YEAR 9 – REASONING WITH NUMBER...

Maths & Money

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Solve problems with bills and bank statements
- Calculate simple interest
- Calculate compound interest
- Calculate wages and taxes
- Solve problems with exchange rates
- Solve unit pricing problems

Keywords

Credit: money being placed into a bank account
Debit: money that leaves a bank account
Balance: the amount of money in a bank account
Expense: a cost/ outgoing
Deposit: an initial payment (often a way of securing an item you will later pay for)
Multiplier: a number you are multiplying by. (Multiplier more than 1 = increasing, less than 1 = decreasing)
Per Annum: each year
Currency: the type of money a country uses.
Unitary: one – the cost of one.

Bills and Bank Statements

Bills – tell you the amount items cost and can show how much money you need to pay.

Some can include a total

Look for different units (Is it in pence or pounds)

Menu	Price
Milk	89p
Tea	£1.50

Bank Statements

Bank statement can have negative balances if the money spent is higher than the money coming into the account

Date	Description	Credit	Debit	Balance
19th Sept	Salary	£1500		£1500
19th Sept	Mortgage		£600	£900
25th Sept	Bday Money	£15		£915

Simple Interest

For each year of investment the interest remains the same

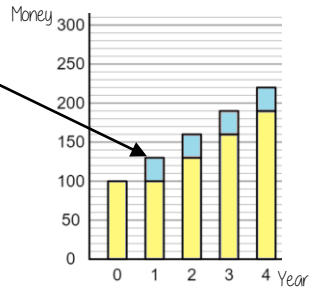
$$\frac{\text{Principal amount} \times \text{Interest Rate} \times \text{Years}}{100}$$

Principal amount is the amount invested in the account

e.g Invest £100 at 30% simple interest for 4 years

$\frac{100 \times 30 \times 4}{100} = £120$

This account earned **£120** interest
At the end of year 4 they have **£220**



Compound Interest

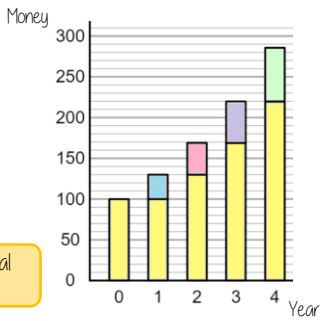
Interest is added to the current value of investment at the end of each year so the next year's interest is greater.

$$\text{Principal amount} \times \text{Multiplier}^{\text{Years}}$$

e.g Invest £100 at 30% compound interest for 4 years

$100 \times 1.3^4 = £285.61$

This account has **£285.61** in total at the end of the 4 years.



Value Added Tax (VAT)

VAT is payable to the government by a business. In the UK VAT is 20% and added to items that are bought.

Essential items such as food do not include VAT.

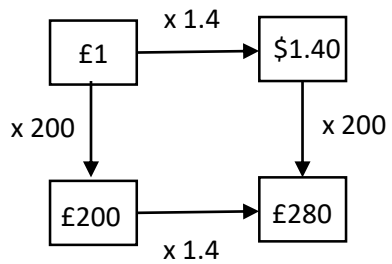
Wages and Taxes

Salaries fall into tax brackets – which means they pay this much each month from their salary.

Taxable Income	Tax Rate
£12 501 to £50 000	20%
£50 001 to £150 000	40%
over £150 000	45%

Over time:
Time and a half – means 1.5 times their hourly rate
Double – 2 times their hourly rate

Exchange Rates



When making estimates it is also useful to use estimates to check if our solution is reasonable.

Use inverse operations to reverse the exchange process

Common Currencies

United Kingdom	£	Pounds
United States of America	$	Dollars
Europe	€	Euros

Unit Pricing

4 Oranges £1	5 cupcakes £1.20

$4 = £1.00$ ÷ 2 → $2 = £0.50$ ÷ 2 → $1 = £0.25$

$5 = £1.20$ ÷ 5 → $1 = £0.20$

Cost per Unit

To calculate unit per cost you divide by the cost.

Cupcakes are the best value as one item has the cheapest value

There is a directly proportional relationship between the cost and number of units.

YEAR 9 – REASONING WITH GEOMETRY...

Deduction

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Identify angles in parallel lines
- Solve angle problems
- Make conjectures with angles
- Make conjectures with shapes

Keywords

Parallel: two straight lines that never meet with the same gradient.
Perpendicular: two straight lines that meet at 90°
Transversal: a line that crosses at least two other lines.
Sum: the result of adding two or more numbers.
Conjecture: a statement that might be true but is not proven.
Equation: a statement that says two things are equal
Polygon: a 2D shape made from straight edges.
Counterexample: an example that disproves a statement

Alternate angles

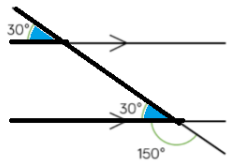
R

Because alternate angles are equal the highlighted angles are the same size

Corresponding angles

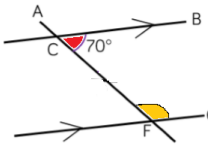
R

Because corresponding angles are equal the highlighted angles are the same size



Co-interior angles

R



Because co-interior angles have a sum of 180° the highlighted angle is 110°

As angles on a line add up to 180° co-interior angles can also be calculated from applying alternate/ corresponding rules first

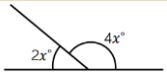
Solving angle problems

Angles on a straight Line
180°

Vertically opposite angles
Equal

Angles around a point
360 °

Link angle facts to algebra



Form an equation

$$2x + 4x = 180°$$

State the reason

The sum of angles on a straight line is 180 °

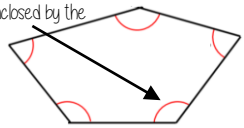
Solve

$$2x + 4x = 180°$$
$$6x = 180°$$
$$x = 30°$$

Triangles
Sum of angles is 180 °

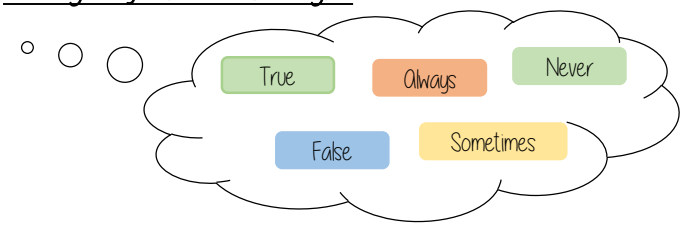
Isosceles have the same base angles

Interior Angles
The angles enclosed by the polygon



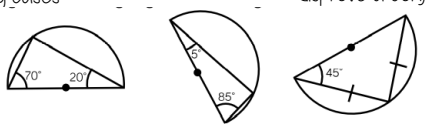
(number of sides – 2) x 180

Making conjectures with angles



Proving a conjecture
A pattern is noticed for many cases

Disproving a conjecture
Only one counterexample is needed to disprove a conjecture



