedback from your teachers, amend them and improve your skills.



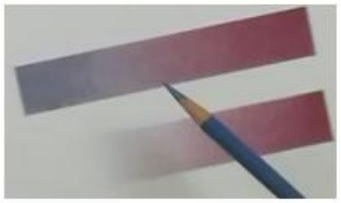
Literacy Marking Symbols	
Cl	Capital letter error
Sp	Spelling mistake
P	Punctuation error
Exp	Expression is unsuitable or could be improved
ww	Wrong word used
//	Start a new paragraph

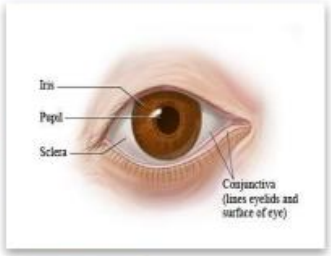
Year 7 Art Knowledge Organiser -Term 2

Portraiture



How to colour blend skillfully





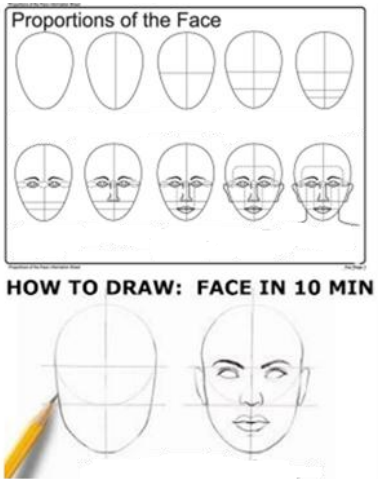
FORMAL ELEMENTS

- LINE
- TONE
- TEXTURE
- SHAPE
- PATTERN
- COLOUR

Year 7 keywords
Renaissance art was an art movement that came after the medieval art movement and before Baroque art, lasting from 1400 to 1525.
Post-Impressionism was a predominantly French art movement that developed roughly between 1886 and 1905.
Cubism is a style of painting that was developed in the early 1900s. Cubist paintings show objects from many angles at once.
Harmonious colours: Colours that are next to each other on the colour wheel
Proportions are the measurements of the face
A **continuous line drawing** is one in which a single, unbroken line is used to develop the image.

Continuous line portrait

Proportions of the face



Year 7 Portraiture Timeline (Me Myself & I)

Egyptian Head

1500 BCE

3000 BCE

Round headed figure Nige, Africa

Self-Portrait Sofonisba Anguissola Italy

1556-57

1452-1519

Leonardo da Vinci's Mona Lisa painted 1517

Frida Kahlo Self-Portrait with Thorn Necklace and Hummingbird, 1940

1907-54

1853-90

Vincent Van Gogh

"Marilyn" By Andy Warhol Silk screen 1967

1928-87

Born 1881-1973

Pablo Picasso

Julian Opie

B 1958

1960-88

Jean Michel Basquiat

Sadie Lee

B 1967

B 1964

The Singh Twins UK

Bisa Butler

B 1970

B 1967

Kehinde Wiley

Prehistoric - Egyptian - Renaissance - Post impressionism - Symbolism - Cubism - Pop Art- Neo Expressionism - Contemporary Art

Computing - DTP

Tool	What it is used for?
Desktop publishing Image Editing/Graphics Software	Software programs that allow you to manipulate digital images.
Business card	A card the size of a credit card (8.5cmx5.5cm) that displays contact information for an individual employed by a company
Letterhead	A letterhead is a printed heading that goes on letters sent from businesses
Flyer	A flyer is a form of paper advertisement intended for wide distribution. Flyers may be used by individuals, businesses, or organizations to: Advertise an event or a business as a whole such as a food/drink establishment
Text	This tool allows text to be typed onto the current layer using the Primary colour. The Text Controls in the Tool Bar can be used to change the font.
Logo	Logos serve to represent a given organization or company through a visual image that can be easily understood and recognised. A logo generally involves symbols, stylized text or both.
Adjust white balance levels	White balance is the adjustment of a digital photograph to make its colours appear more realistic
File Formats for digital Graphics/image	PSD, TIFF, PNG, JPEG, GIF
Best file type for printing	TIFF
Best file type for online use	PNG/JPEG

Computing – Using Media

Key Terms

- **Credibility** the quality of the source from where the information is gathered Source a place, person, or thing from which facts or information can be obtained.
- **Audience** A group of people of whom your project/work would be aimed at.
- **Plagiarism** The process or practice of using another person's ideas or work and pretending that it is your own
- **Referencing** When you provide (a book or article) with citations of sources of information.
- **Citation** A word or piece of writing taken from a written work
- **Paraphrase** To repeat something written or spoken using different words, often in a humorous form or in a simpler and shorter form that makes the original meaning clearer
- **Blog** A regularly updated website or web page

Copyright Law

- The Copyright, Designs and Patents Act 1988, is the current UK copyright law. It gives the creators of literary, dramatic, musical and artistic works the right to control the ways in which their material may be used.
- Types of work covered - Literacy/Dramatic/Musical/Artistic / Magazines / Sound Recording /Films
- "Copyright infringement can lead to substantial penalties." Penalties can include a fine up to £50,000 and/or a jail sentence of up to 6 months.

Evaluating and recording the credibility of a source: Check the author and the source / What's the purpose of the article? / Check when the article was written / Check the facts

Article/website title	WHY IS THE PLASTIC WASTE IN OUR WATER-WAYS INCREASING?
URL	http://www.itsgettinghotinhere.org/go-green/why-is-the-plastic-waste-in-our-waterways-increasing/
Notes/quotations/who to credit or cite	"It is estimated that the current population has produced a 320 million tonnes of plastic waste! And if we carry on as we are and do not change, this figure could double by 2034"
Evaluate the credibility of the source. How can you prove that this is a reliable source?	• Written in June last year • These facts also appear on other websites

Tool icon	Tool name	Brief description
	BOLD	Changes the text to be bold, i.e. thicker and more noticeable
	FONT	Allows you to change the style/appearance of the text
	CENTRE ALIGN	Moves the text so that it is in the middle of the page, rather than having a margin on the left- or right-hand side of the page
	TEXT COLOUR	Allows you to change the colour of the text
	BULLETED LIST	Allows you to create a bullet-pointed list

Computing – Using Media

Different Software and their uses		
Icon	**Software Name**	**Description**
	Spreadsheet software	Made up of rows, columns and cells. Used mainly for holding formulas to automatically complete calculations. Real-world use: A building company would use this software to add in all of the materials and costs for a project in order to give their invoice/bill to the customer.
	Word processing software	A modern-day typewriter used for typing text and changing the appearance of the text (such as making text bold or changing the colour). Real-world use: A supermarket would use this software to write a letter to their customers to let them know of new offers that they have in store.
	Email software	Software that allows you to read and compose electronic messages that are sent between recipients across the network (usually the internet). You can send messages to multiple people at the same time and include attachments (such as files for people to open, read or edit). Real-world use: A teacher would use this software to send homework as an attachment to all members of the class. Each member of the class would then have their own copy of the worksheet.
	Image editing software	Software that allows you to create or edit images. It includes tools such as overlaying text, cropping and recolouring. Real-world use: A Publisher would use this software to create the front page of a magazine.
	Presentation software	Software that allows you to present information in the form of a slide show. The presenter would use this to provide a visual aid to support what they are saying. Real-world use: A history teacher would use this software to show examples of castles so that learners can understand the key parts of the castle that the teacher is discussing
	Web authoring software	Software that creates web pages/websites without you having to write code. You can write, edit and position text, add images and embed videos. The software will write the required code for it. Real-world use: A start-up business would use this software to build a website to promote their services and display their contact details.

Core Technical Principles : Timbers

Hardwoods

Hardwood is from a **deciduous** tree, usually a broad-leafed variety that drops its leaves in the winter

Ash

Properties: Flexible, tough, shock resistant, laminates well. Pale brown Uses: Sports equipment and tool handles

Beech

Properties: Fine finish, tough and durable. Beige with pink hue Uses: Children's toys and models, furniture, veneers.

Balsa

Properties: Very soft and spongy, good strength to weight ratio. Pale cream/white Uses: Prototyping and modelling

Oak

Properties: Tough, hard and durable, high quality finish possible. Light brown Uses: Flooring, furniture, railway sleepers, veneer's

Mahogany

Properties Easily worked, durable and finishes well. Uses: High end furniture and joinery, veneers.

Softwoods

Softwood is from a **coniferous** tree, one that usually bears needles and has cones

Pine

Properties: Lightweight, easy to work, can split and be resinous near knots. Pale yellowish brown Uses: Interior construction, furniture

Larch

Properties: Durable, tough, good water resistance, good surface finish. Pale reddish brown. Uses: Exterior cladding, machined moldings, furniture and joinery.

Spruce

Properties: Easy to work, high stiffness to weight ratio. Creamy white
Uses: Construction, furniture and musical instruments

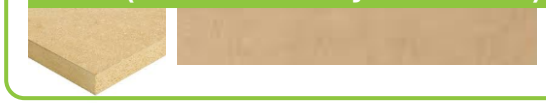
Manufactured boards

Manufactured boards are usually sheets of processed natural timber waste products or veneers combined with adhesives. They are made from waste wood, low-grade timber and recycled timber.

Chipboard

Properties: Good compressive strength, not water resistant unless treated, good value but prone to chipping on edges and corners Uses: Flooring, low-end furniture, kitchen units and worktops

MDF (Medium density Fiberboard)



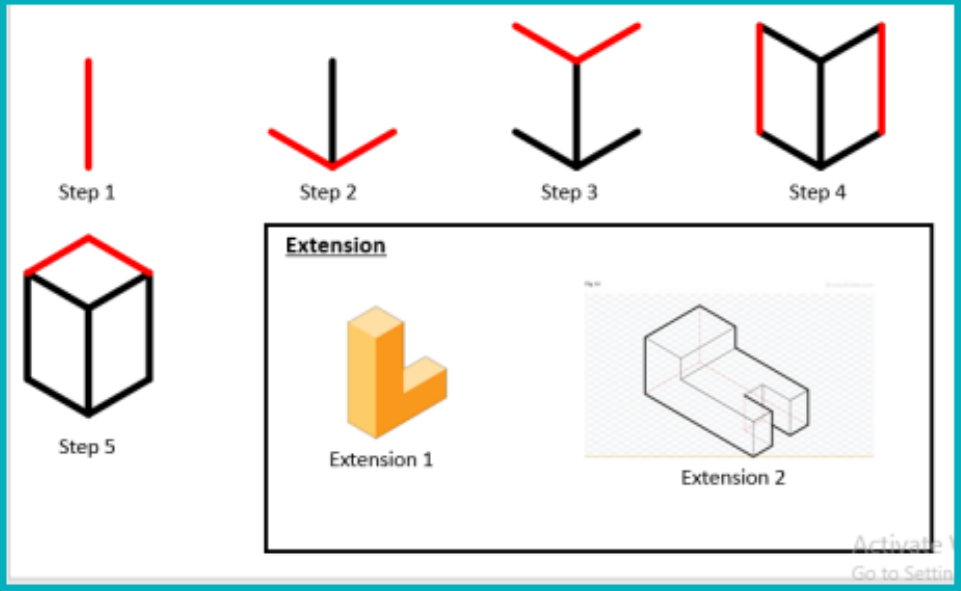
Properties: Rigid and stable, with a smooth, easy to finish surface. Very absorbent so not good in high humidity or damps areas. Uses: Good value, flat pack furniture, toy's, kitchen units and internal construction

Plywood

Properties: Very stable in all directions due to alternate Layering at 90, with outside layers running in the same direction. Uses: Furniture, shelving, construction, interior, exterior & marine grades available for water resistance.

Isometric Sketching

Draw five accurate cubes and then complete the two extension shapes.



Freehand

Freehand sketching is drawing without using any equipment and is the quickest way to communicate a design.

- Use 2D and 3D sketches next to each other to help communicate and explain an idea.
- Use annotations to explain your idea in more detail - e.g. materials, how it's made and how it will be used.
- Some colour can help show off key parts of the design, or give a background to the design to give it more visual depth.

3D Modelling

Making a physical model of your design allows you to see how your design interacts with users and spaces. The model can be to a smaller scale or be full scale. A model is often made of inexpensive materials such as paper, card, modelling foam or manufactured board.

A 3D model can allow you to test parts of your design to the specification, to see how well they work and develop the design further.

CUTTING/SHAPING

TENON SAW

Used for cutting timber in **straight lines.** Thick blade prevents the blade from deviating.

COPING SAW

Used for cutting **unusual and difficult shapes** with thin a blade.

DRILLING

PILLAR DRILL

Good for **accuracy** when drilling timbers. The Pillar Drill is **powerful** enough to drill large holes through thick material. Selecting the correct **drill bit and speed is very important.**

Scale

Scale is the size of the product being sketched or modelled. A full scale drawing or model is the exact same size as the final product. Large products are often drawn at smaller scales, such as furniture and cars, and small products will be drawn at larger scale, such as cameras and circuit diagrams.

Scales are written as ratios. For example, a 1:2 scale is half the size, 1:4 means an quarter of the size and 1:1 means it is full size.

Drama - Cluedo

You will be exploring making a piece of drama based in a different time. We will be using the characters of Cluedo as we explore a murder mystery.

Performance Techniques	
Role on the Wall	A collaborative activity for developing thoughts and ideas about a character
Marking the moment	A freeze in the middle of a scene that highlights an important moment
Hot seating	Asking question to an actor who must answer in role
Flashback	Showing the audience an important moment in a story that happened in the past

Tasks for this topic:

- Create information for each character to help you play them more successfully
- Highlight key moments in as scene to an audience
- Use performance skills to ask as characters from different time periods

Greek Theatre

You will be exploring where modern-day drama began, in Ancient Greece. You will explore how the Greek's told their stories to large audiences and the skills needed to be able to do this successfully.

Performance Techniques	
Choral movement	Movement that is performed in unison.
Choral speaking	Ensemble speaking by a group often using various voice combinations
Tragedy	A play dealing with tragic events and having an unhappy ending
Comedy	A play characterized by its humorous or satirical tone and its depiction of amusing people or incidents

Tasks for this topic:

- Create information for each character to help you play them more successfully
- Highlight key moments in as scene to an audience
- Use performance skills to ask as characters from different time periods

YEAR 7 SPRING TERM ENGLISH: FINDING MYSELF
POETRY AND NON-FICTION

Understanding Poetry

Stanza

A group of lines in a poem.

Extract from The Writer of this Poem

By Roger McGough

The writer of this poem
Is taller than a tree
As keen as the North Wind
As handsome as can be

Rhythm

The amount of syllables (beats) in a line.

In this stanza, there are 7 syllables, followed by 6 syllables in three consecutive line.

Rhyme Scheme

The pattern / order of rhyming words in a poem.

This example follows ***A B C B***

Other Types of Poetry

Sonnet:

14 lines

Usually written about love

Haiku

3 lines (5 / 7 / 5 syllables)

Usually written to capture a fleeting moment, observation or emotion

Understanding Letters

'WORLD' – OUR PERSUASIVE WRITING STRUCTURE	
Part	**Key Features**
INTRODUCTION: A HELLISH WORLD 	• Your introduction begins your persuasive piece • Use an 'imagine' sentence to put your reader in a hellish world • Include pathos: emotive language and rhetorical questions • Finish with your opinion on the topic
MAIN BODY: OUR REALITY 	• Your main paragraphs should include a problem, example and a solution • You are aiming for three main paragraphs • Begin with a topic sentence to establish the problem • Include ethos, logos and pathos • Use real-world examples • End with a concluding sentence that gives a solution
CONCLUSION: A HEAVENLY WORLD 	• Your conclusion ends your persuasive piece • Use a 'now imagine' sentence to put your reader into a heavenly world • Include pathos • Finish with your final opinion on the topic

Your Address

Date

Their Address

Dear …,

Introduction: A Hellish World

Main Body: Our Reality

Conclusion: A Heavenly World

Yours faithfully, …
OR
Yours sincerely, …

YEAR 7 SPRING ENGLISH: FINDING MYSELF
POETRY AND NON-FICTION

Universal Themes

Love

Hope

Compassion

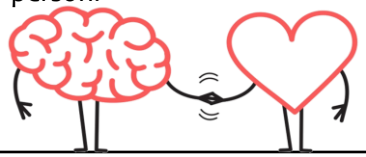
Big Ideas

Pride

Dignity or self-respect and a feeling or deep pleasure or satisfaction when you have done something well.

Empathy

To be able to understand and share in the feelings of another person.



Inclusivity

Providing equal access to opportunities and resources for everyone, especially those who might be excluded.

Prejudice

An unfavourable opinion or dislike formed without examining the facts fairly.

Tolerance

Willing to accept other people's behaviour and opinions even if you do not agree with them.

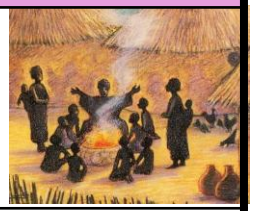
Self-Esteem

Having confidence in your own worth or abilities; self-respect.

Context – We must understand the influences of the world we live in when examining texts.

The History of Poetry

Poetry is one of humanity's oldest art forms. Similar to Ancient Greek mythology, it has roots in oral traditions. This means that poetry was passed on by people repeatedly telling each other the same poems. This is why the rhythm and rhyme in poetry is often connected to music.

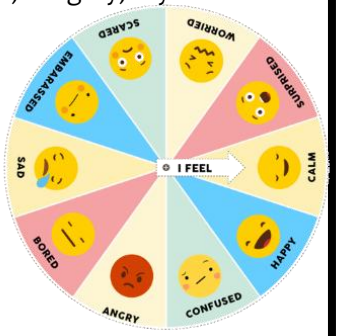


Rhythm and Rhyme

Rhythm (the amount of syllables / beats in a line) and rhyme (the pattern / order of rhyming words) are usually important features in poetry. Both rhythm and rhyme contribute to the emotions and overall impact of the poem. However, not all poems rhyme or follow a strict rhythmic pattern. Rhythm and rhyme help with words, sound and language being remembered. This is why nursery rhymes and songs use strict rhythm and rhyming patterns.