Apply the angle rules

The sum of angles in a triangle is 180°

Test the theory

$$180 - 70 - 20 = 90$$
$$180 - 85 - 5 = 90$$
$$180 - 45 - 45 = 90$$

Make conjecture

The angle that meets the circumference in a semi circle is 90°

Making conjectures with shapes

Keywords and facts to recall with shape

Area: the amount of space inside a shape
Perimeter: the length around a shape
Regular Polygons: All sides and angles are equal

Quadrilateral Facts

Square
All sides equal size
All angles 90°
Opposite sides are parallel

Parallelogram
Opposite sides are parallel
Opposite angles are equal
Co-interior angles

Rectangle
All angles 90°
Opposite sides are parallel

Rhombus
All sides equal size
Opposite angles are equal

Kite
No parallel lines
Equal lengths on top sides
Equal lengths on bottom sides
One pair of equal angles

Year 9 Science Summer Term – Sound Waves

Key Vocabulary:

1	Perpendicular	at an angle of 90° to a given line, plane, or surface or to the ground.
2	Frequency	The number of waves that pass a point each second. The unit is Hertz (Hz)
3	Period	The length of time it takes one wave to pass a given point. The unit is seconds (s)
4	Wavelength	the distance from one point on one wave to the identical point on the next wave. The unit is metres (m)
5	Amplitude	the maximum distance of a point on the wave from its rest position
6	Ultrasound	Ultrasound is produced by high frequency vibrations beyond the range of human hearing. The frequency of ultrasound is therefore greater than 20,000 hertz.
7	Seismic	Shock waves travelling through the Earth, usually caused by an earthquake. There are two types of seismic waves: P-waves, which are longitudinal waves S-waves, which are transverse waves

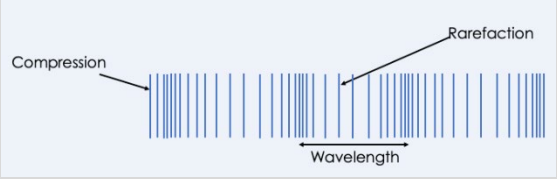
Properties of waves

8

Waves transfer energy
There are two types of wave;
Longitudinal:
And Transverse:

9

Longitudinal waves have oscillations parallel to the direction of energy transfer. Longitudinal waves show areas of compression and rarefaction. E..g. Sound Waves



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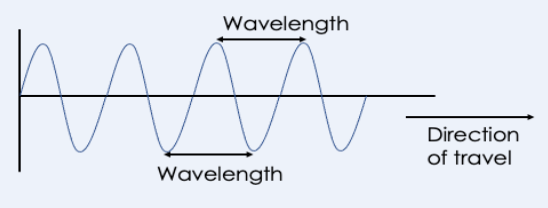
Transverse waves have oscillations perpendicular to the direction of energy transfer
A light wave is an example of a transverse wave



11

The velocity of a wave is the speed in the direction the wave is travelling
The equation that links velocity of a wave, displacement of a wave and time is;
Velocity = displacement/time
The equation that links velocity of a wave, frequency and wavelength is:
Velocity = frequency x wavelength

12

Waves can be reflected or refracted

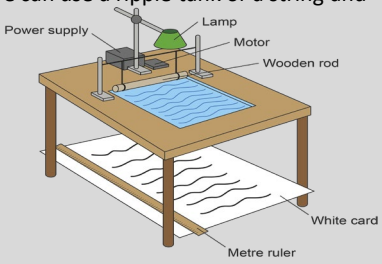
Investigating reflection and refraction

13

The method for investigating reflection and refraction is;
•Use the ruler to draw a straight line near the middle of the A3 paper.
•Use the protractor to draw the normal at right angles to the first line
•Place the first transparent block against the ruler line and draw around it.
•Place the slit (and lens if required) into the ray box and switch on the power.
•Direct the ray of light at an angle at the point where the normal line meets the block.
•You should observe incoming and outgoing rays. Mark these with crosses.
•Switch off the ray box and join up the crosses to make three straight lines. Then label these.
•Measure the angles of incidence, reflection, and refraction with the protractor and record these.

14

To investigate waves we can use a ripple tank or a string and frequency generator.



15

Waves can be absorbed, reflected or transmitted at the boundary between materials

16

Ultrasound waves are partially reflected at the boundary between two materials. The time taken to reach a detector can determine how far away an object is

17

Ultrasound can be used for seeing unborn babies, finding cracks in pipes and finding how far away underwater objects are.

Year 9 Science Summer Term – Using Resources

Key Vocabulary:

1	Reactivity series	is a list of metals in order from most reactive at the top to least reactive at the bottom
2	Composite	is made of two or more materials with different properties.
3	Ores	are rocks or minerals which contain enough metal that can be extracted economically
4	Renewable	Resources that can be replenished and will not run out e.g. wood
5	Potable water	Water that is safe to drink
6	Desalination	means to remove salt. Desalination can be done by distillation or reverse osmosis. These processes require large amounts of energy.
7	Finite	Resources that are being used up more quickly than they are being made e.g., fossil fuels and uranium.

8

- Some metals are more reactive than others
- Some metals tarnish because they react with oxygen in the air

9

- When a metal reacts with an acid, a salt and hydrogen gas are made
- Bubbles observed in the solution indicate that a gas is being made in the reaction
- By observing the reactions of metals and acids, it is possible to deduce the order of reactivity of the metals
- The reactivity series can be used to make predictions about the reactions of metals, such as whether a reaction will take place and how vigorous that reaction will be

10

- Sewage treatment includes screening and grit removal, sedimentation to produce sewage sludge and effluent, anaerobic digestion of sewage sludge and aerobic biological treatment of effluent.

11

- Most potable water is produced by choosing an appropriate source of fresh water, passing the water through a metal grid and filter beds, and sterilising with chlorine, ozone or ultraviolet light.
- If supplies of fresh water are limited, desalination of salty water or sea water may be required.

12

- The Earth's resources can be divided into two groups: finite and renewable.
- Finite resources from the Earth, oceans and atmosphere are processed to provide energy and materials.

13

- A composite is made of two or more materials with different properties.
- When these materials are combined, they produce a material that has a combination of these properties.
- Most composites are made of two materials:

a. a matrix which surrounds and binds together fibres or fragments of the other material
b. a reinforcement.

14

- Life Cycle Assessments (LCAs) are used to assess the environmental impact of a product.
- The assessment is broken into the following stages: extracting and processing raw materials, manufacturing and packaging, use and maintenance during its lifetime, disposal at the end of its useful life.
- Transport and distribution is assessed at each stage.

15

- Lots of products can be reused or recycled to reduce the energy needed to make new products.
- By reducing, reusing and recycling, people can help the environment by

a. Reducing the – often finite – raw materials that have to be extracted and processed.
b. Reducing the energy needed to turn these raw materials into products.
c. Reducing waste.

16

- Plastic can hang around for thousands of years in the environment because it is non-biodegradable. If it ends up as litter, it can pollute rivers, lakes and oceans and harm the wildlife that inhabit them.
- Once a company has completed a life cycle assessment for a product, they then need to evaluate what their next steps will be from the information provided.

17

Sustainable development is development that meets the needs of current generations without compromising the ability of future generations to meet their own needs.

Adjective:	A word which describes a noun
Adverb:	A word which describes a verb
Analytical Verb:	Language to use in your analysis: the writer *suggests* / indicates / implies / emphasises
Audience:	Who the text is specifically aimed at
Authorial Intent:	The writer's goals or ambitions for how readers will respond and react to the text
Connotations:	The links or associations you have with a word
Context:	Thinking about what the world was like when a text was written, and how that influenced it
Convention:	Typical traits you would find in a specific kind of text
Dialogue:	A scripted conversation between two or more characters
Dramatic Irony:	When a readers/audience knows something that a character in the text does not know themselves
Ethos:	A persuasive device: the use of your character, credibility and experience to persuade someone
Femininity:	Traits associated with being a female.
Great Chain of Being:	A belief system which ranks people in relation to their spirituality or godliness
Inference:	What you can work out from the text – reading between the lines
Juxtaposition:	Opposing or contrasting ideas nearby each other in a text
Logos:	A persuasive device: the use of logic or facts to persuade someone
Masculinity:	Traits associated with being 'manly'
Metaphor:	Figurative language: making a comparison saying something *is* something else (e.g. the moon is a ship in the sky)
Monologue:	A long speech delivered by one character
Noun:	The name of a person, place or thing (concrete noun: something you can see/touch; abstract noun: an idea/feeling)
Oxymoron:	A figure of speech with two seemingly contradictory words used together
Pathos:	A persuasive device: the use of feelings or emotion to persuade someone
Patriarchal Society:	A society which is ruled by men
Prologue:	An introductory section to a play, novel or film
Pronoun:	A word which replaces a noun (e.g. I, she, he, it, they, we, you)
Purpose:	Why the text has been written; links to authorial intent
Simile:	Figurative language: making a comparison by saying something is *like* something else (e.g. the stars are *like* diamonds)
Soliloquy:	A monologue giving audiences insight into a character's private thoughts
Symbolism:	When an object/idea represents something deeper
Theatre:	A place where a play is performed to a live audience
Theme:	A reoccurring idea throughout the text
Tone:	The mood or emotion of the text
Verb:	An action or a doing word

Year 9 Abby Diamond Knowledge Organiser

Longdendale HIGH SCHOOL

Artist Research Page

A study of the artist's work has been included in their exact same style.

Interesting composition and background has been included.

Annotation has been included which demonstrates a personal response to the artist (not just copied from Wikipedia!)

Attempt to use the same material as the artist where possible and apply the medium in a similar way.

Pictures of the artists work has been cut out straight and glued in neatly.

70/30 rule has been applied!
70% of the work on your research page must be your own work, 30% included images of the artist work and any quotations.

Abby Diamond

Abby Diamond is a freelance illustrator and visual artist, living and working in Pittsburgh USA.

She uses ink and watercolour paints, and a variety of traditional mediums to create bright, colourful creatures, and whimsical beasts.

She draws constantly, and while paying close attention to details, she loves to splash around and experiment with her work.

Her main sources of inspiration is the natural world, backyard wildlife, early English illustrators Beatrix Potter and JJ Audubon.

Watercolour Techniques

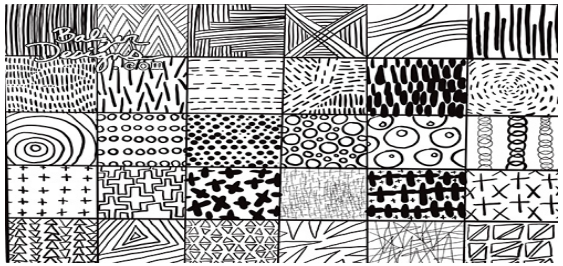
There are several different techniques when using watercolour paints, however, today you will be focusing on three techniques.

Wet-on-wet means that wet paint is applied to wet paper, or added to a wash of fresh wet paint.

Wet-on-dry simply means that you're applying wet paint onto dry paper, or wet paint onto an area of dry paint.

A **Graduated Wash** means that you use the wet-on-dry method and add water afterwards to create a blended gradient.

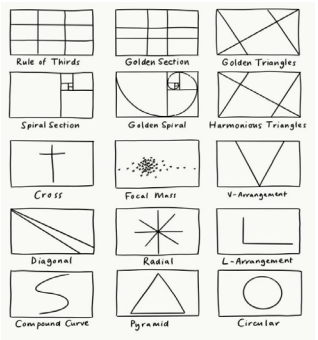
Mark Making Techniques



Mark making describes the different lines, dots, marks, patterns, and textures we create in an artwork.

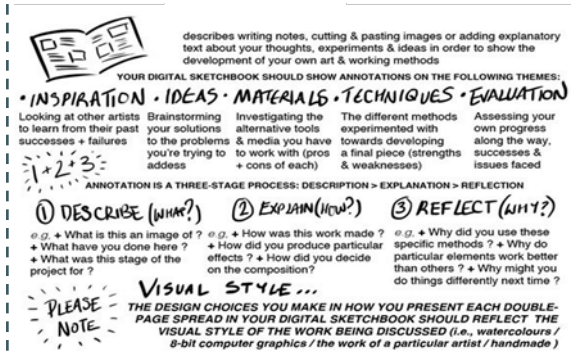
It can be loose and gestural and controlled and neat. It can apply to any material used on any surface: paint on canvas, ink or pencil on paper, a scratched mark on plaster, a digital paint tool on a screen, a tattooed mark on skin…even a sound can be a form of mark making.

Composition



Composition in art is the way in which different elements of an artwork are combined. In general, this refers to the key subjects of the artwork and how they are arranged in relation to each other.