Capturing Emotions

Poetry is often used to capture a range of emotions. Writers often find that by using carefully chosen words, imagery, rhyme and rhythm, they can explore and convey complex feelings. For instance, William Shakespeare's sonnets show glimpses of his feelings on love, beauty and mortality. Whereas Matsuo Basho's haiku uses the image of the frog to show a simple moment of joy.



Multicultural Society

A multicultural society is a society where people from multiple multicultural groups coexist within the same ar Britain is a multicultural society, as many British people's families originally came to Britain from overseas. Today, we celebrate multiculturalism by experiencing, understanding and sharing a range of cultural events, religious festivities and food.

Mental Health

Mental health is our emotional, psychological and social well-being. Everyone has mental health, regardless of if it is good or bad. Mental health affects how we think, feel, act how we cope with stress, relate to others and make choices. Many people use forms of writing to improve their mental health. Some people journal, while others write poetry, stories or non-fiction.

YEAR 7 SPRING TERM KNOWLEDGE ORGANISER: FINDING MYSELF
TECHNICAL ACCURACY & KEY DEVICES

Device / Feature

Direct Address
Speaking directly to the audience / reader 'you'

Repetition
Repeated words or phrases

Rhetorical question
A question that does not require an answer

Alliteration
Words beginning with the same sound

Quote
A quote from a reputable person or source

Emotive Language
Words chosen to evoke an emotional response in the reader

Fact
Something that is proven to be true

Imperative
A command

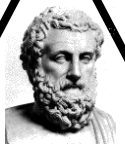
Simile
Comparing something to something else: 'as', 'like'

Metaphor
Describing something by stating it is something else

Personification
Giving living qualities to something non-human

Symbolism
Objects, colours, sounds, places

Ethos
Trust, credibility, experience
e.g. Quotes, anecdotes



Aristotle's Rhetoric Triad

Logos
Logic, proof and reason
e.g. Facts, statistics

Pathos
Empathy and values
e.g. Emotive language, similes, metaphors

Word Classes

Adjective
Describes a noun or pronoun.
Blue / young / powerful

Adverb
How, when or where something happens.
Furiously / yesterday / here

Preposition
Where something is; the time, direction or cause of something.
On / under / above

Pronoun
Words that replace nouns or noun phrases.
She / he / they

Noun
Person, place, thing, idea or state of being.
Manchester / cat / love

Verb
An action or state of being.
Jump / write / be

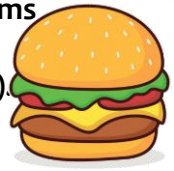
Common Homophones

YEAR 7 SPRING TERM KNOWLEDGE ORGANISER: FINDING MYSELF
TECHNICAL ACCURACY & KEY DEVICES

Sentences are created by using different types of clauses

Main clause

A main clause contains one subject and one verb. It has one main idea and it forms a complete sentence (it makes sense on its own).



Subordinate clause

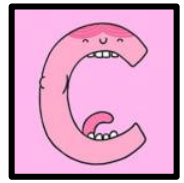
A subordinate clause adds extra information to a sentence and does not function as a complete sentence (it does not make sense on its own). It depends on the main clause to make sense and is usually separated by a comma.

Sentence Structure	Example
Simple sentence: one main clause 	The prisoner escaped.
Compound sentence: two main clauses linked with a connective / conjunction 	The prisoner escaped and he never returned.
Complex sentence: one or two main clauses with embedded dependent subordinate clauses 	The prisoner escaped despite the elaborate security system.
2A/3A: use two or three adjectives 	The road was long, empty and bewildering.
Fronted adverbial: begin your sentence with an adverb 	Quickly, he leapt over the wall.
As / When / Although: use any of these words at the beginning of your sentence to introduce a subordinate clause 	Although sweat trickled down her face, she continued to climb.

Punctuation

Capital Letters

- Start of a sentence
- Proper nouns: names of places, people or things
- The pronoun 'I'
- Months and days of the week



Commas

- Separate three or more items in a list
- After a fronted adverbial
- Before and after a subordinate clause (like brackets)
- After subordinate clauses and phrases that begin a sentence
- Separate question tags
- Separate direct speech from non-speech

Apostrophes

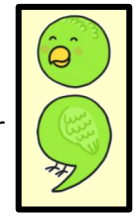
- To show that letters are missing in a word
- To show possession

Full Stops

- To end a sentence

Semicolons

- Separate two main clauses that are closely connected to each other but could stand alone as two separate sentences
- To replace a coordinating conjunction
- To break up a list using longer phrases to signal which items are together

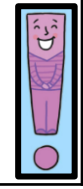


Colons

- At the end of a clause to elaborate / give more details
- At the end of a clause to give an explanation
- At the end of a clause to show an answer

Exclamation Mark

- To show strong feelings
- To show a raised voice



Question Mark

- After a direct question

Speech Marks

- Around direct speech (after the punctuation)

Knowledge organiser: Year 7 Food & Nutrition

Personal hygiene

Personal Hygiene is the practice of good personal hygiene to help prevent cross-contamination and food-borne illness

Wear an apron

Blue plasters should be worn.

Do not eat during a practical.

Wash hand thoroughly with antibacterial soap.

Hair must be tied back

Remove watches and jewellery during a practical

Health & Safety in the kitchen

is the practice of being able to work in the kitchen area safely, preventing harm or injury to anyone and keeping the space clean & tidy

Ensure food isn't left unattended.

Any spills are cleaned and/or mopped.

Wear oven gloves when adding and removing items from the oven

Knives must be stored safely and returned to the teacher

Food safety

is the practice of properly handling, preparing and storing food in ways that prevent food-borne illness

Use the correct chopping boards

Cook food to the correct temperature

Don't mix or prepare raw and cooked foods together

Food hygiene

Food hygiene is the practice of properly chilling, cooking, cleaning **food** and avoiding cross-contamination to prevent the spread of bacteria in **food**.

Ensure food is stored at the correct temperature

Food should be covered and stored correctly.

Do not overfill the bins.

Wipe all surfaces down with anti-bacterial spray.

Meat, fish, vegetables etc must be prepared separately.

Washing-up must be completed during a practical.

Micro-organisms

A micro-organism (microbe) is a tiny, single-celled living plant or animal that you can only see under a microscope. Micro-organisms spoil food because they contaminate it with their waste products. There are three groups of micro-organisms that cause food poisoning; bacteria, mould and yeast.

To grow they need the following conditions:

- Temperature
- Moisture
- Food
- Time

Personal Hygiene

Do not cough or sneeze next to food or put your fingers into food and lick them, then try the food again.

Objects outside of the kitchen, such as door handles have lots of bacteria that can contaminate your hands

The mouth, throat, teeth and gums contain billions of bacteria; some of which are pathogenic.

A clean apron gives a barrier between food and your clothes. Jewellery and watches can become clogged with dirt.

Key Temperatures

Food must be stored and cooked to the correct temperatures to avoid food poisoning and food spoilage.

- 121°C – all bacteria is killed
- 100°C – The boiling point of water
- 75°C – The temperature that the centre of all cooked food should reach for at least 2 minutes
- 5°C–63°C – The danger zone where bacteria multiplies the most
- 0°C–5°C – The fridge temperature range
- -18°C– -24°C –freezer range

Subject: Food Preparation and Nutrition Topic: Nutrition

The Eatwell Guide
- Comprises 5 main food groups.
- Shows which different groups of foods are needed in order to have a well-balanced and healthy diet.
- Shows proportions representative of food eaten over a day or more.

Fruit and vegetables
- Should make up just over a third of the food eaten each day.
- Aim to eat at least five portions of a variety each day.
- Choose from fresh, frozen, canned, dried or juiced.
- A portion is around 80g (3 heaped tbs).

Potatoes, bread, rice, pasta or other carbohydrates
- Base meals around starchy carbohydrate food.
- This group should make up just over a third of the diet.
- Choose higher-fibre, wholegrain varieties.

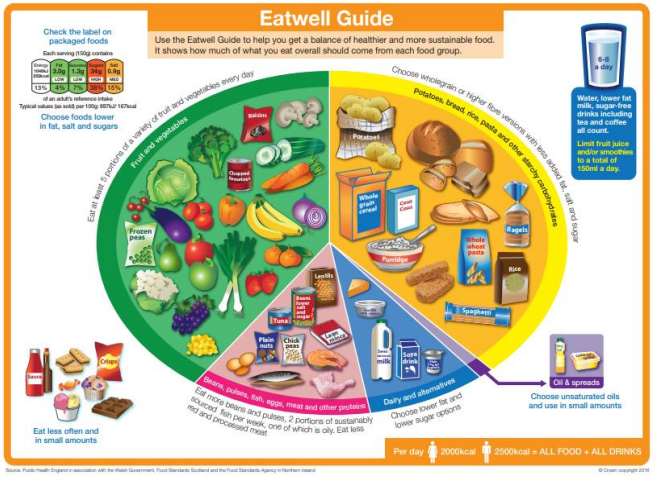
Fibre
- Dietary fibre is a type of carbohydrate.
- Food examples include wholegrain cereals and cereal products; oats; beans; lentils; fruit; vegetables; nuts; Dietary fibre helps to: reduce the risk of heart disease, diabetes and some cancers;
- The recommended average intake for dietary fibre is 30g per day for adults.

Key Terminology

The Eatwell Guide: A healthy eating model showing the types and proportions of foods needed in the diet.

Hydration: The process of replacing water in the body.

Composite/combination food: Food made with ingredients from more than one food group.



Tips for healthier eating
practical tips for healthy eating Base your meals on starchy carbohydrates.
1. Eat lots of fruit and veg.
2. Eat more fish Cut down on saturated fat and sugar.
3. Eat less salt (max. 6g a day for adults).
4. Get active and be a healthy weight.
5. Don't get thirsty.
6. Don't skip breakfast.

Dairy
- Good sources of protein and vitamins.
- An important source of calcium, which helps to keep bones strong.
- Should go for lower fat and lower sugar products

Beans, pulses, fish, eggs, meat and other protein
- Sources of protein, vitamins and minerals.
- Recommendations include to aim for at least two portions of fish a week, one oily.

Foods high fat, salt and sugar
- Includes products such as chocolate, cakes, biscuits, sugar soft drinks, butter and ice cream.
- Are high in fat, sugar and energy and are not needed in the diet.
- If included, should be had infrequently and in small amounts.

Oil and spreads
- Unsaturated fats are healthier fats that are usually from plant sources
- People are eating too much saturated fat and need to reduce consumption.

Hydration
- Aim to drink 6-8 glasses of fluid every day.
- Water, lower fat milk and sugar-free drinks including tea and coffee all count.

Composite/combination food
Much of the food people eat is in the form of dishes or meals with more than one kind of food component in them. For example, pizzas and sandwiches. These are often called 'combination' or 'composite' foods.

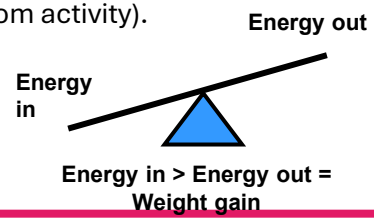
Subject: Food Preparation and Nutrition Topic: Carbohydrates and Fibre

Energy
Energy is essential for life, and is required to fuel many different body processes, growth and activities.
These include:

- keeping the heart beating and organs functioning
- maintenance of body temperature;
- muscle contraction.

Our bodies get energy from **Macronutrients.** There are 3 macro nutrients: carbohydrates, fats and protein.

Energy balance
To maintain body weight it is necessary to balance energy intake (from food and drink) with energy expenditure (from activity).



Free sugars include all sugars added to foods, plus sugars naturally present in honey, syrups and unsweetened fruit juice.

Fibre is a term used for plant-based carbohydrates that are not digested in the small intestine.

Food Sources of Carbohydrate

Sugars include a variety of different sugar molecules such as sucrose

Fibre

- Dietary fibre is a type of carbohydrate found in plant foods.
- Food examples include wholegrain cereals and cereal products; oats; beans; lentils; fruit; vegetables; nuts; and, seeds.

Dietary fibre helps to:

- reduce the risk of heart disease, diabetes and
- help weight control;
- prevent constipation;
- improve gut health.

Key Terminology

Energy: The power the body requires to stay alive and function.

Macro nutrient: The nutrients we need in larger quantities that provide us with energy:

Digestion: The process by which food is broken down in the digestive tract to release nutrients for absorption.

Constipation: A symptom linked to a lack of fibre in the diet. It happens when food cannot pass through your digestive system easily.

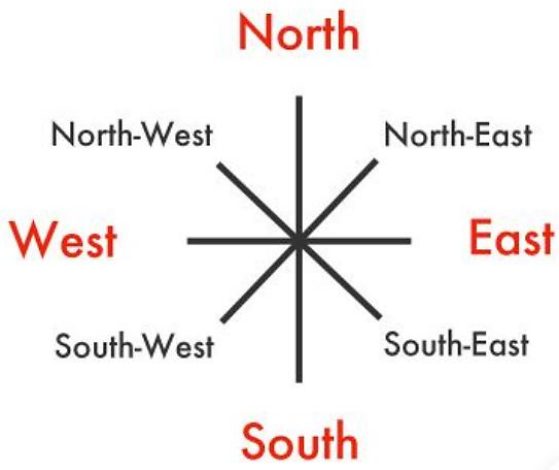
To increase your fibre intake you could:
•Choose a higher-fibre breakfast cereal such as plain wholewheat biscuits (like Weetabix) or plain shredded whole grain (like Shredded wheat), or porridge as oats are also a good source of fibre.
•Go for wholemeal or granary breads, or higher fibre white bread, and choose wholegrains like wholewheat pasta, bulgur wheat or brown rice.
•Add pulses like beans, lentils or chickpeas to stews, curries and salads.
•Include plenty of vegetables with meals, either as a side dish or added to sauces, stews or curries.
•Have some fresh or dried fruit, or fruit canned in natural juice for dessert. For snacks, try fresh fruit, vegetable sticks, rye crackers, oatcakes and unsalted nuts or seeds.

Dietary guidelines state that adults should eat 30g of fibre a day (Slightly less for children)
A lack of fibre in your diet can lead to **constipation**, irritable bowel syndrome (IBS), Heart disease and come cancers (bowel).
Type 3 and 4 on the Bristol stool chart means you have enough fibre in your diet.

Geography Spring 1: Map Skills

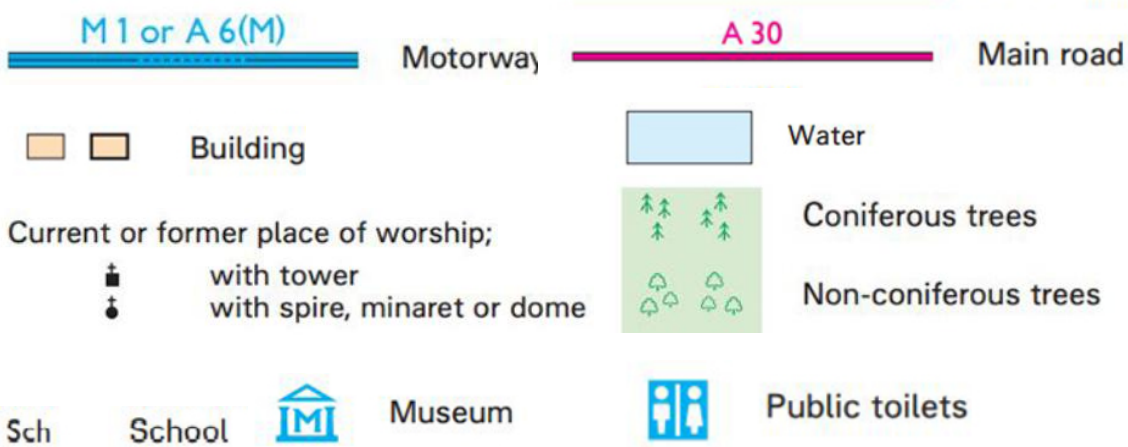
Key Vocabulary	
Map	A drawing or picture of a landscape
Grid Reference	How we find the exact point on a map. Using a grid and numbers along the sides to locate the square.
Map Symbol	These are symbols, abbreviations and shaded areas that link to a key to show us a feature on a map.
Map Key	This tells what the symbols, colours and abbreviations represent on the map.
Scale	A map cannot be the same size as the area it represents. It needs to be *scaled down* to fit on a page or a screen.
Relief	This is the height and shape of the land.
Ordnance Survey	The company that produces maps in the UK. They have a specific look and style
Contours	These are brown lines that show height and relief of the land on a flat page.
Spot Height	This is a dot with a number next to it that shows the height in metres.
Aerial Photograph	A photograph that is taken from above.

The 8-point compass

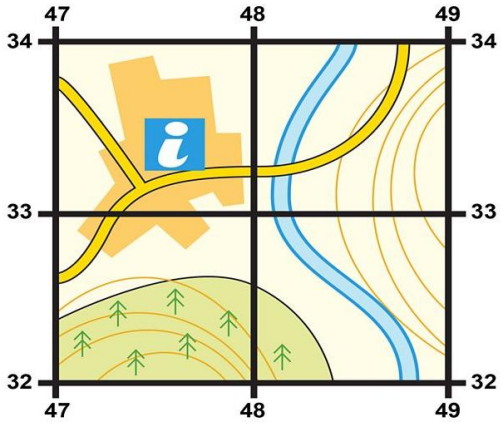


There are rhymes to help you remember the order of the four main compass points.
For example:
Never
Ever
Support
Wigan

Common OS map symbols

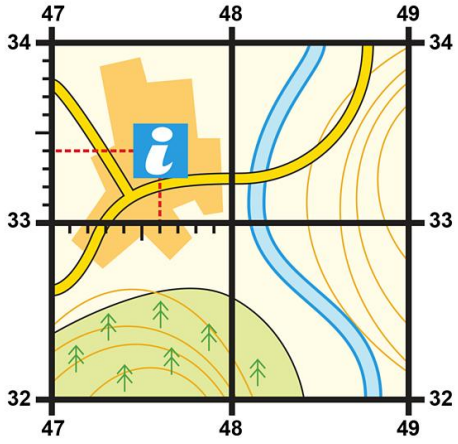


Four Figure Grid References



1. Go along the corridor (bottom) first and find the grid square.
2. Choose the bottom left number on that square.
3. You then go up the stairs, find the grid square and choose the bottom left number on that square.
4. The 4 figure grid reference for the i is 47, 33.