Annotation



Year 9 Food

Food poisoning bacteria

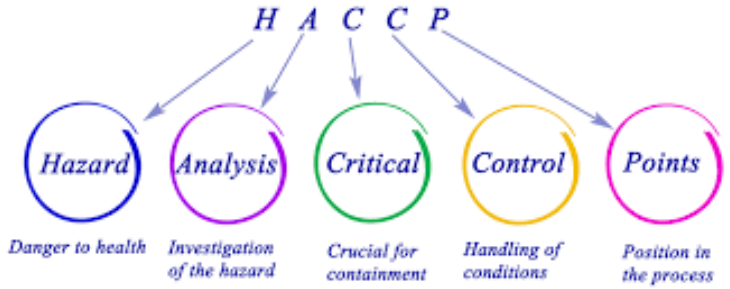
The main causes of food poisoning bacteria are:

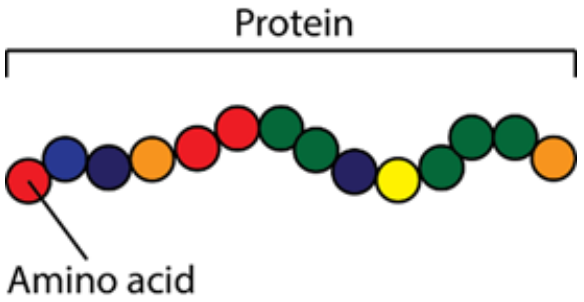
- **Bacillus cereus:** found in reheated rice and other starchy foods.
- **Campylobacter:** found in raw and undercooked poultry and meat and unpasteurised milk.
- **Clostridium perfringens:** found in human and animal intestines and raw poultry and meat.
- **E-coli:** found in raw meat, especially mince.
- **Listeria:** found in polluted water and unwashed fruit and vegetables.
- **Salmonella:** found in raw meat, poultry and eggs.
- **Staphylococcus aureus:** found in human nose and mouth.

HACCP table

Here is an example of a HACCP table – it states some risks to food safety and some control points.

Hazard	Analysis	Critical Control Point
Receipt of food	Food items damaged when delivered / perishable food items are at room temperature / frozen food that is thawed on delivery.	Check that the temperature of high-risk foods are between 0°C and 5°C and frozen are between -18°C and -22°C. Refuse any items that are not up to standard.
Food storage (dried/chilled/frozen)	Food poisoning / cross contamination / named food hazards / stored incorrectly or incorrect temperature / out of date foods.	Keep high-risk foods on correct shelf in fridge. Stock rotation – FIFO. Log temperatures regularly.
Food preparation	Growth of food poisoning in food preparation area / cross contamination of ready to eat and high-risk foods / using out of date food.	Use colour coded chopping boards. Wash hands to prevent cross-contamination. Check dates of food regularly. Mark dates on containers.
Cooking foods	Contamination of physical / microbiological and chemical such as hair, bleach, blood etc. High risk foods may not be cooked properly.	Good personal hygiene and wearing no jewellery. Use a food probe to check core temperature is 75°C. Surface area & equipment cleaned properly.
Serving food	Hot foods not being held at correct temperature / foods being held too long and risk of food poisoning. Physical / cross-contamination from servers.	Keep food hot at 63°C for no more than 2 hours. Make sure staff serve with colour coded tongs or different spoons to handle food. Cold food served at 5°C or below. Food covered when needed.

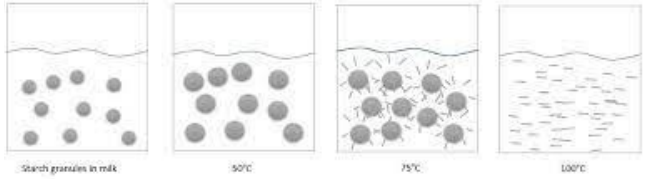




Food and the law

Food can cause ill-health if it is stored, prepared and/or cooked incorrectly or if a person unknowingly eats a food that they are allergic or intolerant to. All hospitality and catering provision need to follow laws that ensure food is safe to eat. They are:

- **Food Labelling Regulations (2006):** A label must show all ingredients including allergens, how to store and prepare the food, where it came from, the weight of the food and a use-by or best-before date.
- **Food Safety (General Food Hygiene Regulations) 1995:** This law makes sure that anyone who handles food - from field to plate – does so in a safe and hygienic way. The **HACCP** system is used throughout the hospitality and catering sector.
- **Food Safety Act 1990:** This law makes sure that the food people it is safe to eat, contains ingredients fit for human consumption and is labelled truthfully.



Temperature control

Delivery	Storage	Preparation	Service
The temperature of high-risk foods must be checked before a delivery is accepted. The food should be refused if the temperatures are above the safe range. Refrigerated foods = **0-5°C** Frozen foods = **-22°C to -18°C**	High-risk foods must be covered and stored at the correct temperature. Temperatures must be checked daily. Refrigerator = **0-5°C** Freezer = **-22°C to -18°C** Unwashed fruit and vegetables must be stored away from other foods.	High risk-foods need to be carefully prepared to avoid cross-contamination. A food probe can be used to make sure that high-risk foods have reached a safe core (inside) temperature, which needs to be held for a minimum of two minutes. Core temperature = **70°C**	Food needs to be kept at the correct temperature during serving to make sure it is safe to eat. Hot food needs to stay hot and cold food needs to stay chilled. Hot holding = **63°C minimum** Cold holding = **0-5°C**

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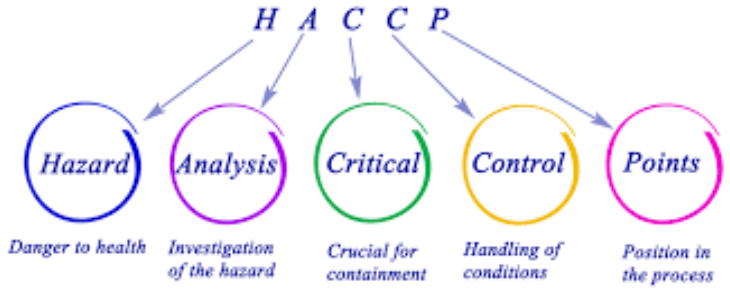
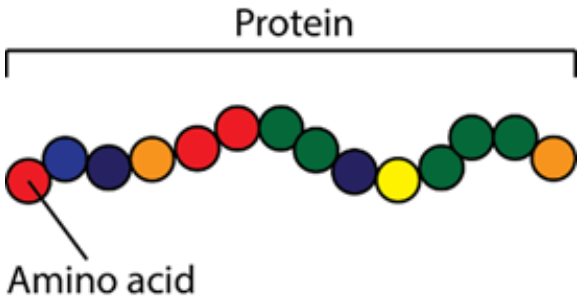
Food preparation	Growth of food poisoning in food preparation area / cross contamination of ready to eat and high-risk foods / using out of date food.	Use colour coded chopping boards. Wash hands to prevent cross-contamination. Check dates of food regularly. Mark dates on containers.
Cooking foods	Contamination of physical / microbiological and chemical such as hair, bleach, blood etc. High risk foods may not be cooked properly.	Good personal hygiene and wearing no jewellery. Use a food probe to check core temperature is 75°C. Surface area & equipment cleaned properly.
Serving food	Hot foods not being held at correct temperature / foods being held too long and risk of food poisoning. Physical / cross-contamination from servers.	Keep food hot at 63°C for no more than 2 hours. Make sure staff serve with colour coded tongs or different spoons to handle food. Cold food served at 5°C or below. Food covered when needed.

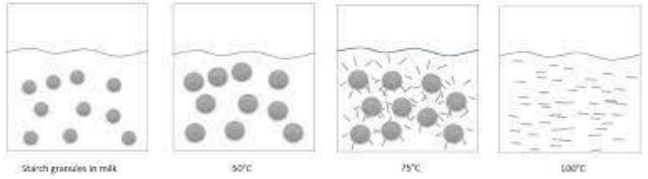




Food and the law

Food can cause ill-health if it is stored, prepared and/or cooked incorrectly or if a person unknowingly eats a food that they are allergic or intolerant to. All hospitality and catering provision need to follow laws that ensure food is safe to eat. They are:

- **Food Labelling Regulations (2006):** A label must show all ingredients including allergens, how to store and prepare the food, where it came from, the weight of the food and a use-by or best-before date.
- **Food Safety (General Food Hygiene Regulations) 1995:** This law makes sure that anyone who handles food - from field to plate – does so in a safe and hygienic way. The **HACCP** system is used throughout the hospitality and catering sector.
- **Food Safety Act 1990:** This law makes sure that the food people it is safe to eat, contains ingredients fit for human consumption and is labelled truthfully.



Temperature control

Delivery	Storage	Preparation	Service
The temperature of high-risk foods must be checked before a delivery is accepted. The food should be refused if the temperatures are above the safe range. Refrigerated foods = **0-5°C** Frozen foods = **-22°C to -18°C**	High-risk foods must be covered and stored at the correct temperature. Temperatures must be checked daily. Refrigerator = **0-5°C** Freezer = **-22°C to -18°C** Unwashed fruit and vegetables must be stored away from other foods.	High risk-foods need to be carefully prepared to avoid cross-contamination. A food probe can be used to make sure that high-risk foods have reached a safe core (inside) temperature, which needs to be held for a minimum of two minutes. Core temperature = **70°C**	Food needs to be kept at the correct temperature during serving to make sure it is safe to eat. Hot food needs to stay hot and cold food needs to stay chilled. Hot holding = **63°C minimum** Cold holding = **0-5°C**

Year 9 Drama HT5 Knowledge Organiser

Summary of topic

Students understand the famous people who have influenced drama.

Aims of the topic

To be introduced to the theatrical practitioners of Brecht, Artaud and Stanislavski.

Theatre Practitioners Y9

Knowledge Organiser

Skills & Definitions

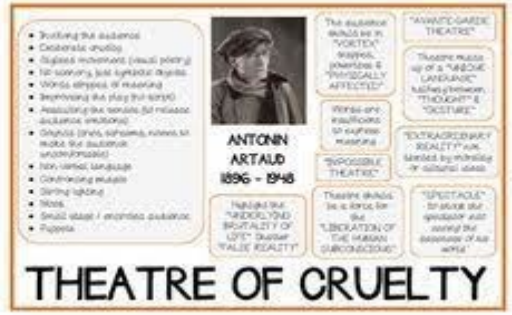
Practitioners – famous people who have influenced drama.

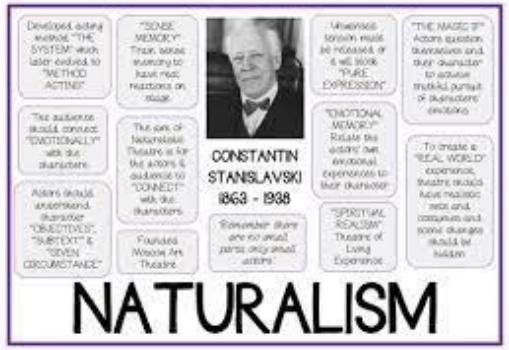
Brecht – Famous for epic political theatre.

Artaud – Famous for making the audience feel uncomfortable 'theatre of cruelty'.

Stanislavski – Famous for naturalism.

DRAMA





Assessment & Performance Tips

The assessment is a group scripted piece using Stanislavki as a practitioner influence.

- Face the audience at all times
- Speak loud and clear so everyone can hear you
- Try not to laugh and stay focused.
- Use a real range of movement skills.
- Add emotion to your performance.
- Make your performance believable.

Key Words

Genre	Practitioner	Style	Artaud	Brechtian	Berkoff	Naturalism	Political Theatre
Theatre of Cruelty	Inspired	Techniques	Alienation	Strobe lighting	Distancing	Narration	Placards
Grotesque	surrealism	The fourth wall	Attack on the audience	Nightmare	Distorted sounds	Realism	Robotic Movement

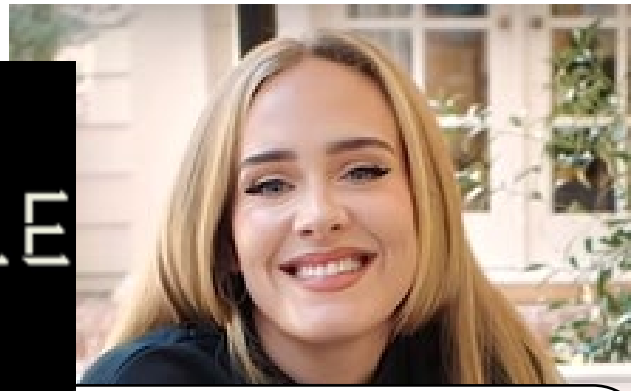
Year 9 MUSIC HT5 Knowledge Organiser

Legends

THE BEATLES

- From Liverpool
- 1962-1970
- Changed music by constantly reinventing themselves

ADELE



- Adele Adkins
- b. 1988
- Albums named after ages when she recorded them e.g.21

- Began as a child star in The Jackson 5
- Huge solo career
- Has the best-selling album of all time with

QUEEN

- Freddie Mercury – vocals
- Brian may – guitar
- Roger Taylor – drum kit
- John Deacon – bass guitar
- Fused rock with opera and other styles

Year 9 Subject Term Knowledge Organiser

Fitness

Knowledge

Develop an understanding of the benefits of fitness testing. And own ability in comparison to national averages.