Six Figure Grid References



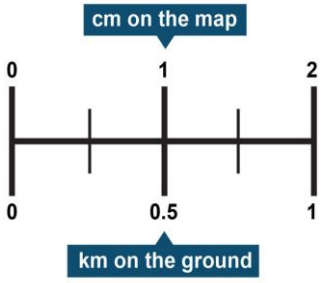
If we want to be more accurate, we can use six-figure grid references. To do this, we need to picture the grid square divided into 100 smaller squares.

A six figure grid reference first involves us calculating the 4 figure grid reference: I = 47, 33

Then for each grid dividing the square by 10 (see grid for example) so... I = 47**6**, 33**4**

Scale / Calculating Distance

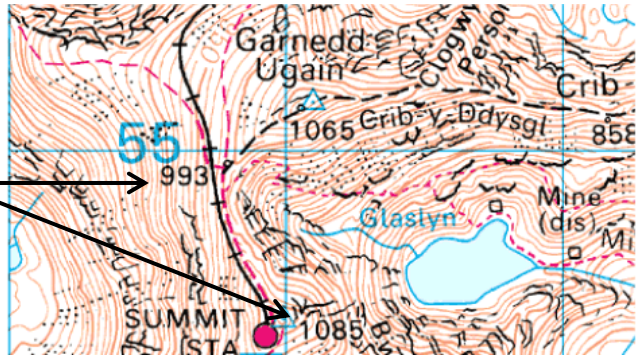
- Maps have different scales depending on what they are used for.
- The scale tells you how much you would have to enlarge your map by to get the actual size in real life. For example, the scale might look like this 1:25000.
- This means that every 1cm on the map is equivalent to 25,000cm (or 250m) in real life.



- Usually a map will also have a scale bar. This is usually found at the bottom of the map and looks like a small ruler.
- On this scale, 1cm on the map is equal to 0.5km in the real location

Height / Relief

Height can be shown using spot heights. Which is black circle with a number next to it which tells us the height in metres.

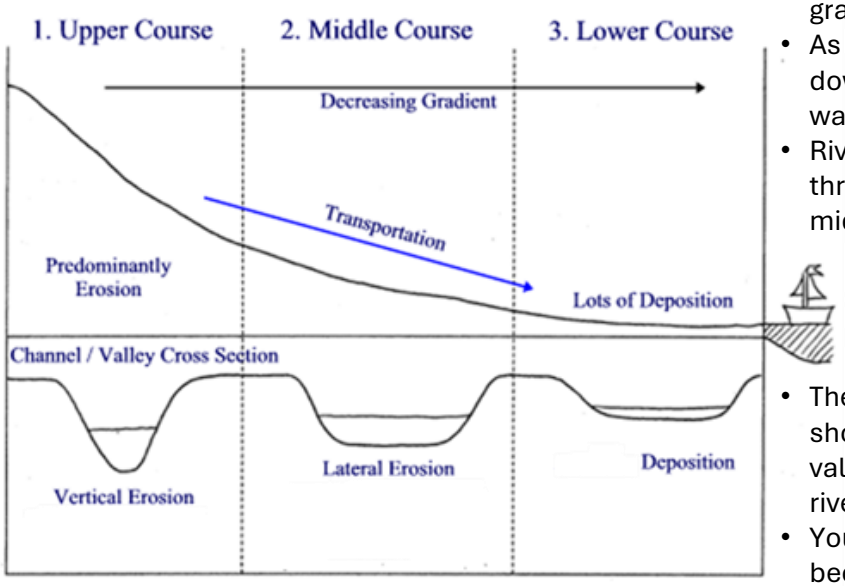


- Contour lines join areas of equal height and are shown in orange.
- The number written on the contour line shows the height in metres.
- The distance between contour lines shows how steep or flat the land is.
- If the contour lines are very far apart, it means the land is flat.
- If the contour lines are close together, it means the land is steep.

Geography Spring 2: Rivers

Key Vocabulary	
River	A natural flowing body of water that moves downhill from a high-ground source to a mouth
Long Profile	Shows the difference in height from the start to the end of the river.
Cross Profile	A cross section of the river valley
Erosion	Wearing away of land by the river
Transportation	Movement of material by the river e.g. soil being carried by the river.
Deposition	When the water loses energy it drops what it is carrying.
Waterfall	A step in the course of the river which
Meander	A bend in the river created by erosion and deposition
Oxbow Lake	A horse-shoe shaped lake left behind when a meander is cut off.
Source	Where the river starts (high land)
Mouth	Where the river ends (lowland / sea)

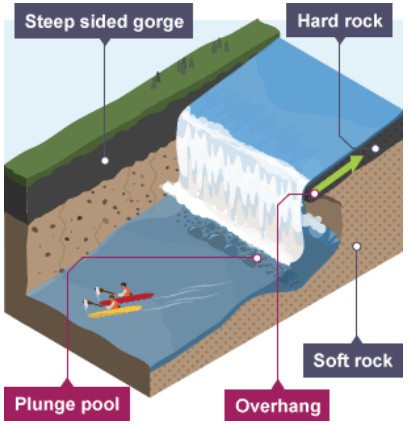
River Processes



- Rivers transport water downwards because of gravity
- As they move further downhill, they gather more water and become larger.
- Rivers can be divided into three sections: the upper, middle and lower courses.

- The cross profile opposite shows the shape of the river valley in each course of the river.
- You can see the valley becomes less steep and the river channel becomes wider.

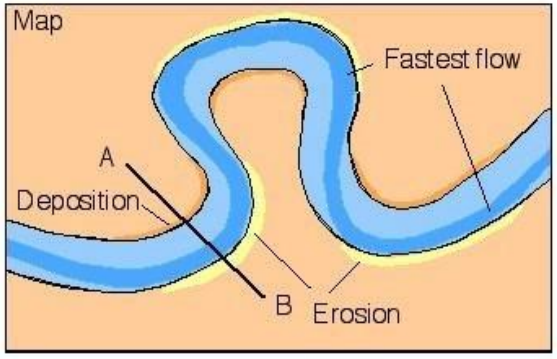
Upper Course: Waterfall



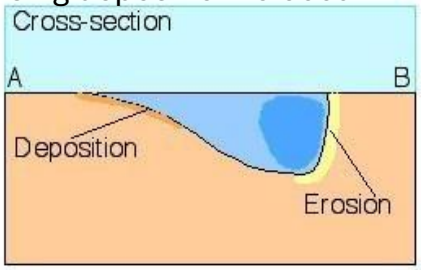
1. Waterfalls form where a band of **harder rock** sits on top of a band of **softer rock**.
2. The soft rock **erodes** quicker leaving the harder rock **overhanging** (sticking out).
3. Over time the unsupported harder rock cracks and falls into the river due to **gravity**.
4. The process repeats and the waterfall retreats leaving a steep sided **gorge**.

Middle Course: Meander

Meanders are bends in the river. Created by erosion and deposition. The water moves fastest around the outside of a river bend causing erosion.



Water moves slower at the inside of a bend causing deposition to occur.



You can see the river is deeper and the bank is steeper where the water is moving faster. Whereas where deposition occurs the land is shallow and slow moving.
The bend will grow in the direction erosion is occurring.

River Floods

Causes:

- The main cause of river flooding is **heavy rainfall**. This causes the ground to be **saturated**, and water will move faster to a river overloading the channel and causing it to flood.
- Additionally **steep slopes** and **impermeable rock types** (don't let water through) can also speed up water flow meaning the river is more likely to flood.
- Finally humans can contribute to flooding by covering towns and cities in **concrete** and **tarmac**. The water then goes into storm drains which quickly carries it into rivers potentially overloading the river channel.

Effects

- Social: Peoples houses are flooded and possessions are damaged or destroyed. Additionally it can lead to injury or loss of life if people are caught up in floods.
- Economic: The cost of flooding can be huge to repair additionally businesses may have to shut meaning people are not being paid or farmers crops can be destroyed.
- Environmental: Animal habitat loss, the cost of clean up.

Reponses:

- Short Term: Evacuate, emergency services assist people who need rescuing.
- Long Term: Repairing and rebuilding.

River Management

Hard Engineering: Trying to control or stop the river from flooding. For example dams control the flow of water.

Soft Engineering: Working with natural processes to slow down the flow of water such as planting trees which will absorb water.

YEAR 7 KNOWLEDGE ORGANISER: Medieval England (part 2)

Key things I need to know

- ✓ How important was religion in the Middle Ages?
- ✓ Why were medieval monarchs challenged?
- ✓ Where did our Parliament come from?

Key Concepts

Cause	The reason something happens
Rights	A moral or legal entitlement to something
Interpretation	One person's opinion of an event or person
Church	The word used to describe the Christian religion all over the world. In medieval times this meant the Roman Catholic Church.
Parliament	Controls the country and is made up of the monarch, Lords and Commons.
6. Crusade	A holy war

Why was religion so important to people?

During this time, "the Church" is referring to the Roman Catholic Church.
The Church was a focal point for people in Medieval England, people lived and acted in accordance to the Church because of the beliefs around the impact of not doing so. People believed that most bad things that happened in the country was because God was unhappy with England and how people were living. For example, if the country had a bad harvest or people came down with an illness, people believed that this was sent by God.

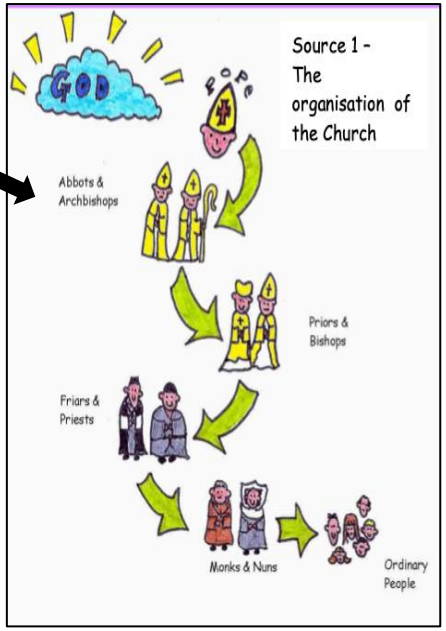
In addition, the use of 'Doom paintings' caused people to become very scared of the idea of going to hell as the paintings showed what horrible things happen to those in hell.

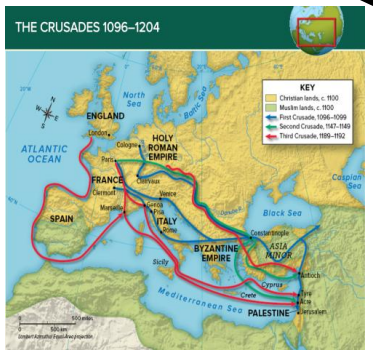
What did Europeans get from the Crusades?

Technology & weapons	New castle designs, a huge catapult called the trebuchet, Greek fire balls and more archers. An improved focus on education, mirrors, surgical tools and compasses.
Knowledge	The numbers system (rather than Roman numerals) making maths easier, chess and new medical treatments.
Products	Foods such as lemons and apricots. Cotton, silk and slippers which became a sign of wealth and power in Europe.

What was the structure of the Church?

The Church had a strict structure and the head of the Church was the Pope who lived in Rome.





The Crusades

The Crusades were several holy wars. Christians from Europe travelled to the Jerusalem to take back the Holy Land from Muslims.

Why did people go?

- The Pope told people it was their Christian duty to take back the Holy Land.
- People thought it would help them to get into Heaven.
- The Pope promised that the sins of Crusaders would be forgiven.
- People wanted to gain wealth and land in the Holy Land.

Thomas Becket and King Henry II

Henry II was angry about the lack of control he had over the Church and the Church courts.

Henry II decided he would make his friend to Thomas Becket Archbishop of Canterbury to help him gain more control

Becket took his religious duties very serious and refused to listen to Henry, putting the Church first.

Becket refused to accept a law that Henry II passed about the Church Courts so Becket fled to France.

The Pope encouraged Henry II and Becket to make amends and so Becket returned to England.

When Becket returned, he excommunicated some Bishops that were loyal to Henry II whilst Becket was in France. Henry II found out and was furious.

Why did the Barons rebel against King John?

King John is often called 'the worst of all our kings.' He did a lot of things to make his barons unhappy including:

- He lost land in France including Normandy, Maine and Anjou.
- He demanded money and soldiers from his barons to regain the land he had lost.
- He imposed taxes more often than other kings and he punished barons with heavy fines as a way of making money.
- He argued with the Pope leading the Pope to close all churches in England, putting his people's souls in danger.

Magna Carta 1215

As a result of King John being so unpopular he was forced to sign a document called the Magna Carta in an attempt to make him a better king.

At the time, some **people thought that the Magna Carta was not significant** because:

- It did not really limit the power of medieval kings very much.
- It only applied to rich men like barons. It did not apply to peasants.

BUT Magna Carta was significant in some ways:

- The Magna Carta introduced the idea that there are laws that the king must accept.
- The Magna Carta meant that the king had to ask for the advice of the barons and the bishops.
- The clause which says we cannot be punished without a fair trial still applies today.

The Siege of Rochester Castle

- Rochester is an important strategic spot for defense and communication.
- With its great keep, square and massive and one of the tallest in the country, made of stone, measuring 35m high, the tallest in England, and is 22m square.
- The walls of the Castle are between 3.5-4m thick.

What happened?

- In October 1215, some Barons who were extremely unhappy with King John due to him frequently requesting higher taxes to pay for his unsuccessful wars decided to capture Rochester Castle along with 100 well armed knights.
- Rochester Castle was one of King John's favourite castles. Due to the thick and tall walls John could not break through.
- John then decided to dig a tunnel underneath the castle and put 40 pigs in there.
- As pig fat is extremely flammable he set fire to the pigs and due to the heat it brough down one of the towers of Rochester Castle.
- Knowing that King John had now broken through the castle the Barons surrendered.

Where did our Parliament come from?

The British parliament consists of the King and two houses, the House of Commons and the House of Lords. The purpose of the parliament are to pass laws, to provide taxes and to control the actions of the government.

1207 King John's son Henry becomes King of England at only 9 years old.

As Henry was too young to be king several men ruled the country for him called William Marshall and Hubert De Burgh. Henry became king when he was 20.

Henry married Eleanor who was unpopular with the country. Henry Also used money recklessly such as buying exotic animals

Henry was ignoring the rules of the Magna Carta so nobles and barons created a Parliament to help run the country.

War then broke out between Henry and Parliament.

Henry's son killed the leader of the rebellion, but the Parliament system of England was created.

Why did the Peasants' Revolt happen in 1381

Category	Changes
Black Death & jobs 	• After the Black Death peasants got better wages, but Then the lords tried to lower wages again. They even created a new law called the Statute of Labourers to force wages down to what they had been before the Black Death.
Poll Tax 	• England had been at war since 1369, so the Poll Tax kept going up to pay for the war. Poll Tax is a tax everyone has to pay, even the poorest people. • Many peasants could not afford to pay it. In March 1381, the government demanded the third Poll Tax in four years and appointed commissioners to make everyone pay. • In May 1381, peasants' attacked tax collectors in Essex when they tried to collect the poll tax. These attacks soon spread.
John Ball 	• John Ball was a radical preacher who spoke out against the Feudal System and the Church. • He had been excommunicated in 1366, for suggested that society should not be organised by a class system and instead people should be equal. • Medieval society regarded the monarchy and nobility as more important than the peasants, yet Ball preached that God saw everyone as equal, and that peasants were unfairly treated. • His ideas encouraged peasants to demand changes.

Cancellation to simplify

Component Knowledge

- To be able to simplify fractions using highest common factors

Key Vocabulary

Fraction	A fraction is made up of a numerator (top) and a denominator (bottom).
Equivalence	Two fractions are equivalent if one is a multiple of the other.
Simplify	Cancel a fraction down to give the smallest numbers possible.

Cancelling to simplify

If a numerator and denominator share a multiplication factor they can be cancelled

Example

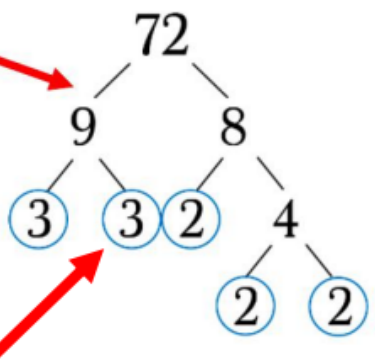
$$\frac{2 \times \cancel{3} \times \cancel{3}}{\cancel{3} \times \cancel{3} \times \cancel{3}} = \frac{2}{3}$$

Prime Factors

To be able to cancel the factors it helps to write your numerator as a product of its prime factors

Reminder:
Write 72 as a product of its prime factors

We need to find pairs of numbers that multiply to give the number



When you get a prime number circle it.

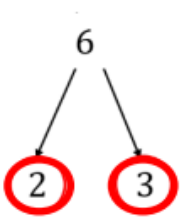
Online clips

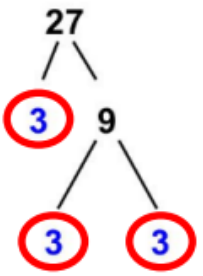
Example

Simplify

$$\frac{6}{27}$$

First write the numerator and denominator as a product of their prime factors





$$\frac{6}{27} = \frac{2 \times \cancel{3}}{\cancel{3} \times 3 \times 3} = \frac{2}{3 \times 3} = \frac{2}{9}$$

Fractions of Amounts

Component Knowledge

- To calculate fractions of amounts

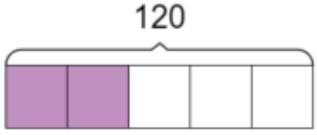
Key Vocabulary

Fraction	A way of writing a part of an integer(whole number).
Numerator	The top number in a fraction- the number of parts of the whole we have/want.
Denominator	The number of equal parts the whole has been divided into equally.
Of	Means parts of or multiply.

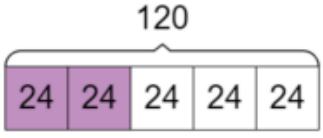
Fractions of Amounts- non-calculator

$Find\ \frac{2}{5}\ of\ 120$

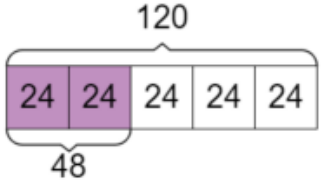
Draw a bar model



Shade $\frac{2}{5}$ of the bar



Divide 120 (amount) by 5 (number of parts) = 24



Two parts equal
2 x 24 = 48

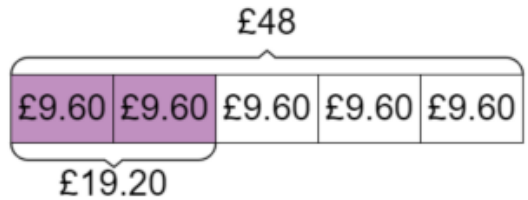
Fractions of Amounts-Money

$Find\ \frac{2}{5}\ of\ £48$

48÷5 =9.6

Remember money is shown to 2dp

so, 9.6 = £9.60



Fractions of Amounts- calculator

$Find\ \frac{3}{8}\ of\ £250$

Of means multiply so swap the of to ×

$Type\ \frac{3}{8} \times £250\ into\ your\ calculator$

Answer = £93.75

Online clips

M695, M684

Equivalent fractions

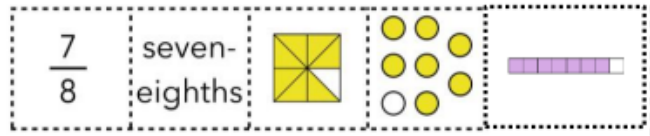
Component Knowledge

- To understand fractions are part of a whole.
- To be able to calculate equivalent fractions
- To use equivalent fractions to compare the size of fractions.

Key Vocabulary

Fraction	A way of writing a part of an integer(whole number).
Numerator	The top number in a fraction- the number of parts of the whole we have/want.
Denominator	The number of equal parts the whole has been divided into equally.
Equivalent	Means equal to.

Fractions- can be written numerically or as diagrams.

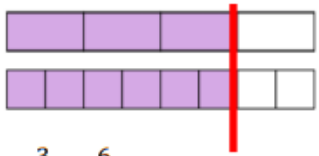


$\frac{1}{2}$ *means* 1 *part out of* 2 *parts of the whole*

$\frac{7}{8}$ *means* 7 *parts out of* 8 *parts*

Number of parts you have/want → $\frac{numerator}{denominator}$ ← Number of equal parts in total

Equivalence- some fractions are equal in size, even when they look different.



The bars show $\frac{3}{4} = \frac{6}{8}$. You can see they have the same size, even though the parts in the bars are different sizes.

To calculate equivalent fractions, we need to multiply or divide by a common number.

Find $\frac{2}{5} = \frac{}{20}$

We need to find the number we multiply 5 by to get the answer of 20. This is 4 (5 x 4=20).

$\frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$ **So,** $\frac{2}{5} = \frac{8}{20}$.

Comparing- to compare fractions, we need all fractions to have the same denominator.

Same denominator—compare the numerators

$\frac{2}{8} < \frac{5}{8}$

Change the denominator of one to match the other

$\frac{2}{5}$ and $\frac{3}{10}$ $\quad \frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$ $\quad \frac{2}{5} > \frac{3}{10}$

Change both denominators to a common denominator

$\frac{7}{8}$ and $\frac{5}{6}$ $\quad \frac{7}{8} \times \frac{3}{3} = \frac{21}{24}$ $\quad \frac{5}{6} \times \frac{4}{4} = \frac{20}{24}$

$\frac{7}{8} > \frac{5}{6}$

Online clips M410, M671, M335

Four operations with fractions

Component Knowledge

- To be able to convert between mixed numbers and improper fractions
- To be able to use equivalent fractions
- To be able to add and subtract fractions including mixed numbers
- To be able to multiply fractions
- To be able to divide fractions.

Key Vocabulary

Numerator	The top part of a fraction – how many parts are represented.
Denominator	The bottom part of a fraction – This tells us how many parts there are in the whole.
Equivalent	Two fractions are equivalent if one is a multiple of the other. They have equal value.
Mixed number	Are made up of a whole number (integer) and a fraction.
Improper fraction	A fraction where the numerator is larger than the denominator.
Reciprocal	The reciprocal of a number is 1 divided by the number. When we multiply a number by its reciprocal, we get 1. This is why it is called the multiplicative inverse. E.g the reciprocal of 2/3 is 3/2.
Simplify	To cancel down a fraction to give the smallest possible numbers. We do this by dividing the numerator and the denominator by the highest common factor.

Improper fraction to mixed number

$$4\frac{3}{5}$$

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

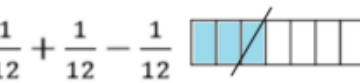
Multiply the denominator by the whole number then add the numerator

$$= \frac{23}{5}$$

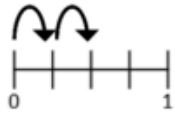
Add/Subtract unit fractions

Same denominator

$$\frac{1}{12} + \frac{1}{12} - \frac{1}{12} = \frac{2}{12}$$



$$\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$$

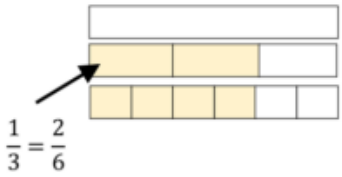


With the same denominator ONLY the numerator is added or subtracted

Equivalent fractions

Numerator and denominator have the same multiplier

$$\frac{2}{3} = \frac{4}{6}$$



Adding Fractions

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

×7 ×5

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

To add fractions the denominators must be the same. First choose the lowest common multiple of both denominators to be the new denominator.
Then use equivalent fractions to keep the sum the same.
Then add the numerators as with unit fractions.

Adding mixed numbers

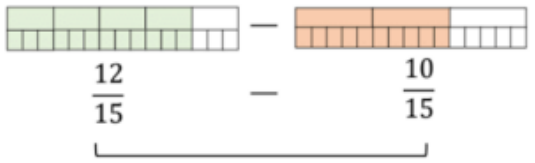
Add the following fraction, give your answer in its simplest form:

$$5\frac{1}{8} + 3\frac{5}{6} = 5\frac{3}{24} + 3\frac{20}{24}$$ *Find a common denominator.*

$$= 8 + \frac{23}{24}$$ *Add the integers, and then add the fractions.*

$$= 8\frac{23}{24}$$ *Add.*

Subtracting Fractions

$\frac{4}{5} - \frac{2}{3}$  $= \frac{2}{15}$

$\frac{12}{15} - \frac{10}{15}$

Use equivalent fractions to find a common multiple for both denominators

Subtracting mixed numbers

$2\frac{1}{5} - 1\frac{3}{10}$

$2\frac{2}{10}$

$\frac{22}{10} - \frac{13}{10} = \frac{9}{10}$

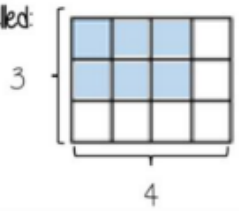
- Use equivalent fractions to find common denominators.
- Change to improper fractions
- Subtract the numerators.
- If needed simplify

Multiplying Fractions

$\frac{3}{4} \times \frac{2}{3} = \frac{6}{12}$ ← Parts shaded

← Total number of parts in the diagram

Modelled:



To multiply two fractions:
Multiply the numerators.
Multiply the denominators.

If using mixed numbers convert to improper fractions first.

Dividing Fractions

When dividing fractions we use reciprocals. To find the reciprocal we 'flip' the fraction. (It is the multiplicative inverse of the fraction).

E.g. the reciprocal of 3 is $\frac{1}{3}$, the reciprocal of $\frac{1}{6}$ is 6 etc, the reciprocal of $\frac{3}{4}$ is $\frac{4}{3}$ etc

We multiply by the reciprocal of the second fraction.

$\frac{2}{5} \div \frac{3}{4}$

$\frac{2}{5} \times \frac{4}{3}$

Multiply by a reciprocal gives the same outcome

We can use KFC to help us remember the method.

- Keep the first fraction the same
- Flip the second fraction (convert to its reciprocal)
- Change the divide to a multiply (as we are using the multiplicative inverse).

Remember to convert to improper fractions when using mixed numbers.

Online clips

M410, M671, M835, M931, M157, M197,

M216, M110, M265, M645, M619

Algebraic Vocabulary

Component Knowledge

- Understand the difference between the various algebraic words
- Understand how each previous word builds on to the next

Key Vocabulary

Variable	A quantity that can take on many values denoted by a symbol or a letter
Term	Is a single variable or number or variables and numbers multiplied together.
Expression	A group of numbers, letters and operational symbols, e.g. $2x + 3y - 8$
Equation	A number statement with an equals sign (=). Expressions on either side of the equals sign are of equal value, e.g. $a + 14 = 20$ or $2(x + 12) = 44$ or $x + 5 = 2x + 3$
Formula	A special type of equation that shows the relationship between different variables. They tend to describe real-world situations. Plural is formulae.

A **variable** is a symbol (often a letter) that is used to represent an unknown.

E.g. x or y or a etc.

Variables can also have exponents (can be raised to a certain power.

E.g. x^2

A coefficient is the value that is before a variable. It tells us how many lots of the variable there is.

E.g. $x + x + x + x + x = 5 \times x = 5x$

The coefficient here is 5.

An **algebraic term** is either a single number or a variable.

e.g. '3' or 'x' or 'h'

A term can also be a number and a variable multiplied together.

e.g. 2a or 6y or 4xy

When 2 or more algebraic terms are added (or subtracted) they form an expression.

Formula/Formulae

A formula is a special type of equation that shows the relationship between different substituted variables. Formulas are often used in geometry to find area and volume.

e.g. Area of a triangle = (base x height) ÷ 2

Algebraic identities use the '$\equiv$' symbol. It is like an equal's sign, but it means identical to. No matter what the value of the variable this will always be true.

e.g. $2x \equiv x + x$

An **algebraic expression** is a single term or a set of terms that are combined using addition (+), subtraction (-), multiplication (x) and division (÷)

Examples

$3x$ $2x + 3y$ $2 - 5y^2$ $2x + 3y - 5$

An expression that contains two terms is called a binomial.

Equations are mathematical expressions which contain one or more variables and an equals sign.

Examples $3x - 5 = 7$ $\frac{4(x-2)}{5} = 8$ $x^2 = 9$ $2x^2 - 3x - 5 = 0$

We can solve an equation to find the value of the variable(s).

Example Solve $4x + 3 = 23$

$$4x + 3 = 23$$
$$\begin{matrix} -3 & -3 \end{matrix}$$
$$4x = 20$$
$$\begin{matrix} \div 4 & \div 4 \end{matrix}$$
$$x = 5$$

Online clips

M813, M830

Collecting Like terms

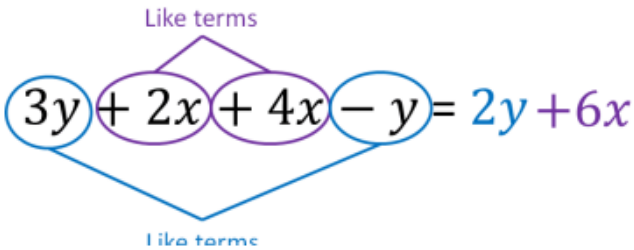
Component Knowledge

- Recognise terms in algebra
- Use of positive and negative directed numbers

Key Vocabulary

Variable	A **Variable** is a symbol for a number we don't know yet. It is usually a letter like x or y
Term	A **Term** is either a single number or a variable (x), or numbers and variables multiplied together $(5y)$.
Expression	An **Expression** is a group of terms (the terms are separated by + or − signs) (eg, $5y + 6x - 8y$)
Simplify	reducing the expression/fraction/problem in a simpler form.

Collecting like terms : We collect like terms to simplify an expression. We look at terms which share the same variable



In this example:

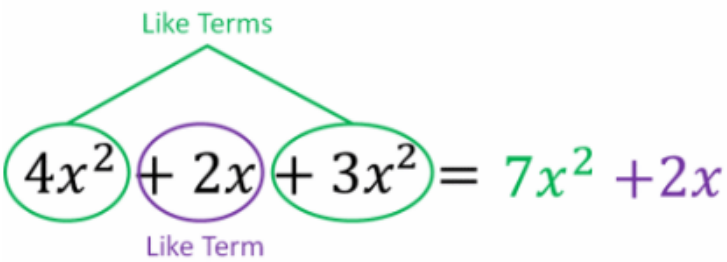
We collect all the x variables : $2x+4x = 6x$

AND

Collect all the y variables: variables : $3y-y =$

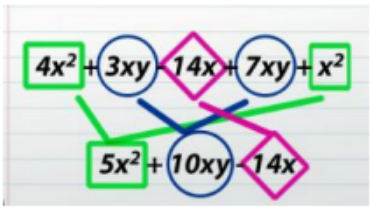
Collecting like terms – example 2

When collecting like terms, it is important to find the same terms and combine them to simplify the algebraic expression. We need to be able to recognise that x is different to x^2



Handy Hint:

It helps if you can visually see the different terms before you collect them. Using a different coloured pen, highlighter or shape works!



Online Clips

M795, M531, M949

Simplifying Expressions

Component Knowledge

- Law of indices
- Collecting like terms
- Recognise Algebraic terms and expressions

Key Vocabulary

Terms	In Algebra a term is either a single number or variable
Expression	Numbers, symbols and operators grouped together to show the value of something
Simplify	Reducing the expression/fraction to a simpler form.

Simplifying Terms - Multiplying:

Algebraic terms can be multiplied to give a simplified term. We focus on the number first, and then the variable (x *or* y), often using laws of indices.

Important – we always write terms in alphabetical order

Example	Answer
$2x \times 3 =$	$6x$
$4a \times 5b =$	$20ab$
$y^2 \times y^3 =$	$y \times y \times y \times y \times y = y^5$
$2ab \times 8cd =$	$2 \times 8 \times a \times b \times c \times d = 16abcd$
$a^5 b^3 \times a^4 bc^2 =$	$a^9 b^4 c^2$

Remember, any number to the power 0 is always 1

Simplifying Terms - Dividing:

Algebraic terms can be divided to give a simplified term. We focus on the number first, and then the variable (x *or* y), often using laws of indices.

Important – we should always write the division as a fraction,

e.g. $12a \div 6 = \frac{12a}{6}$

Example	Answer
$\frac{12a}{6} =$	$2a$
$\frac{18x}{24} =$	$\frac{3x}{4}$
$y^5 \div y^3 =$	$\frac{y \times y \times y \times y \times y}{y \times y \times y} = y^2$
$15a^4 \div 3a^2 =$	$\frac{15 \times a \times a \times a \times a}{3 \times a \times a} = 5a^2$
$a^3 \div a^3 =$	1

Online Clips

M795, M531, M120

Forming Expressions and Equations

Component Knowledge

- To be able to form expressions and equations from worded problems.

Key Vocabulary

Expression	A mathematical statement written using symbols, numbers or letters
Equation	A statement showing that two expressions are equal.
Variable	A symbol representing an unknown value
Substitute	To replace a variable with a given value
Simplify	To write an expression in its most efficient way without changing the value of the expression.
Solve	Find the of the unknown that makes the equation true
Form	Bring together parts or combine to create something

Writing expressions

We can use algebra to express values which are unknown to us

e.g. 2 more than w would be w + 2

3 lots of w would be 3w

5 fewer than w would be w – 5

We can also use it to write formulas or expressions for shapes e.g. the perimeter of this triangle is 4a + 5

Creating Expressions using Function Machines

Input	Operation	Output
x	×2	$2x$
x	÷6	$\frac{x}{6}$
e	+5	$e+5$
x	−7	$x-7$

x → ×2 → +5 → $2x+5$

x → ÷3 → +7 → $\frac{x}{3}+7$

x → −2 → ÷4 → $\frac{x-2}{4}$

x → +5 → −2 → $x+3$

x → ×2 → ×3 → $6x$

Set up equations from word problems

Jenny, Kenny, and Penny together have 51 marbles. Kenny has double as many marbles as Jenny has, and Penny has 12. How many does Jenny have?

Set up an equation then solve

Jenny's + Kenny's + Penny's = 51

n + 2n + 12 = 51

3n + 12 = 51

-12 -12

3n = 39

÷3 ÷3

n = 13

Start by writing your first unknown value as a variable e.g. n

Expressions from Worded Problems

Cindy has 2 bags of sweets and 6 loose sweets.

How many sweets does she have?

We don't know how many sweets are in a bag.

So we will **express** is using a **letter** instead.

b = the number of sweets in a bag.

$$2b+6$$

Online clip

M957

Expanding single brackets

Component Knowledge

To be able to expand a single bracket, including problems with powers.

Key Vocabulary

Expression	A mathematical statement written using symbols, numbers or letters.
Simplify	In general, an expression is in simplest form when it is easiest to use
Expand	Expand is when we multiply to remove the ( )

Expanding brackets means multiplying everything inside the bracket by the letter or number outside the bracket.
For example, in the expression $3(m+7)$ both m and 7 must be multiplied by 3:
$3(m+7)$
$=3 \times m + 3 \times 7$
$=3m + 21$

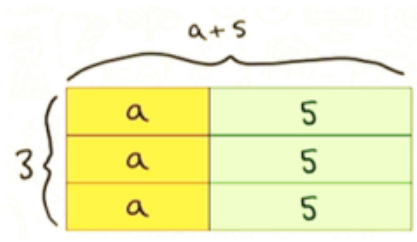
Expanding brackets involves using the skills of simplifying algebra. Remember that $2 \times a = 2a$

Example
Expand $4(3n+y)$.
$=4 \times 3n + 4 \times y$
$= 12n + 4y$

Using grid method

Expand: 3(a + 5)

3 x (a + 5)



3 x a = 3a

3 x 5 = 15

3a + 15

Using arrows

Expand:

7 (3 + a) = 21 + 7a

3x (5x + 2) = $15x^2 + 6x$

Expanding and simplifying

To expand and simplify more than one bracket, first expand each bracket then collect like terms.