Skills

Understand the benefits of fitness testing, Multi stage Fitness Test, 12 minute cooper run, press up/sit up tests

Key Words

Health – A state of physical, mental and social well being, not merely being absent from illness

Fitness – Fit for purpose or the ability to meet the demands of your environment

Intensity – how hard you are exerting yourself

Components of Fitness

Agility – Ability to change direction quickly and precisely without losing balance

Co-ordination – The ability of parts of the body to work together to move smoothly and accurately

Strength – Maximum force that can be generated by a muscle or group of muscles

Cardiovascular endurance - Ability of your heart and lungs to efficiently deliver oxygen to working muscles during exercise

Fitness

Knowledge

Develop an understanding of fitness leading and programming

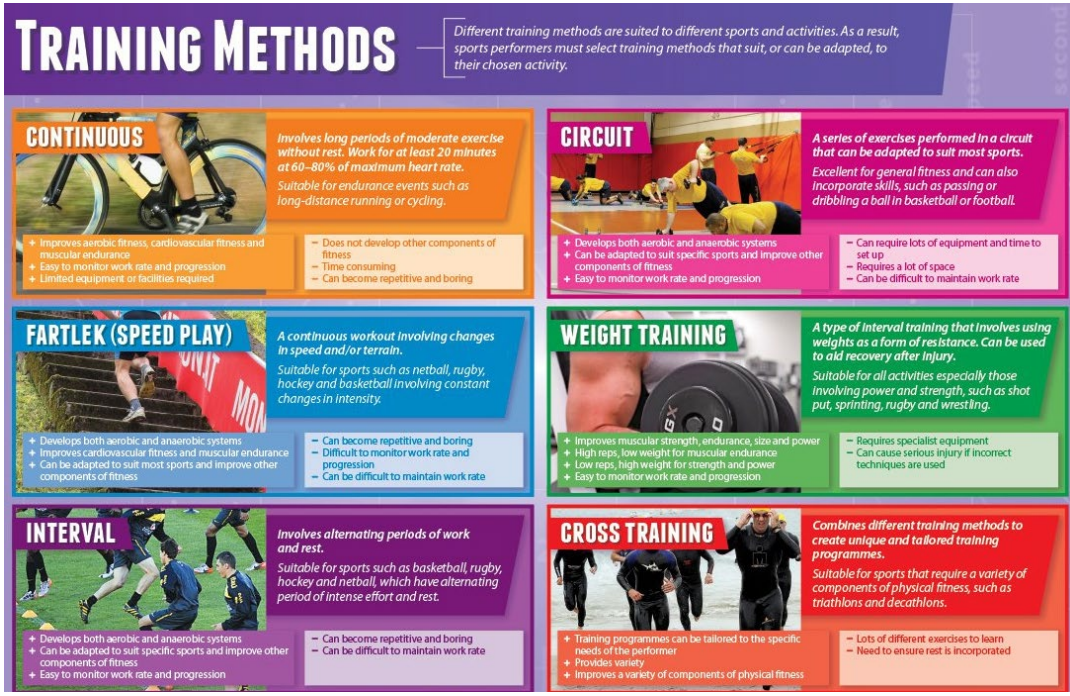
Skills

Understand how to improve fitness levels by using FITT, frequency, intensity, Time and type

Introduce training zones

The different type of training sessions, able to plan a suitable training session, including below and speedwork, HIIT, flexibility, mobility and plyometrics

ZONE	% OF MAX HR	EXERTION LEVEL	FITNESS GOAL
5	90 - 100%	MAX	FOR FIT ATHLETES IN VERY BRIEF DURATIONS, DEVELOP FAST-TWITCH MUSCLE FIBERS TO BOOST SPRINT SPEED
4	80 - 90%	HARD	INCREASE ANAEROBIC THRESHOLD AND MAX CAPACITY FOR SHORTER EFFORTS
3	70 - 80%	MODERATE	IMPROVE AEROBIC FITNESS AND MUSCLE STRENGTH
2	60 - 70%	LIGHT	BUILD BASIC ENDURANCE, FAT BURNING, SUSTAINABLE FOR LONG PERIODS OF EXERCISE
1	50 - 60%	VERY LIGHT	WARM UP, COOL DOWN, AND ACTIVE RECOVERY
0	< 50%	REST	NO MEANINGFUL STRAIN ON THE BODY



Year 9 Subject Term Knowledge Organiser

Football

Knowledge

Develop an understanding of the techniques of passing, throwing, using volleys half volleys where appropriate

Skills

Able to kick/head the ball confidently using the correct techniques and when to use appropriately

Knowing how to do a defensive header and an attacking header

Football Key Skills

Dribbling

Dribbling allows you to move the ball around the field without losing possession. Keep the ball close to your feet at all times, when running with it. Use the inside of your foot to control the ball when moving. Don't look down when running with the ball. Keep your head up.

Passing

Non-kicking foot is closest to the ball.
Kicking foot needs to be at the right angle to the ball. Body over the ball. Eyes focused on the ball and arms are used for balance.

Shooting

Non kicking foot needs to be next to the ball and player needs to keep their body balanced with their head slightly over the top of the ball. Contact the ball either with the side of the foot (placement of ball) top of the foot (to generate power)
Both legs need to be flexed but when striking the ball, kicking foot needs to be fully extended on the follow through. For accuracy, aim between the goalkeeper and the posts.

Heading

The forehead is used to contact the ball. Eye must be focused on the ball. Meet the ball your head by moving your feet or jumping to gain the extra height. Do not wait for the ball to hit your forehead.

Chest

Used when the ball is played in the air, to bring it down on the floor. Player needs to align himself with the ball. Roll their shoulders back to create a bigger surface to control the ball bend your knees to get the ball onto the floor.

Football

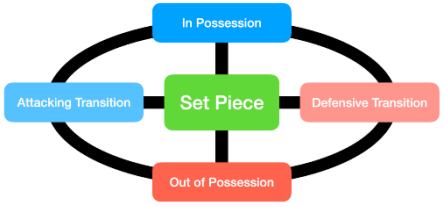
Knowledge

Develop an understanding of the wider game regards tactic and formations

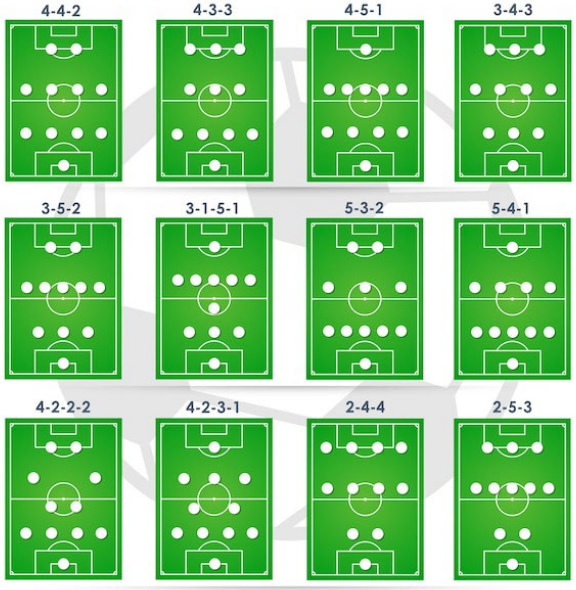
Skills

Lead on set plays/positions from freekicks and corners, develop tactics from different opponents. Know when to use the set play

Able to suggest different formations with reasoning able to play in multiple positions using the off side rule.



Where Is The Set Piece?



Key Words

Decision making, the choices regarding the use of playing methods, the choice of skill, where to move.

Formation. The position of players of the pitch

Set play – a play normally after a stoppage where players have a pre-prepared move to outwit the opponents

Offside. Any part of the attacking player closer to the goal line when the ball is played, with no defenders other than goal keeper is deemed offside

Year 9 PE Knowledge Organiser- Striking and Fielding

Key Vocabulary	
Batting order	The order that the batsmen will play in: the strongest go first.
Body position	How the batsman or fielder coordinates their body to strike or field effectively.
Defensive	Deciding on a tactic or action that prevents the other team from scoring.
Field placement	Where the fielders are positioned to be most effective.
Innings	The period of time when one team are batting.
Long barrier	A fielding technique to stop a low or rolling ball.
Offensive	Deciding on a tactic or action that is designed to give your team the best chance of scoring.
Over	6 balls bowled by the same bowler from one end of the pitch.
Stance	How the batter positions their body to strike the ball.
Stroke	The shot that is chosen by the batsman to hit the ball.
Umpire	The official who is in charge of the game.
Wicket	The set of stumps and bails at each end of the pitch.

Rules of the Game

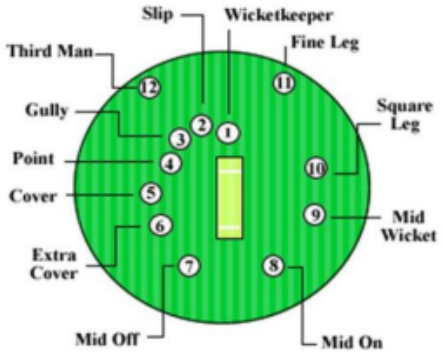
Two teams of 11 players each play an innings of batting and bowling. Each innings will be made up of a set number of overs.

The batting team aim to score as many runs as they can by hitting the ball and running between the two wickets.

The bowling team can get the batsmen out by catching a ball that is hit, or by hitting the stumps with the ball before the batsman arrives.

Once the batting team are all out, or all of their overs are used, the teams swap over.

Fielding positions



Method of scoring:

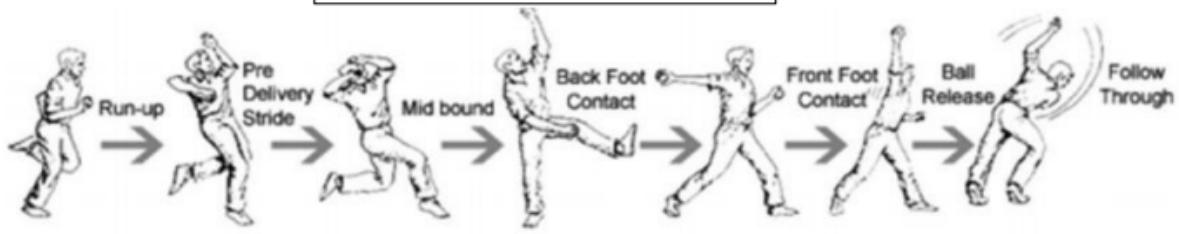
Each time the batsman runs between the stumps (swapping with the batsman at the other end), this counts as one run.

If the ball is hit beyond the boundary without touching the ground, this is work six runs.

If the ball reaches the boundary but hits the ground first, this is worth four runs.

If the bowler bowls the ball too wide, this counts as one run to the batting team.

Bowling Action



Year 9 PE Knowledge Organiser- Softball

Rules

- There are 9 players on each team (fielding and batting) although this can be adapted.
- When batting, a player has a maximum of three strikes. If you don't hit it in the correct area r hit the ball at all you're out.
- Any ball that is hit outside of the first and third base is a foul ball.
- The batter/runner must touch each base as they run around and can stop at any base.
- If the batter/runner makes it all the way around to the home plate they score a home run.
- Batters can be caught out and run out by the fielding team. They can also be tagged.
- The team with the most home runs at the end of all innings is the winning team.

Tactics

Throwing accurately and quickly to the correct base

Hitting the ball between first and third base into space

Accurate pitching

Targeting weaker opponents when batting

Always anticipate the ball in the field

Key Terms:

- Pitcher
- Catcher
- Foul ball
- Strike
- Strike out
- Base
- Home run
- Inning
- Out
- Overthrow
- Obstruction
- Safe
- Ground ball
- Fly ball
- Bunt
- Force out

Key Skills

Throwing

From pitching to fielding this is where most errors are made in Softball. No matter what position you play, being able to throw a softball is one skill you cannot go without. Fast and accurate throwing using an overarm technique is essential for every softball player. Always step into your throw and use your dominant hand.

Batting

To be able to bat successfully you need to get in the ready position with your bat resting close to your back. Your body should be turned sideward on and feet shoulder width apart with a slight bend in the knee. Swing through the ball.

Catching

It is important to be able to read the ball's movement off the bat and to move quickly into the correct position. Once in position concentrate on the coordination of the hands to caress the ball into your hands. Different techniques are used if the ball is above or below the shoulder height.

Fielding

If you are effective at fielding you will be able to successfully field 'ground balls' that roll quickly across the floor as well as 'fly balls' that fly through the air. You will always have your dominant hand free and often wear a glove in your non-dominant hand. Always keep your eyes on the ball and get your body behind the ball.