2(5 + a) + 3(2 + a) = 10 + 2a + 6 + 3a
= 5a + 16

Note – collect like terms to simplify

4(x + 2) – 2(x + 2) = 4x + 8 – 2x – 4
= 2x + 4

Note: Remember the rules when multiplying negatives, - 2 multiplied by x = -2x

Online clips

M237, M792

Factorise single brackets

Component Knowledge

- To be able to factorise into a single bracket with a numerical common factor.
- To be able to factorise into a single bracket with a variable as a common factor.
- To be able to factorise expressions involving powers into a single bracket.

Key Vocabulary

Factorise	Putting an expression back into brackets
Brackets	Symbols used in pairs to group things together
Term	A single number, variable or numbers and variable multiplied together
HCF	Highest common factor

Factorise a single bracket numerical factor

Factorising to a single bracket means that we take out the **highest common factor** from each term in an algebraic expression, and then write the expression as a **product** of the HCF and a single bracket.

Example

$3x + 6 = 3(x + 2)$

3 is the HCF of $3x$ and 6, so this is written outside the single bracket.

Example

$14x - 21 = 7(2x - 3)$

7 is the HCF of 14x and 21, so is written outside the bracket.

$7 \times 2x = 14x$,
$7 \times -3 = -21$

Factorise a single bracket with variables as factors

In this example there are no numerical factors but x is a factor (as $x^2 = x \times x$)

Factorise $x^2 + 4x$.

Find the HCF of the terms	$x^2 + 4x$	**HCF** $= x$
Write the HCF and 'open' the brackets	$= x($ $)$	
Divide each term by the HCF to find the values inside the bracket.	$= x(x + 4)$	

This example has numbers and variables as factors.

Factorise $6x + 3x^2$.

Find the HCF of the terms	$6x + 3x^2$	**HCF** $= 3x$
Write the HCF and 'open' the brackets	$= 3x($ $)$	
Divide each term by the HCF to find the values inside the bracket.	$= 3x(2 + x)$	

Online clip

M100

Substitution

Component Knowledge

- To substitute positive and negative numbers into expressions with one, or more, variables.

Key Vocabulary

Expression	A maths sentence that includes a minimum of 2 variables, including an algebraic term and at least one operation.
Term	Either a single number or variable, or the product of several numbers or variables.
Substitute	To exchange an unknown variable for a number in an expression/equation/formula.

Substitution-formula

For example: The time in minutes to cook a chicken is given by the formula:

Time = 40 minutes per kilogram plus 20 minutes

Find how long it takes to cook a 5kg chicken.

Here we substitute 5kg into the formula. **So, Time= 40 x 5 +20 = 220 minutes**

The formula for speed is shown: $\boldsymbol{Speed = \frac{Distance}{Time}}$

Find the average speed when travelling 150 miles in 4 hours.

Here we substitute Distance = 150 and Time = 4 into the formula. $\boldsymbol{Speed = \frac{150}{4} = 37.5mph}$

Substitution-expressions

Example 1

$f = p + 4$. find the value of f when $p = 6$.

We substitute 6 for p in the formula.

$f = (6) + 4$

$\boldsymbol{f = 10}$

Example 2

$f = 2p + 4$. find the value of f when $p = -6$.

We substitute -6 for p in the formula.

$f = 2(-6) + 4$

$\boldsymbol{f = -8}$

Example 3

$f = t^2$. find the value of f when t = -6.

We substitute -6 for t in the formula.

$f = (-6)^2$

$\boldsymbol{f = 36}$

Example 4

$f = \frac{t^2}{5y}$. find the value of f when t = -6, y = 4.2

We substitute -6 for t and 4.2 for y in the formula.

$f = \frac{(-6)^2}{5(2.4)}$ $\boldsymbol{f = \frac{36}{12}}$

$\boldsymbol{f = 3}$

When substitute negative numbers, we must put brackets around them to ensure the correct order of operations occurs. **This very important when we use calculators.** (We can also do this with positive numbers) From example 4. $-6^2 = -(6)^2 = -36$ is not equal to $(-6)^2 = -6 \times -6 = 36$.

Online clips: M417. M327. M208. M979

Function machines and solving 1 and 2 step equations

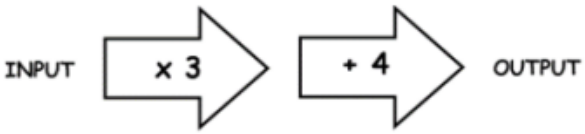
Component Knowledge

- To be able to use function machines to find the input and output value.
- To be able to solve one-step equations.
- To be able to solve two-step equations.

Key Vocabulary

Function Machine	Takes an input value, performs some operations and produces an output value.
Operation	Common operations are addition, subtraction, multiplication and division.
Inverse	The operation of another function.
Equation	a mathematical statement that shows that two mathematical expressions are equal
Solve	To find the solution

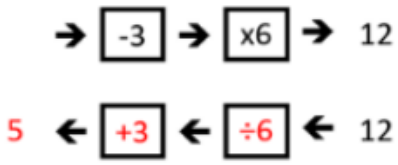
Function Machines



If the input is 5 the calculation is

5 x 3 = 15

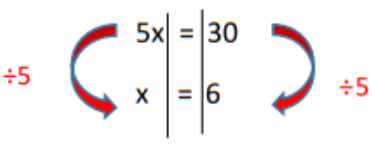
15 + 4 = 19



To find the input, start with the input and work backwards doing the inverse operations of the function machine.

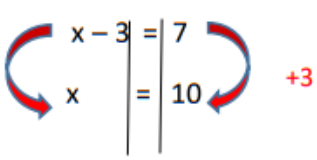
One- step equations

To solve a one-step equation, you need to do the inverse operation.



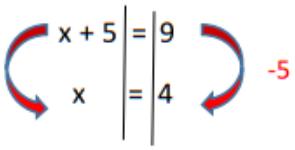
The inverse of multiplying is dividing.

We divide 30 by 5.



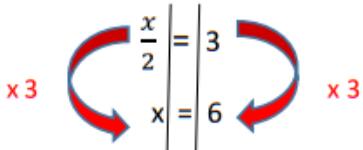
The inverse of subtracting is addition.

We add 3 to 7.



The inverse of addition is subtraction.

We subtract 4 from 9.



The inverse of dividing is multiplying.

We multiply 2 by 3.

Year 7 Topic 2: En Famille – With Family

Age
Quel âge as-tu ? – How old are you?
J'ai … ans – I am … years old

Key ideas
Age and birthday
Personality
Family
Physical descriptions

Birthday
Quelle est la date de ton anniversaire? – When is your birthday?
Mon anniversaire, c'est le *deux/ trois… - My birthday is the 2nd/ 3rd of…*

Adjectives
In French, adjectives usually go after the noun they are describing and agree with the noun (masculine, feminine, singular, plural).
For example:
les yeux *bleus* – *blue* eyes
les cheveux *noirs* – *black* hair
Simon est *petit* – Simon is *small*
Marie est *petite* – Marie is *small*

Family
As-tu des frères et des soeurs ? – Do you have brothers and sisters?
J'ai un frère – I have one brother
J'ai un demi-frère – I have one half sister / stepbrother
J'ai deux frères – I have two brothers
J'ai une soeur – I have one sister
J'ai une demi-soeur – I have one half sister / stepsister
J'ai deux soeurs – I have two sisters
Je n'ai pas de frères et des soeurs – I don't have brothers or sisters
Je suis fils unique – I am an only child (m)
Je suis fille unique – I am an only child (f)
Dans ma famille, il y a … personnes – In my family, there are … people
Il y a ma (belle-)mère – There is my (step)mum
Il y a mon (beau-)père – There is my (step)dad
Il y a mes frères – There are my brothers
Il y a mes soeurs – There are my sisters
Il y a ma grand-mère – There is my grandma
Il y a mon grand-père – There is my grandad
Il y a mes grands-parents – There are my grandparents
et moi – and me

Physical descriptions
Tu as les yeux / cheveux de quelle couleur ? – What colour are your eyes / is your hair?
J'ai les yeux bleus / verts – I have blue / green eyes
J'ai les yeux gris / marron – I have grey / brown eyes
J'ai les cheveux longs / courts – I have long / short hair
J'ai les cheveux mi-longs – I have medium-length hair
J'ai les cheveux frisés – I have curly hair
J'ai les cheveux raides – I have straight hair
J'ai les cheveux blonds – I have blonde hair
J'ai les cheveux bruns – I have brown hair
J'ai les cheveux noirs – I have black hair
J'ai les cheveux roux – I have red hair
Tu es comment ? – What are you like?
Je suis petit / petite – I am small (short)
Je suis grand / grande – I am big (tall)
Je suis de taille moyenne – I am medium height
je suis beau / belle – I am good-looking

Personality
je suis agréable – I am nice / pleasant
je suis calme – I am calm
je suis charmant / charmante – I am charming
je suis cool – I am cool
je suis drôle – I am funny
je suis généreux / généreuse – I am generous
je suis gentil / gentille – I am nice
je suis impatient / impatiente – I am impatient
je suis indépendent / indépendante – I am independent
je suis intelligent/ intelligente – I am intelligent
je suis patient / patiente – I am patient
je suis poli/ polie – I am polite
je suis responsable – I am responsible
je suis travailleur / travailleuse – I am hardworking
Avant / Dans le passé, j'étais …
- Before / In the past, I was …
Avant / Dans le passé, il/ elle était …
- Before / In the past, he/ she was …
maintenant – now

Year 7 Topic 2: Transferable Knowledge

Possessive Adjectives

My

Mon – masculine
Ma – feminine
Mes – plural

Your

Ton – masculine
Ta – feminine
Tes – plural

Intensifiers

très – very
assez – quite
vraiment – truly
réellement – really
un peu – a bit
peu – little
trop – too
extrêmement – extremely
tellement – so

Numbers

un (premier) – 1 (1st)	
deux	**– 2**
trois	**– 3**
quatre	**– 4**
cinq	**– 5**
six	**– 6**
sept	**– 7**
huit	**– 8**
neuf	**– 9**
dix	**– 10**

onze	**– 11**
douze	**– 12**
treize	**– 13**
quatorze	**– 14**
quinze	**– 15**
seize	**– 16**
dix-sept	**– 17**
dix-huit	**– 18**
dix-neuf	**– 19**
Vingt	**– 20**

vingt et un	**– 21**
vingt-deux	**– 22**
vingt-trois	**– 23**
vingt-quatre	**– 24**
vingt-cinq	**– 25**
vingt-six	**– 26**
vingt-sept	**– 27**
vingt-huit	**– 28**
vingt-neuf	**– 29**
trente	**– 30**
trente et un	**– 31**

Months

janvier – January
février – February
mars – March
avril – April
mai – May
juin – June
juillet – July
août – August
septembre – September
octobre – October
novembre – November
décembre – December

Être – to be
Je suis – I am
Tu es – You are
Il est/ Elle est/ On est – He is/ She is / We are
Nous sommes – We are
Vous êtes – You are (plural/ polite)
Ils sont / Elles sont – They are

Avoir – to have
J'ai – I have
Tu as – You have
Il a/ Elle a/ On a – He has/ She has / We have
Nous avons – We have
Vous avez – You have (plural/ polite)
Ils ont / Elles ont – They have

Key verbs in the in the present tense

S'appeler – to be called
Je m'appelle – I am called
Tu t'appelles – You are called
Il s'appelle / Elle s'appelle / On s'appelle – He is called/ She is called / We are called
Nous nous appelons – We are called
Vous vous appelez – You are called (plural/ polite)
Ils s'appellent / Elles s'appellent – They are called

Connectives

et – and	**mais – but**	**aussi – also**
parce que – because	car – because	puisque – since
cependant – however		

Year 7 Topic 3: Mon Collège – My School

Eating in the canteen

Qu'est-ce que tu manges aujourd'hui à la cantine?
– What are you eating today in the canteen?
Je mange du fromage – I eat cheese/ I am eating cheese
Je mange du poisson – I eat fish/ I am eating fish
Je mange du poulet – I eat chicken/ I am eating chicken
Je mange du steak haché – I eat beefburger/ I am eating beefburger
Je mange du yaourt – I eat yoghurt/ I am eating yoghurt
Je mange de la pizza – I eat pizza/ I am eating pizza
Je mange de la glace à la fraise
– I eat strawberry ice-cream/ I am eating strawberry ice-cream
Je mange de la mousse au chocolat
– I eat chocolate mousse/ I am eating chocolate mousse
Je mange des frites – I eat chips/ I am eating chips
Je mange des sandwichs
– I eat sandwiches/ I am eating sandwiches

Comparatives

Le français est plus *intéressant* que le théâtre. – French is more *interesting* than drama.
La géographie est plus *intéressante* que l'histoire. – Geography is more interesting than history.

Using a range of language improves the quality of our speaking and writing and allows us to access more challenging texts!

Opinions

On a *beaucoup de* devoirs – We have *a lot of* homework
Le/ la prof est sympa – The teacher is nice
Le/ la prof est trop sévère – The teacher is too strict

Key ideas

School subjects
Opinions
Time
The school day
Eating in the dining room

The school day

On a cours le lundi – We have lessons on Mondays
On commence les cours à… – We start lessons at…
Les cours commencent à… – Lessons start at…
On a *trois* cours le matin
– We have *3* lessons in the morning
On étudie *neuf* matières – We study *9* subjects
On finit les cours à… – We finish lessons at…
Les cours finissent à… – Lessons finish at…

School subjects

Qu'est-ce que tu étudies au collège ?
– What do you study at school?
Au collège… - At school…
J'étudie le français – I study French
J'étudie le théâtre – I study drama
J'étudie la géographie – I study geography
J'étudie la musique – I study music
J'étudie la technologie – I study technology
J'étudie l'anglais – I study English
J'étudie l'EPS – I study PE
J'étudie l'histoire – I study history
J'étudie l'informatique – I study computing
J'étudie les arts plastiques – I study art
J'étudie les maths – I study maths
J'étudie les sciences – I study science

Talking about the time

Quelle heure est-il ? – What time is it?
Il est une heure – It is one o'clock
Il est huit heures – It is eight o'clock
Il est huit heures *cinq* – It is *five past* eight
Il est huit heures *dix* – It is *ten past* eight
Il est huit heures *et quart* – It is *quarter past* eight
Il est huit heures *vingt* – It is *twenty past* eight
Il est huit heures *vingt-cinq* – It is *twenty-five past* eight
Il est huit heures *et demie* – It is *half past* eight
Il est neuf heures *moins vingt-cinq* – It is *twenty-five to* nine
Il est neuf heures *moins vingt* – It is *twenty to* nine
Il est neuf heures *moins le quart* – It is *quarter to* nine
Il est neuf heures *moins dix* – It is *ten to* nine
Il est neuf heures *moins cinq* – It is *five to* nine
Il est midi – It is midday
Il est minuit – It is midnight

Year 7 Topic 3: Transferable Knowledge

Opinions
Tu aimes …? – Do you like…?
Qu'est-ce que tu aimes…?
– What do you like…?
J'aime… – I like…
J'aime beaucoup… - I like… a lot
J'adore… - I love…
Je n'aime pas… - I don't like…
Je déteste… - I hate…
C'est ma matière préférée
– It's my favourite subject
Mon copain aime… - My friend (m) likes…
Pourquoi ? – Why?
parce que… - because…
c'est intéressant – It is interesting
c'est ennuyeux – It is boring
c'est facile – It is easy
c'est difficile – It is difficult
c'est génial – It is great
c'est nul – It is rubbish
c'est marrant – It is fun/ funny
Avant / Dans le passé… - Before / In the past…
J'adorais… - I used to love…
J'aimais… - I used to like…
Je n'aimais pas… - I didn't used to like…
Je détestais… - I used to hate…
c'était… - it was…
Je voudrais étudier… - I would like to study…

Time Expressions
(Le) lundi – (On) Mondays
(Le) mardi - (On) Tuesdays
(Le) mercredi - (On) Wednesdays
(Le) jeudi - (On) Thursdays
(Le) vendredi - (On) Fridays
Le matin - (In) the morning
L'après-midi – (In) the afternoon
Le soir – (In) the evening
La récréation – Break time
Le déjeuner – Lunch time
Tous les jours – Every day
Aujourd'hui – Today

Intensifiers
très – very
assez – quite
vraiment – truly
réellement – really
un peu – a bit
peu – little
trop – too
extrêmement – extremely
tellement – so

Key verb in the present tense

Étudier – to study
J'étudie – I study
Tu étudies – You study (sing. / informal)
Il étudie – He studies
Elle étudie – She studies
On étudie – We study
Nous étudions – We study
Vous étudiez – You study (plural / polite)
Ils étudient – They study (m / m+f)
Elles étudient – They study (f)

Definite Article – The
le – masculine
la – feminine
les – plural
l' – starts with a vowel sound

Partitive Article – Some
de + le = du (masc.)
de + la = de la (fem.)
de + les = des (plural)
de + l' = de l' (starts with a vowel sound)

Connectives
et – and
mais – but
aussi – also
parce que – because
car – because
puisque – since
cependant – however

Sequencers
D'abord – First of all
Puis – Then
Ensuite – Next
Finalement – Finally

Year 7 - SAMBA

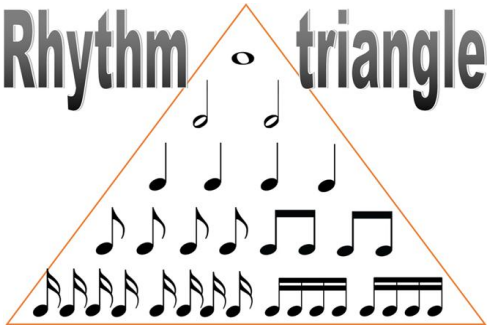
ELEMENTS OF MUSIC:
MELODY - The tune, whether the PITCH goes up or down.
ARTICULATION - How a note is articulated - short and spiky or smooth.
DYNAMICS - The VOLUME of the music.
TEXTURE - How many layers of sound – thick/thin.
STRUCTURE - How the music is organised.
HARMONY - When more then one pitch is heard at once.
INSTRUMENTATION - The type of sound heard (also called TIMBRE)
RHYTHM - A pattern of long and short notes.
TIME SIGNATURE - The amount, and type, of beats in each bar.

MUSICAL VOCABULARY:
CALL & RESPONSE – A 'question and answer' musical phrase.
BEAT – A steady pulse that continues throughout the music.
RHYTHM – A pattern of long and short notes/rests.
CYCLIC RHYTHM – A short rhythm repeated over and over – also called OSTINATO.
POLYRHYTHM – When different cyclic rhythms are played at the same time.
GRID NOTATION – a way of writing down and recording rhythms using boxes:

THE STRUCTURE OF SAMBA MUSIC:
INTRO: A call and response section between the leader (**Sambista**) and the rest of the group – designed to call everyone to attention before the parade begins.
MAIN GROOVE – A polyrhythmic section combining many different cyclic rhythms – creates a complex texture.
BREAK – can be an improvised solo section or another Call and Response before moving back to the MAIN GROOVE.
CODA – short ending section, usually played in unison.

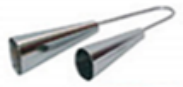
NOTE VALUES:

NOTE	NAME	VALUE	REST
𝅝	Semibreve	4 beats	𝄻
𝅗𝅥	Minim	2 beats	𝄼
♩	Crotchet	1 beat	𝄽
♪	Quaver	1/2 beat	𝄾
𝅘𝅥𝅯	Semiquaver	1/4 beat	𝄿



SAMBA is a musical genre and dance style from Brazil which combines Brazilian traditions with African rhythms. It has become the national cultural expression of music in Brazil and can be seen in the spectacular Carnival celebrations in Rio de Janeiro every year. Samba schools keep these traditions alive and compete each year.

SURDO: The 'bass drum' of the Samba band that keeps everyone in time.



AGOGO BELLS: Two different pitched bells that cut through the texture of the polyrhythm.

TAMBOURIN: The smallest drum, often used by the leader.

GANZA: A shaker that keeps a constant rhythm throughout.

CAIXA: Has snares that rattle to create a driving force in the Samba band.

REPENIQUE: Often plays the lead rhythm.

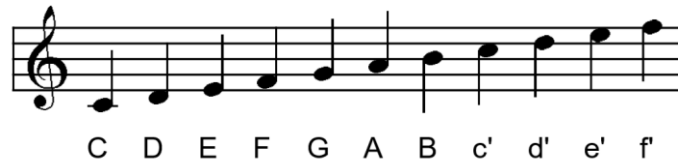
APITO: The leader's whistle which signifies when a new section is about to start.

Year 7 – Keyboard Skills

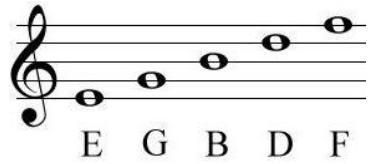
ELEMENTS OF MUSIC:
MELODY - The tune, whether the PITCH goes up or down.
ARTICULATION - How a note is articulated - short and spiky or smooth.
DYNAMICS - The VOLUME of the music.
TEXTURE - How many layers of sound – thick/thin.
STRUCTURE - How the music is organised.
HARMONY - When more then one pitch is heard at once.
INSTRUMENTATION - The type of sound heard (also called TIMBRE)
RHYTHM - A pattern of long and short notes.
TIME SIGNATURE - The amount, and type, of beats in each bar.

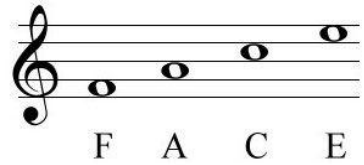
MUSICAL VOCABULARY:
STAVE – the five lines where musical notes are written.
PITCH – how high or low a note is.
TREBLE CLEF – a symbol used to show higher pitched notes
MELODY – the tune.
TECHNIQUE – using the correct fingers to play the notes.

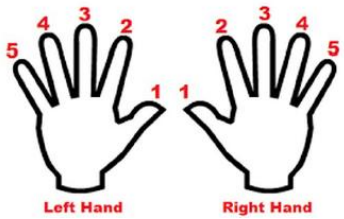
Notes are written in alphabetical order, upto G, on lines and spaces:



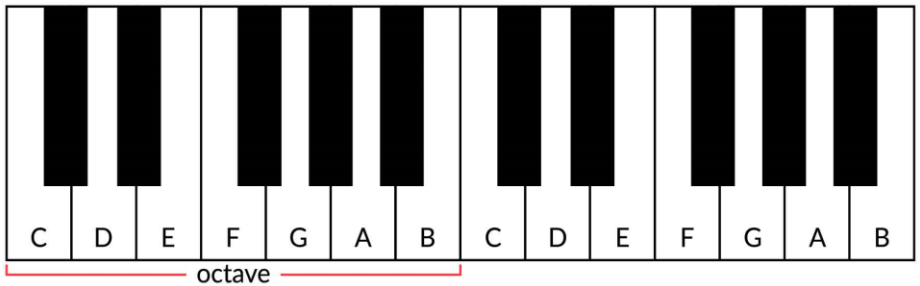
These can be separated out to make them easier to remember:







- A keyboard is laid out with **black and white** keys.
- C is always to the left of the two black keys.
- The notes continue in alphabetical order to G and then start again at A.
- Notes with the same letter name/pitch are said to be an **OCTAVE** (8 notes) apart.
- **MIDDLE C** is the C in the centre of a keyboard.
- It is important to try and use the correct technique to play the keyboard – which means using all your fingers, not just one.



KS3 PE KNOWLEDGE ORGANISER – ACTIVITY: BADMINTON

Skills and Techniques:

➔ **Clear:** Shot played high to the back of the opponent's court, a defensive shot.

➔ **Drop shot:** Delicate shot played just over the net into the space. Gets your opposition out of position to attempts a smash or clear.

➔ **Grip**: V shape down the handle. (Shake its hand)

➔ **Smash:** Most attacking shot. Hitting the shuttle cock at its highest point with power, trying to get the shuttlecock to hit the floor on the opponent's side as quickly as possible

➔ **Flick Serve:** Short serve which is played typically in doubles. Aim is to get the shuttlecock to stay low over the net and land just over the service line.

➔ **Underarm serve:** Serve typically played in singles. Aim is to get the shuttles as high as you can towards the backline. Gets you opposition to the back of the court

Scoring:

➔ Serve Diagonal and land across the service line.

➔ Play to 21 points (2 clear points to win).

➔ Whoever wins the point, their team serve.

➔ Serve on the right when the score is even, on the left when it is odd.

➔ Long and thin for doubles, short and fat for singles.

➔ You cannot touch the net Serve must be at waist height or below.

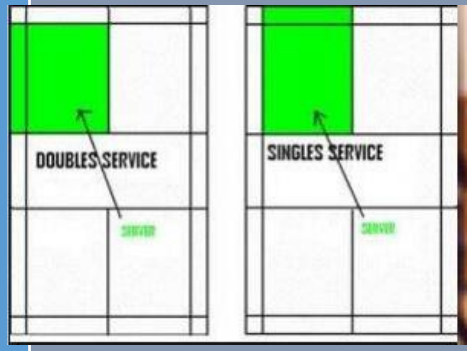
Rules:

➔ The aim of badminton is to hit the shuttle with your racket so that it passes over the net and lands inside your opponent's half of the court.

➔ Whenever you do this, you have won a rally; win enough rallies, and you win the match. Your opponent has the same goal.

➔ They will try to reach the shuttle and send it back into your half of the court. You can also win rallies from your opponent's mistakes: if they hit the shuttle into or under the net, or out of court, then you win the rally.

➔ If you think your opponent's shot is going to land out, then you should let it fall to the floor. If you hit the shuttle instead, then the rally continues. Once the shuttle touches the ground, the rally is over.



Key Words:

Ready position
Forehand and backhand serve.
Defensive clears
Forehand drop shot
Basic backhand
Outwitting opponents
Leadership skills
Scoring system
Rules and regulation Court lines dimensions
Equipment familiarisation
Movement

Tactics:

➔ Doubles – front/back or side to side.

➔ Hitting into space.

➔ Targeting opponents weakness- Shot selection.

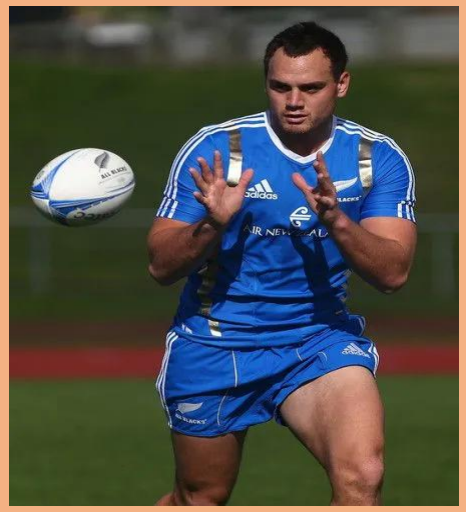
KS3 PE: ACTIVITY: RUGBY

Passing:

- Hold the ball in two hands with your fingers spread across the seam, with your chest facing forward.
- Draw the ball back across one hip, keeping your elbows slightly bent, as you turn your chest away from the target.
- Sweep the ball off your hip as you swing your hands through an arc, keeping your elbows close to your body.
- Release the ball with a flick of the wrists and fingers.
- Follow through with your fingers pointing to the target - chest high in front of the receiver.

Catching

- **Call for the ball**
- **Keep eyes on the ball**
- **Hands up and make W shape**
- **Reach over the side of the body**
- **Catch with ten points of contact (both hands)**
- **Continue running with ball in both hands**



Tackling

- Position your body to the opponent's right-hand side (safe side).
- Position your left foot forward into a slight opposition.
- Make contact by putting your right shoulder into the opponent's mid-right thigh.
- Make sure your head is on the other side of the ball carrier so their body is between your shoulder and head.
- Bring your arms up and wrap them around the ball carrier, just above their knees (
- Squeeze your arms and pull the ball carrier into your body.
- Push your shoulder into the ball carrier, as though you are trying to push him away with your head.
- Continue pushing until both you and the ball carrier fall to the ground.

Playing the Ball (Rugby League)

- After the tackle, lift the ball clear of the ground, face their opponent's goal line and roll it under their foot to the player behind them, the acting half back.
- The ball has to always travel backwards.
- A player can play the ball to themselves by heeling it backwards, stepping over the ball and then picking it up to run with it or to pass to another player.

Presenting the ball (Rugby Union)

- 'Eyes up' to keep head and neck inline
- Enter the ruck from behind the player (through the gate)
- Keep head and shoulders above hips at all times
- Make contact by binding on a player using the whole arm

KS3 PE ACTIVITY: RUGBY

Rugby League

Rules

➔ Game starts and restarts with a kick off.

➔ Three officials- Referee and two touch judges.

➔ Passing from the hand must travel level or backwards to the receiver.

➔ Tackling must be below shoulder

➔ If a player knocks on (drops the ball forward) the opposing side will gain possession via a scrum.

➔ When referee calls that the tackle is complete you must stand up and play ball between your legs to a player behind

➔ You must be behind the kicker when the ball is kicked to be onside

Positions

- 1 Full back
- 2 Right wing
- 3 Right centre
- 4 Left centre
- 5 Left wing
- 6 Stand-off half
- 7 Half-back
- 8 Prop
- 9 Hooker
- 10 Prop
- 11 Second Row
- 12 Second Row
- 13 Loose Forward

Points System:

4 points = TRY
2 Points = Penalty/Conversion
1 Point = Drop goal

Tactics in possession:

- 6 tackles (or chances to score), kick on 5th.
- If the ball goes out of play after such a kick, play restarts with a six player scrum.

Rugby Union

Positions

- 1 Loosehead Prop
- 2 Hooker
- 3 Tighthead Prop
- 4 Second Row
- 5 Second Row
- 6 Blindside Flanker
- 7 Openside Flanker
- 8 Number 8
- 9 Scrum Half
- 10 Fly Half
- 11 Left Wing
- 12 Inside Centre
- 13 Outside Centre
- 14 Right Wing
- 15 Fullback

Points System:

5 points = TRY
3 Points = Penalty & Drop goal
2 Point = Conversion

Rules

➔ Game starts and restarts with a kick off.

➔ Three officials- Referee and two touch judges.

➔ Passing from the hand must travel level or backwards to the receiver.

➔ Tackling must be below waist (sternum)

➔ If a player knocks on (drops the ball forward) the opposing side will gain possession via a scrum.

➔ You may not tackle a player in the air. You must enter a ruck from the back foot of your side of the ruck.

➔ Any player in front of a player kicking must wait for the kicker to pass or they will be offside.

Tactics in possession:

- Unlimited tackles
- Attacking side continue until they lose ball or concede penalty
- If the ball is kicked out of play restarted with a lineout Scrum used for knock-ons, forward pass restarts

Key Words:

Pass Run
Tackle
Ruck Maul
Scrum
Penalty
Free-kick
Knock-on
Forward pass
High tackle
Defensive line
Scissor
Loop

KS3 PE KNOWLEDGE ORGANISER – SWIMMING ACTIVITY

Skills and Techniques: Back Crawl	Skills and Techniques: Front Crawl	Skills and Techniques: Breaststroke	Skills and Techniques: Butterfly
Body position Horizontal Streamlined Head still Eyes looking upward Hips close to surface **Leg Action** Continuous up and down motion Legs close together Relaxed ankles **Arm Action** Thumbs leave the water first Little finger entry	**Body position** Flat and streamlined Eyes looking forwards and downwards **Leg Action** Continuous and alternating Starts from the hip Ankles relaxed **Arm Action** Thumb enter the water first Enter between the headline and shoulder line Elbow exits first **Breathing** Head rolls to the side to breath Bilateral breathing	**Body position** As horizontal as possible Shoulders horizontal **Leg Action** Starts in glide position Heels drawn towards the seat Feet turned out Kick backwards with a circular whipping action **Arm Action** From glide position, hands turn outwards Pull downwards and outwards to in line with shoulders Arms meet in the centre of the body and drive out to glide position	**Body position** Horizontal, with a wave like movement from head-to-toe Shoulders kept level **Leg Action** Legs close together Ankles relaxed toes pointed Action starts from the hips. Kick up and down with a bend at the knee **Arm Action** Thumb first entry shoulder width apart Pull downwards, with bent elbows Hands leave the water little finger first Arms clear the water just above the surface **Breathing** Lift head and push chin forwards Head lowered quickly but smoothly




KS3 PE KNOWLEDGE ORGANISER – ACTIVITY: TABLE TENNIS

Serve:

➔**Serve:** The first shot to begin a rally. The serve is alternated between the two players, after two serves the service goes to the opposite player regardless of the winning shot.
➔There are different types of serving.
➔Forehand and Backhand serves
➔Short and Long serves.
➔Topspin and Backspin serves
➔When serving in Table Tennis, if the ball hits the net but still bounces on the opponents side of the table, the point is a let (which means it needs to be replayed).

Backhand Push:

➔ **Backhand push:** The ball is played on the backhand side, with a flat bat face to push the ball over the net.
➔The Backhand push shot is a controlled shot.
➔Step into the shot with your strongest foot with the paddle facing towards where you want to ball to be placed.

Forehand Push:

➔ **Forehand push:** The ball is played on the forehand side, with a flat bat face to push the ball over the net.
➔The Forehand push shot is a controlled shot.
➔Step into the shot with your weakest foot with the paddle facing towards where you want to ball to be placed.
➔Make sure our body is opened to make the shot.

Forehand and Backhand Chop:

Start the paddle from the top of your body and move across your body to get that chopping position. Forehand, move from right to left, in an upwards and downwards movement. Backhand chop, move from left to right, in an upwards and downloads movement.

Forehand and Backhand Drive:

Forehand/Backhand drive: A shot played on the forehand side, contact cuts on an angle (closed bat position) to the ball to make it move differently,

Key Words:

Table
Ball
Bat
Open/Closed/ Neutral Grip
Position
Service
Drives
Push
Smash
Lob
Block
Net

Year 7
Term 2: Health
Knowledge Organiser

USER GROUPS in Sport/Fitness

- Young children
- Teenagers
- People with disabilities
- Parents (singles or couples)
- People who work
- Unemployed/economically disadvantaged people
- Gender
- People from different ethnic groups
- Retired people/people over 60
- Families with children
- Carers
- People with family commitments

WATER SAFETY

1.Floating: The ability to float on your back helps conserve energy and breathe more easily while waiting for rescue.
2.Treading Water: This skill involves moving your arms and legs to keep your head above water, allowing you to stay in one place without sinking.
3.Swimming for Distance: Knowing how to swim at least 25 meters can help you reach safety or a shore if needed.
4.Controlled Breathing: Practicing proper breath control allows you to stay calm, conserve energy, and avoid panic in emergency situations.

TRAINING METHODS:

1.Circuit Training: A form of exercise where participants cycle through a series of exercises, targeting different muscle groups, with minimal rest between each station.
2.Continuous Training: Involves sustained, steady-state activity, like running or cycling, for an extended period without rest, designed to build cardiovascular endurance.
3.Weight Training: A form of strength training using weights (dumbbells, barbells, or machines) to build muscle strength and endurance.
4.Fartlek Training: A type of running workout that blends continuous and interval training by varying pace and intensity over different terrains or set times.
5.Interval Training: Alternates between periods of high-intensity effort and low-intensity recovery, improving speed and cardiovascular fitness.
6.Plyometric Training: Focuses on explosive movements, like jumps or bounds, to increase power and strength in muscles, particularly useful for athletes.

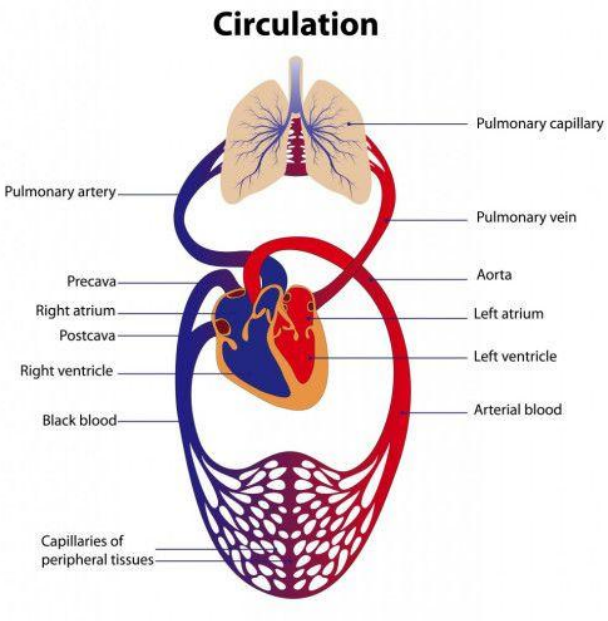
CARDIOVASCULAR SYSTEM

Veins

Veins are blood vessels that return deoxygenated blood from various parts of the body back to the heart, where it can be reoxygenated.

Arteries

Arteries are blood vessels that carry oxygen-rich blood away from the heart to tissues and organs throughout the body, ensuring they receive the oxygen and nutrients needed for proper function.



Key Vocabulary: Veins Arteries Circuit Plyometric Interval Continuous Weight Fartlek Water Safety User Groups

Life Lessons – Summer Term KS3 – Sex and Relationships	
Who can help?	**How can they help?**
Westhoughton High School	• Speak to **your trusted adult** in school if you have any questions or concerns relating to any of the topics we discuss in Life Skills. • Our **school nurse** is called Alison Clarke. You can speak to her if you have any health related concerns. You can contact her on 01204 463307.
childline ONLINE, ON THE PHONE, ANYTIME	**Childline:** • www.childline.org.uk • 0800 1111 • Childline provides a **free, confidential helpline** for children and young people under 19 in the UK to talk about any issue they are facing, such as mental and emotional health, bullying, self-harm, or family problems. It offers support 24/7 via phone, 1-2-1 chat, and email, and its trained counsellors listen, provide advice, and help children make positive changes.
brook	**Brook:** • www.brook.org.uk • Provides a variety of support for teenagers, including free and confidential **sexual health services**, advice on sexual health and relationships, and 1-2-1 targeted support for those needing more personalized help with topics like consent and emotional wellbeing.
HEALTH FOR TEENS	**Health for teens:** • www.healthforteens.co.uk • bite-sized health information and quizzes for teens on topics including **physical health, emotional wellbeing, and lifestyle.** It covers a wide range of subjects like sexual health, anxiety, nutrition, and online safety.
FORTALICE	**Fortalice**: • Fortalice is a charity based in Bolton, UK, that provides support and services for people affected by **domestic abuse and violence**. It offers frontline services including refuge accommodation, crisis support, counselling, and group work for women, children, and young people

Year 7 Religion & Society - What brings us together?
Unit 2: RE – Introducing religions and worldviews
Part 1: How do we study religions and worldviews?

1.What is a religion and how do we study them?

- From the Latin *religio*, meaning to bind or connect,
- Historically, humans have always asked big questions about their place in the universe and what it means to live a good life whilst we are here in this world.
- Over time, religion has developed in response to these questions about life, truth and meaning.
- Religious belief can significantly shape a person's worldview and the way they live their lives.
- Though hard to define, religion seems to be a universal experience and need.
- Religion, at its heart, is supposed to be a great uniter that enables all who participate in it to seek and experience a sense of truth, purpose and belonging.
- There are many famous examples of individuals and groups inspired by the religious faith who have been a force for good in the world in which we live.
- However there has also been examples of where individuals and groups have come into conflict with one another due to contrasting religious beliefs.
- The study of religion is made up of several branches of knowledge: theology, philosophy, social sciences, each of which offers a different lens through which to study religion and worldviews.
- One of the ways we can learn about belief in our changing society is through the census, which is a survey that every household completes every 10 years in England and Wales.

2. What is a worldview and how are they formed?

- Our worldview relates to the beliefs, values and stories that collectively inform the way we live and behave.
- We all have a worldview even if we are not religious or don't believe in God, as we all stand somewhere and nobody stands nowhere, meaning we have all been shaped by our influences.
- A person's worldview can be formed by beliefs about:
    - The purpose of life
    - What we mean by a ‘good life’
    - The values we should live by and the skills and qualities that we should have
    - How we should spend our time
    - How we should treat loved ones - How to treat strangers or enemies
    - How to treat animals, the earth and the environment
    - God, religion, spirituality, ghosts - Views about life, death, afterlife
    - Views about wealth, poverty, charity
    - Views about the laws of the land and how the communities we live in should be run.
- A person's worldview can be shaped by many different influences including: age, family and upbringing, friends, where they live, culture, life events, experiences, education, media and of course religion, which can also have a significant influence on many of these other factors.

Year 7 Religion & Society - What brings us together?
Unit 2: RE – Introducing religions and worldviews
Part 2: What religions have shaped the UK? (Religious Literacy)

3. What are the Abrahamic Faiths?

- Judaism (1st - 1500BCE – 3500 years ago)
- Christianity (2nd - 30CE – 2000 years ago)
- Islam (3rd - 610 CE – 1400 years ago)
- Symbols of each faith

How are the faiths connected?

- Monotheistic – all 3 religions believe in 1 God
- Traced back to Abraham (Patriarch) & the Hebrews
- Revelations or prophecy is important to each religion
- Linked through the city of Jerusalem
- The person of Jesus connects the faiths although each religion has different beliefs about him
- All three believe God is:
    - omnipotent (all-powerful)
    - omniscient (all knowing)
    - omnibenevolent (all loving)
- The story of creation is an example of a story that believers might say, show all 3 of these values

4. What are key features of the Abrahamic Faiths?

Judaism: Followers referred to as Jews – Famous holy book is the Torah - Founder is Abraham - Place of worship is synagogue – Festivals include Pesach & Rosh Hashanah

Christianity: Followers referred to as Christians - Famous Holy book is the Bible - Founder is Jesus – Place of worship is a church - Festivals include Christmas & Easter.

Islam: Followers referred to as Muslims - Holy book is Qur'an - Founder is prophet Muhammad - Place of worship is a mosque – Festivals include Eid-ul-Fitr / Adha

5. What are the Dharmic Faiths?

- Hinduism (1st - 2000-3000 BCE - 4k to 5k years ago)
- Buddhism (2nd - 560 BCE - 2500 years ago)
- Sikhism (3rd - 1500 CE - 500 years ago)
- Symbols of each faith
- The oldest of the 6 world religions we will study is Hinduism and the youngest is Sikhism

How are the faiths connected?

- All three originate from the Indian sub-continent
- The concepts of Dharma, Samsara, Karma

6. What are key features of the Dharmic religions?

Hinduism: Followers referred to as Hindus - Famous holy book is the Vedas - No known founder - place of worship is a Mandir - Festivals include Diwali & Holi.

Buddhism: Followers referred to as Buddhists – Famous holy book is the Tripitaka – Founder is Prince Siddhartha Gautama (The Buddha) – Place of worship is the Buddhist Temple or Monastery – Festivals include Wesak & Bodhi Day.

Sikhism: Followers referred to as Sikhs – Famous holy book is Guru Granth Sahib - Founder is Guru Nanak - Place of worship is Gurdwara - Festivals include Vaisakhi

Year 7 Religion & Society - What brings us together?
Unit 3: Religious Education – Exploring Hinduism What beliefs and practices bring Hindus together?

Lesson 1 - Is Hinduism one religion?

- Hinduism originates from **Indus Valley** in **India** 4000 years ago and it is the **oldest** of the 6 world religions we will study at WHS. **Om "Aum"** is a sacred sound and symbol in Hinduism.
- There are **1 billion Hindus worldwide** (15% of population) In England there are 800'000 Hindus (1.4% of population)
- Many Hindus would describe themselves a **monotheistic** religion as they believe in a single, ultimate reality called **Brahman. Brahman** is eternal, formless and beyond human comprehension.
- However, practically, Hinduism often looks **polytheistic** because many Hindus worship multiple Gods or deities such as the triad of three Gods that make up the Trimurti: Brahma (the Creator), Vishnu (the Preserver) and Shiva (the Destroyer)
- Brahman is the supreme God who is perfect and everlasting but has may avatars that can equate to millions of different deities.

KEY TERMS:

- **Monotheism**: the doctrine or belief that there is only ONE God.
- **Polytheism**: the belief in MORE than one God.
- **Brahman**: the perfect reality that creates all things (has no beginning or end)
- **Trimurti**: the triad of the three Gods – Brahma, Visnu & Shiva.

Lesson 2 Why is the samsara important?

- Hindus try to behave morally to complete their "duty/ purpose" or "**dharma**" in life. However, not everyone's Dharma is the same e.g.) your dharma as student is to work hard – not following your Dharma is called **Adharma.**
- In order to achieve good **karma**, Hindus try to be good and considerate. Being selfish could equate to bad karma, affecting how you live in your next life.
- Samsara is a Sanskrit word meaning the wheel of rebirth – Hindus believe that when a person dies their soul "**Atman"** is passed into another form depending on your good/bad karma.
- The ultimate goal for Hindus is to achieve "**Moksha**" which is the eternal freedom of the Cycle and to "be one with God".

KEY TERMS:

- **Karma:** the "action" that is linked to "cause and effect".
- **Dharma**: a moral law that must be followed by Hindus.
- **Reincarnation**: When the soul is reborn by passing into a new body.
- **Samsara:** the continual process of death and rebirth.

Lesson 3 How do Hindus worship?

- **Private puja** – worshipping at home in a "shrine".
- **Public puja** – worship in a Mandir with a priest leading.
- For daily devotion, many Hindu families have a home **shrine**, often in a corner of the best room in the house. It is a way of honouring the gods and goddesses. Worship at the shrine may involve the whole family, or sometimes it is done alone. A daily **puja** ceremony uses all five of the senses. For this a Hindu needs the following:
- **Bell** – to awaken the God/goddess and alert to your presence.
- **Food** – to give as gift/offering so that the God/ Goddess can bless the food. (typically, sweets or fruits)
- **Murti** – an image or statue of the deity.
- **Incense and flowers** – burning of the incense symbolises the presence of the deity.
- **Kumkum powder** – a red paste placed on the worshipper's forehead to remind them of their devotion.

KEY TERMS:

- **Puja:** The act of worship in Hinduism.
- **Mandir:** Hindu temple.
- **Shrine:** a place regarded to as holy because of its associations with a divinity or a sacred person or relic, marked by a building or other construction.
- **Murti:** an image of a God or goddess.
- **Devotion:** religious worship or observance.

Year 7 Religion & Society - What brings us together?
Unit 3: Religious Education – Exploring Hinduism What beliefs and practices bring Hindus together?

Lesson 4 What is the caste system?

- The concept of caste stems from an ancient group of people called the **Aryans**, who settled within the Indian subcontinent. Among these ideas included a system that separated Indian society into factions primarily based around **occupation and wealth.**
- According to some ancient **Hindu texts**, every person belonged to **caste/class.** This would determine what job he or she did.
- The system intended to create a **balanced** community in which everyone carried out a specific job.
- the **caste system**, there is very little to **no movement** within the social structure. Consequently, if you are born into a lower caste, you will most likely never reach a higher caste.
- The **Indian government** passed **Article 17** in their constitution in 1950, which outlaws the practice of discrimination based on untouchability. The **Indian Constitution** has also outlawed caste discrimination in the workplace and education.
- These practices are still prevalent outside of India due to migration and upholding traditions. However, western born Hindus may not uphold this tradition due to their widened approach.

KEY TERMS:

Varna – a class or category in the ancient Caste System.

Brahmins – priests and teachers

Kshatriyas – warriors and rulers.

Vaishyas – farmer, traders and merchants

Shudras – laborers

Dalits (untouchables) – street sweepers, toilet/gutter cleaners

Lesson 5 What example does Ghandi set about how to live?

- Mahatma Ghandi was born in 1869 in India to a middle-class Hindu family. Originally called **Mohandas**, he was later given the title **"Mahatma**" meaning "**great soul**"
- Ghandi trained to be a lawyer in England and then spent time in South Africa. He faced discrimination as he was thrown off a first-class train due to the colour of his skin. This was due to **Apartheid laws**. This segregated people of colour from society.
- **Ghandi** was upset and angry but instead followed the Hindu principle of "**Ahimsa**", always protesting non-violently, even in the face of aggression and this influence is approach to protesting.
- Ghandi believed that suffering for the truth **(Satyagraha)** was very powerful and persuasive, he regularly led non-violent protests, marches and on occasions fasted to the point of starvation.
- He gave up all of his wealth and was heavily motivated by his religion. He used **mass disobedienc**e to help protest for the rights of coloured people in South Africa.
- In 1915. Ghandi returned to **India** and led a peaceful fight against the British Rule through boycotting British goods and taxes.
- Ghandi also campaigned against the **caste system**, by taking untouchable children from the streets and taking them to a Mandir that excluded them to perform worship.
- Ghandi was **assassinated** in1948 - 3 million people attended funeral.
- His message today still influences political decisions and guides Hindus on the success of following Hindu principles and teachings.

KEY TERMS:

- **Mahatma –** Great Soul
- **Apartheid Law** – A political systemin South Africa were non-whites had no rights.
- **Ahimsa** – Hindu principle of non-violence and love
- **Satyagraha** – literally means 'truth force' - taking ahimsa further, this is the belief in suffering for the truth and using violence against the aggressor.

Year 7 Religion & Society - What brings us together?
Unit 3: Religious Education – Exploring Hinduism - What beliefs and practices bring Hindus together?

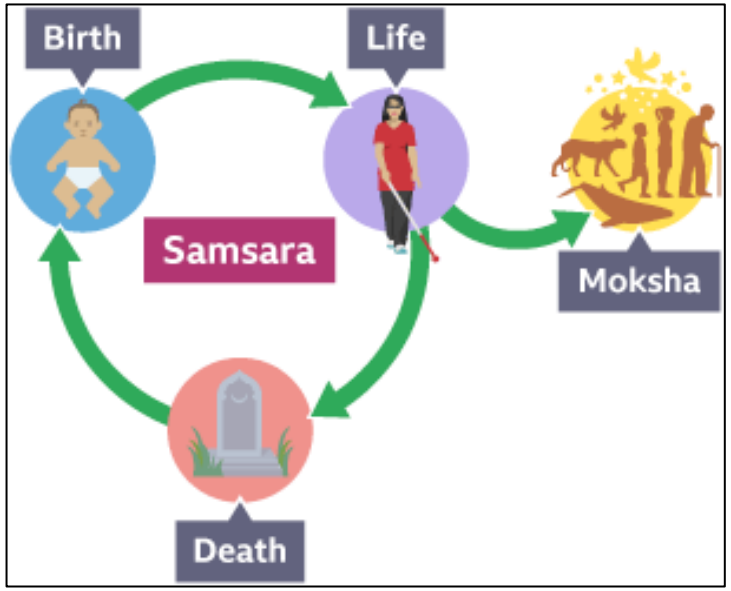
Lesson 6 Why is the Ramyana an important story?

- Hinduism is a religion filled with festivals; most celebrate the morals of stories about gods and goddesses.
- One of the most well-known festivals is the festival of light, also known as **Diwali.** This celebration celebrates the story of **Rama and Sita.**

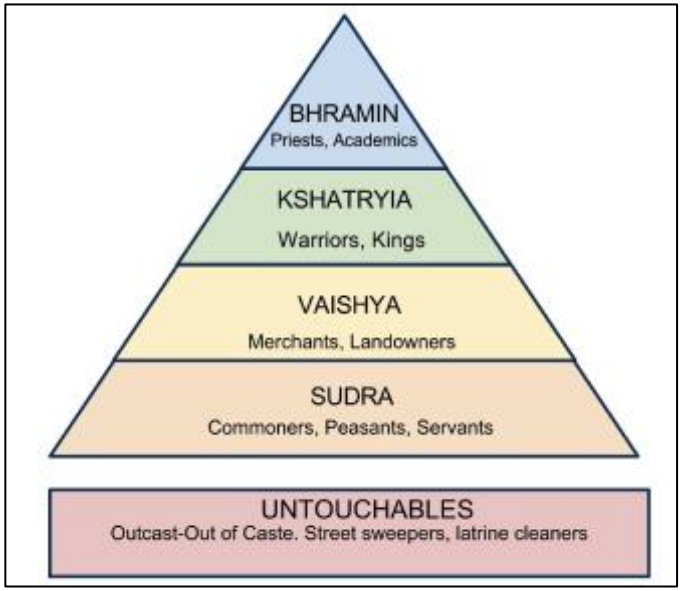
The story of Rama and Sita:

- Prince **Rama** and his wife **Sita** were exiled from the kingdom by his father. They left with Rama's brother **Lakshman**. Living nearby was the demon king, **Ravana** who had ten heads and twenty arms and was feared throughout the land.
- One day he had kidnapped Sita to avenge for his sister who was turned down by Lakshman.
- Sita scattered a trail of her jewellery which Prince Rama and Lakshman followed. With the help of the animals of land, they found the whereabouts of Sita. Rama went to battle Ravana and shot an arrow in his naval which killed him instantly and Rama was reunited with his love Sita.
- They returned to the kingdom where candles were lit, and celebrations were carried to commemorate the defeat of evil.
- Hindus celebrate the festival of Diwali by remembering this story, lighting fireworks and candles' cleaning and decorating their homes, special prayers to Lakshmi and Ganesha, new clothes and sweets and enjoying coming together as a family to enjoy meals and play games.
- The Ramayana is an important story to Hindus because it teaches good values and shows the difference between right and wrong. It teaches lessons about being honest and kind; loving and respecting your family; doing your duty, even when it is hard.

Samsara
The continual process of death and rebirth



The Caste System
A system that separated Indian society



KS3 Chemical reactions

- The substances you start with in a chemical reaction are called **reactants**.
- During a chemical **reaction**, the reactant atoms have their chemical bonds broken, then re-arranged into new substances called **products**
- A **word equation** is a way of representing these changes

copper + oxygen → copper oxide

reactants products

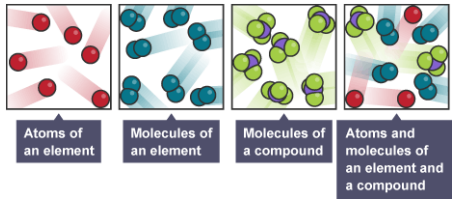
- Any reactants are to the left of the arrow and any products are to the right of the arrow.
- The arrow shows that the reaction is not reversible
- The number of atoms at the start of a chemical reaction is the same as the number of atoms at the end.
- This is called '**conservation of mass**'

- A **balanced symbol equation** uses chemical symbols to represent a reaction.

$$2Cu + O_2 \rightarrow 2CuO$$

- A balanced symbol equation shows:
  - The formula of each substance in the reaction
  - How the atoms are rearranged
  - The relative number of atoms of each substance.

- **Element**: A pure substance made of only one kind of atom.
- **Molecule**: Two or more atoms bonded together.
- **Compound**: A substance made of two or more **different** elements chemically bonded together.



There are 4 signs that a chemical reaction is occurring:

1. A gas is released (fizzing or bubbling)
2. The temperature of the reaction changes
3. The substances change colour
4. A solid appears from a solution (precipitate)

Changes of physical state are not chemical reactions, but they are reversible this is called a **physical change**. This is because no new substances are made.

Keywords

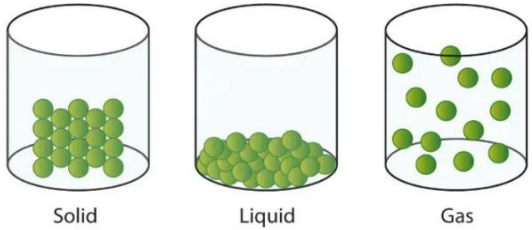
- Atom
- Chemical bond
- Chemical change
- Combustion
- Compound
- Conserved
- Decomposition
- Element
- Molecule
- Oxidation
- Physical change
- Product
- Reactant
- Reaction
- Reduction

Types of reaction

- A **decomposition** reaction is when a substance breaks down into simpler substances. Most decomposition reactions need extra heat to be applied to the reactants to occur – this is called thermal decomposition.
- **Combustion** is a type of reaction where oxygen from the air is reacted with a **fuel**.
  - The Carbon and Hydrogen atoms in the fuel are both **oxidised** to form Carbon dioxide and Water molecules.
  - Burning fossil fuels causes the release of extra Carbon dioxide into the atmosphere. This contributes to global warming and climate change

KS3 Particles

States of Matter



Solids
fixed shape
fixed volume
cannot be poured
cannot be compressed

Liquids
fixed volume
shape can change depending on container
can be poured
cannot be compressed

Gases
No fixed volume or shape
Takes the shape of the container
fills the entire container
can be poured
can be compressed

Particles

Particles are atoms or molecules that make up substances.

Each state of matter has a different arrangements and speed of particle motion.

Solids are closely packed (touching) in ordered pattern with the particles vibrating around a fixed point.

Liquids are in random motion but are in contact (touching).

Gases are in random motion and speeds and are widely spaced apart.

Density

Density of a substance is the amount of mass per unit volume.

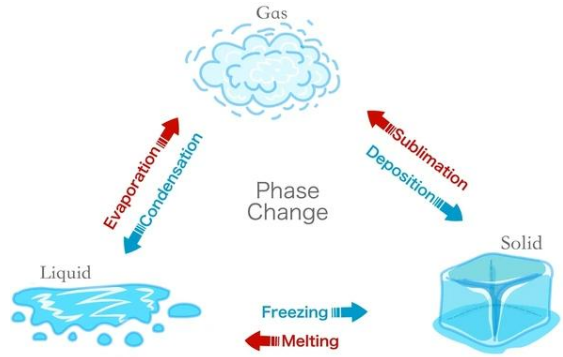
Density = mass ÷ volume

Liquids and gases are called fluids because their particles are in motion (free to move).
Evaporation happens only at the surface of the liquid at any temperature, boiling happens throughout the substance and at boiling point.

Physical Changes

A physical change is a change in state.
Mass is conserved during both a chemical and physical change.

A substance is solid below melting point, a liquid between melting and boiling point, and a gas above boiling point.



Keywords

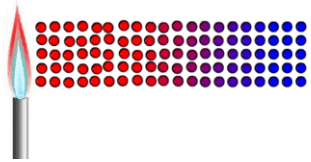
- Solid
- Liquid
- Gas
- Compressed
- Fluid
- Viscosity
- Particle
- Density
- Evaporate
- Freeze
- Melt
- Condense
- Sublime
- Conduction
- Convection
- Radiation
- Insulator
- Diffusion

KS3 Particles

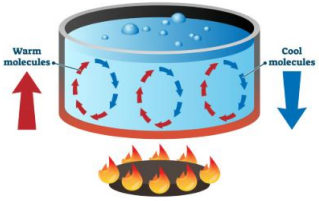
Thermal energy transfers

Thermal energy transfers from hotter to cooler environments. The greater the temperature difference, the faster the transfer.

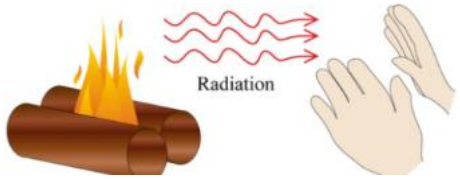
Thermal energy transfers in solids by the process of **conduction.**



Thermal energy transfers in fluids by **convection**.



Thermal energy also transfers without the use of particles by **radiation** (using waves).



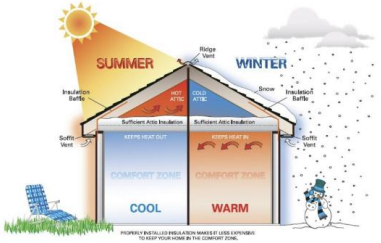
Insulation

Insulation – a substance that is used to prevent unwanted thermal transfers

Animals use insulation to help prevent unwanted thermal transfers.

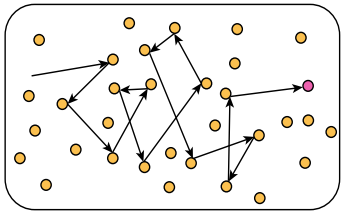
House walls are built with double layer of bricks with a cavity between to prevent conduction.

Loft insulations is fibre glass that contains air pockets, preventing both conduction and convection.



Brownian motion - It is the random motion of particles in fluids brought about by collisions between particles.

Smells move throughout a room by the random motion of particles – this is called diffusion. Diffusion is the motion of particles from a high concentration to a low concentration.



KS3 Cellular Respiration

Respiration is a series of chemical reactions, in cells, that breaks down glucose to provide energy and form new molecules. There are two types:

•**Aerobic respiration**: breaks down glucose with oxygen to release energy and producing carbon dioxide and water. It occurs in the mitochondria. The word equation for this reaction is:

glucose + oxygen → carbon dioxide + water

•**Anaerobic respiration** in animals breaks down glucose without oxygen to release energy, producing lactic acid. It occurs in the cytoplasm. The word equation for this reaction is:

glucose → lactic acid

•Anaerobic respiration in plants and microorganisms (known as **fermentation**): breaks down glucose without oxygen to release energy, producing ethanol and carbon dioxide. Yeast and other microorganisms expire anaerobically (fermentation). The word equation for this reaction is:

glucose → ethanol + carbon dioxide

- **Aerobic means with oxygen, anaerobic is without oxygen.**
- Most living things use aerobic respiration but switch to anaerobic respiration, which provides less energy, when oxygen is unavailable.
- Aerobic occurs in the **mitochondria** of the cell, anaerobic occurs in the **cytoplasm** of the cell.
- In animals, the glucose in respiration comes from the food we eat (glucose has a store of chemical energy).
- In animals, the oxygen in aerobic respiration comes from the atmosphere around us that we breathe in.
- Substances that aren't needed in the body, such as the carbon dioxide are breathed out.
- The **energy** released by respiration is used for all living processes, such as movement, respiration, sensitivity, growth, reproduction, excretion and nutrition.
- Plants produce their own glucose from photosynthesis that they then use for respiration. Hence Producers
- All food chains start with plants (producers) and therefore we rely on them for us to be able to carry out essential life processes.
- Ethanol and carbon dioxide produced in anaerobic respiration in plants and microorganism (fermentation) is used for brewing and baking.

Keywords

- RespirationAerobic respiration
- Anaerobic respiration
- Mitochondria
- Cytoplasm
- Energy
- Molecules
- Glucose
- Oxygen
- Atmosphere
- Fermentation
- Microorganism
- Asthma
- Smoking
- Nicotine
- Tobacco
- Gas exchange
- Drug
- Recreational
- Stimulant
- Depressant

KS3 Cellular Respiration

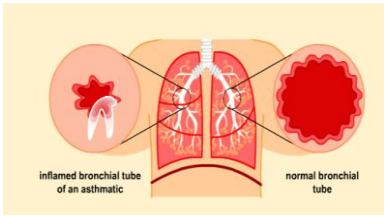
Smoking

Cigarette smoke contains over 4,000 chemicals, including approximately 69 known cancer-causing chemicals as well as over 400 other poisons**.**

- Smoking is very harmful to health and causes or can lead to many types of cancer including – lung, mouth, throat, voice box, bladder, bowel, cervix, kidney, liver, stomach, leukaemia, heart disease, blood pressure problems, stroke, fertility problems, serious breathing conditions and weak bones.
- The harmful substances in cigarette smoke include tar, smoke, nicotine and carbon monoxide.

- **Tar** and **smoke** causes cancer of the lungs, mouth and throat. They coat the inside of the lungs, including the alveoli, causing coughing. They damage the alveoli, making it more difficult for gas exchange to happen, which negatively impacts respiration as there is less oxygen available.
- **Nicotine** is addictive it causes a smoker to want more cigarettes. It increases the heart rate and blood pressure. It makes blood vessels narrower than normal which can lead to heart disease.
- **Carbon monoxide** takes the place of oxygen in red blood cells. This reduces the amount of oxygen that the blood can carry, again, negatively impacts respiration.
- It is illegal to smoke inside public buildings, in the workplace, on public transport such as buses, trains and planes, and in a car while carrying somebody aged 18 or under.
- An electronic, or E-cigarette is a battery-operated device that emits a vapour to inhale, which usually contains nicotine. The aim is to provide the sensation of inhaling tobacco smoke, without the smoke. When the user inhales, a small amount of liquid is heated until it becomes a vapour. People who use E-cigarettes are therefore not smoking but "Vaping".

Asthma is a common non-infectious disease that can cause breathing difficulties. During an asthma attack, the breathing (bronchial) tubes narrow.



Symptoms of **asthma** include wheezing and shortness of breath and can be treated using medication taken using an inhaler.
Risk factors for asthma include air pollution, smoking, low birth weight, having an allergy, and family history.

Drugs can be both legal and illegal.

- Medicines are drugs that people take when they are ill.
- People consume other drugs recreationally (for fun), including caffeine, nicotine and alcohol.
- Recreational drugs can be classified as depressants or stimulants.

Drugs can be categorized as depressants or stimulants.
Depressants slow down thinking and reaction times. Stimulants make you feel more alert and can give you quicker thinking and reaction times.

- **Alcohol** is a legal depressant, but long-term alcohol use can damage the brain and liver.
- **Caffeine** is a legal stimulant present in some foods and drinks.
- **Cocaine** and **ecstasy** are examples of illegal stimulants used as recreational drugs.

Substance abuse can cause physical and mental health issues.

KS3 Electromagnetism: Electricity

Charges

A charged object is either positive or negative.

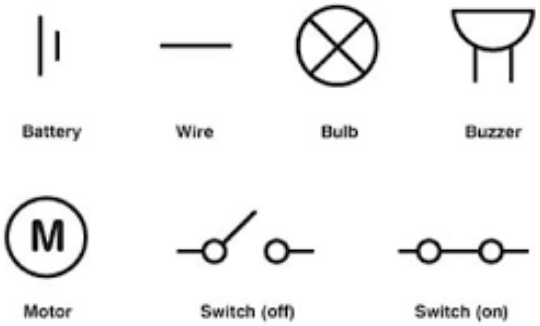
Opposite charges will **attract**.

The same charges will **repel**.

Static electricity is an imbalance between negative **electrons** and positive **protons** where the charge cannot move

Earthing an object will mean the **electrons** can transfer to the ground by the path of least resistance.

Circuit Symbols



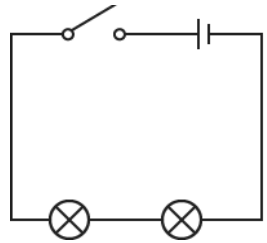
Electric Fields

An **electric field** is a region surrounding a charged object where other charged objects can experience a force.

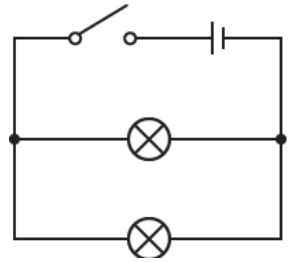
When charged objects enter the electric field, they experience a force which can cause attraction or repulsion

Series and Parallel

Series circuit - A circuit where the current has only one route to flow.



Parallel circuit - A circuit with different 'branches' the current can flow through.



Keywords

- Static
- Electron
- Repulsion
- Attraction
- Non-contact force
- Electric field
- Current
- Ammeter
- Potential difference
- Voltmeter
- Series circuit
- Parallel circuit
- Resistance
- Conductor
- Insulator

KS3 Electromagnetism: Electricity

Current

Current is a flow of negative charge in a complete circuit. An ammeter 

is a device that is used to measure current. An ammeter measures current in Amperes (or Amps).

The ammeter is placed in series.

Current is constant throughout a series circuit.

Current across branches adds up to the current before and after the branches.

Potential Difference

Potential difference can also be called voltage.

Potential difference is the difference in the amount of energy that negative charges have between two points in a circuit.

A voltmeter 

is a device that measures potential difference.

A voltmeter measures potential difference in Volts.

The voltmeter is placed in parallel to the two points it is measuring.

Resistance

Resistance is the opposition to the flow of current in a closed circuit.

Current will always flow the path of least resistance.

Resistance is measured in Ohms (Ω) and is produced by any device in the path of a current. For example, a lamp produces resistance.

The higher the resistance, the lower the current.

Resistance is a ratio between potential difference and current that can be represented by the formula:

$$Resistance = \frac{Potential\ Difference}{Current}$$

Keywords

- Static
- Electron
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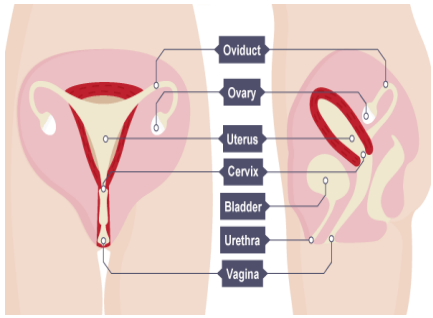
Resistance in objects

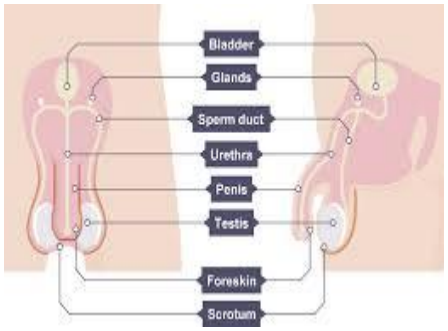
Electrical conductors are materials that allow electrical current to flow through easily. Metals are good electrical conductors. Electrical insulators are materials that do not allow electrical current to flow through easily.

KS3 Reproduction

Keywords

- Reproduction
- Ovary
- Oviduct
- Uterus
- Vagina
- Cervix
- Testes
- Sperm duct
- Urethra
- Penis
- Fertilisation
- Fuse
- Foetus



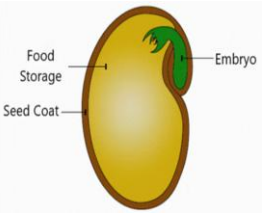


The ovum travels from the ovary, through the oviduct, uterus, cervix & out of the vagina.
Sperm travels from the testes, through the sperm ducts, urethra & out of the penis.

When pregnant, to keep the foetus healthy, Mum needs to:
Eat a healthy, balanced diet.
She will need to eat more protein and some substances like iron & calcium.
If she smokes, the baby can be born early and smaller.
If she drinks alcohol, it can affect the foetus' brain.
She needs to be vaccinated to prevent the foetus being affected by diseases like measles.

Fertilisation occurs when 1 sperm fuses with (not meets) an ovum.
The sperm travels from the vagina, through the cervix, the uterus, to the oviduct where
it fuses with
the ovum.

A typical seed has three basic parts:
An embryo
A supply of nutrients
A seed coat.



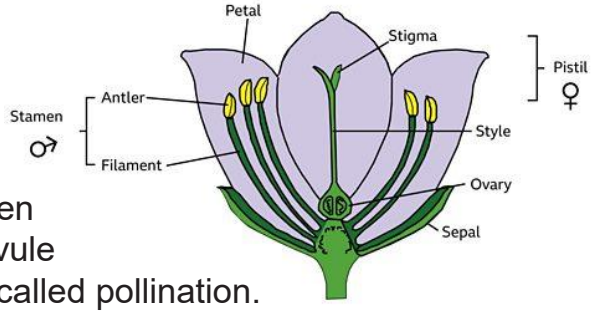
KS3 Reproduction

Puberty can begin between ages 8-14, typically lasts 4 years.
The body goes through some changes, including pubic hair growth, emotional changes, growing taller.
Girls hips widen, breasts grow, periods start.
Boys testes start making sperm, shoulders broaden, penis grows.

The placenta is an organ that grows into the wall of the uterus and is joined to the foetus by the umbilical cord.
The placenta forms from a group of cells
from the zygote.

Sperm cells are the male gametes; they have lots of mitochondria and a flagellum.
The ovum is the female gamete; they are large cells filled with mitochondria and an energy reserve.

Reproduction in plants.
Pistil: female.
Stamen: male.



Plant sexual reproduction involves the fusion of the pollen (male sex gamete) and the ovule (female sex gamete). This is called pollination.
Plant asexual reproduction does not require pollination, for example tubers on potatoes (buds which can grow into new plants).