Baserunning

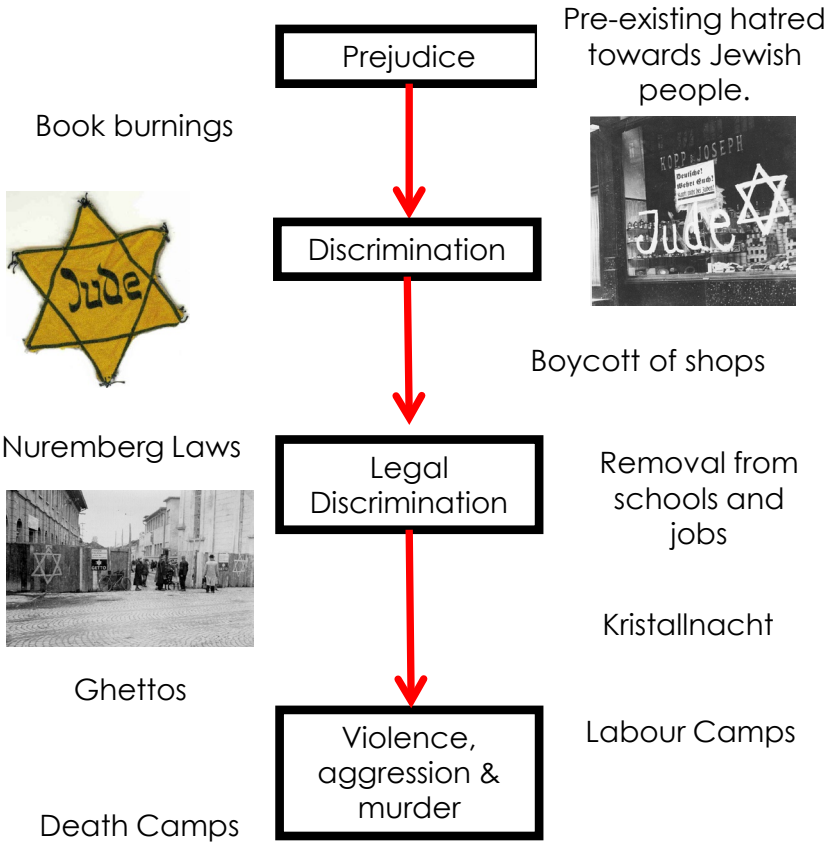
This skill requires being focused on the game and running between bases with speed and accuracy. Often you can steal bases if you pay good attention through inaccurate throwing and catching.

Pitching

At a basic level this will simply involve an underarm accurate feed aiming above the knee and below the shoulder. As the ability of the group improves it could involve an overarm throw at varying speeds and following varying lines.

Year 9 History Term 2 Knowledge Organiser: The Holocaust

The Holocaust was the mass murder of Jews under the German Nazi regime from 1941-1945. More than 6 million Jews along with other persecuted groups were systematically murdered.



ANTISEMITISM	Prejudice against Jews in either words or actions.
SYNAGOGUE	A building in which Jewish people worship and study their religion.
STEREOTYPES	A well-known idea or image of a person or idea that is held by a number of people
PROPAGANDA	A way of controlling the public attitudes.
PERSECUTE	To treat someone unfairly or cruelly over a long period of time because of their race, religion, or political belief.
UBERMENSCHEN	The Nazi's used this word for the Master Race. Meaning racially pure and of high standings. Also means Superhuman.
UNTERMENSCHEN	Nazis used this word. A person considered racially or socially inferior. Also means sub-human.
GHETTO	Walled of part of a city where Jews were forcibly moved too and forced to stay in.
GENOCIDE	To murder an entire race of people.
FINAL SOLUTION	The plan by the Nazis to murder every European Jew during World War Two.
CONCENTRATION CAMP	A place where people are concentrated and imprisoned without trial. Could also be called a labour camp.
DEATH CAMPS or EXTERMINATION CAMPS	The aim was to murder and completely destroy all the people in the camp.
SHOAH	Means 'calamity' in Hebrew. Jewish name for the Holocaust.
LIBERATION	The act or process of freeing a country or a person from the control of somebody else.

TIMELINE OF THE HOLOCAUST

- **Hitler is Chancellor and first camp built** — 1933
- **Nuremberg Laws removes Citizenship of Jews.** — 1935
- **Kristallnacht violence – Night of the Broken Glass** — 1938
- **Lodz Ghetto in Occupied Poland is sealed shut.** — 1940
- **Death camps are built and are used to murder people.** — 1941
- **Death camps liberated by Allies.** — 1945

Year 9 BTEC Dance Subject Term Knowledge Organiser

Component 1- Exploring the Performing Arts Jazz Dance

Students will gain a practical appreciation of practitioners' work in using existing performance material in dance and learn how they may respond to or treat a particular theme or issue, how they use/interpret/modify a pre-existing style, and how they communicate ideas to their audience through stylistic qualities.

Christopher Bruce - choreographer

Christopher Bruce's interest in varied forms of choreography developed early in his career from his own exposure to classical, contemporary and popular dance.

- Bruce's father who introduced him to dance, believing it could provide a useful career and would help strengthen his legs, damaged by polio.
- His early training, at the Benson Stage Academy, Scarborough, included ballet, tap and acrobatic dancing - all elements which have emerged in his choreography.
- At the age of thirteen he attended the Ballet Rambert School and Rambert has provided the most consistent umbrella for his work since.

Overview of key features:

Bruce embraces both a classical and contemporary movement vocabulary. The style draws on both his ballet and Graham technique training and he uses the long extended lines of ballet but with off balance tilts and attitudes. Balletic movements such as arabesques, attitudes and jetes combine with the low centre of gravity, a spiralling torso and use of off-balance from contemporary dance. He makes use of weight and the floor in deep plies and lunges.

Subject Matter

Bruce's work often contains an autobiographical element. Rooster (1991) the lifestyle he remembered from the 1960s. A number of works, particularly those choreographed while his own family was growing up, such as Ghost Dances (1981), reflect his love of children e.g. peasant boy arms outstretched like an aeroplane whilst he pivots in a circle.

- There is an unusual level of political, social and ecological awareness in Bruce's choice of subject. Ghost Dances (1981) and Swansong (1987) are concerned with political oppression.

Christopher Bruce's choreography for Swansong incorporates a variety of dance styles, including contemporary, ballet, jazz, tap and ballroom. The inclusion of 'folk' styles is a typical feature of Bruce's choreography and can be seen particularly in Ghost Dances and Sergeant Early's Dream (1984).

In Swansong balletic movements, such as arabesques, attitudes and jetés combine with the low centre of gravity, spiralling torso and use of off-balance from contemporary dance to create a lyrical feel for the victim's solos.

Counter Balance

Counterbalance: A weight which balances another weight. In dance, it usually refers to one or more dancers combining their weight in stillness or in action to achieve a movement or design which is inter-dependent.

Contact improvisation is a form of improvised dancing that has been developing internationally since 1972. It involves the exploration of one's body in relationship to others by using the fundamentals of sharing weight, touch, and movement awareness.

MFL Knowledge Organiser Summer 1 Yr 9 Le Collège

A Tenses

PRESENT	-ER verbs	-RE verbs	-IR verbs
I	-E	-S	-I
you	-ES	-S	-IS
he/she/it	-E	-	-IT
we	-ONS	-ONS	-ISSONS
you (pl)	-EZ	-EZ	-ISSEZ
they	-ENT	-ENT	-ISSENT

	ALLER (go)	ÊTRE (be)	AVOIR (have)	FAIRE (do)
JE	vais	suis	'ai	fais
TU	vas	es	as	fait
IL/ELLE/ON	va	est	a	fait
NOUS	allons	sommes	avons	faisons
VOUS	allez	êtes	avez	faisez
ILS/ELLES	vont	sont	ont	font

Conditional tense- saying what you would do.

Infinitive verb

ÉTUDIER +

ais
ais
ait
ions
iez
aient

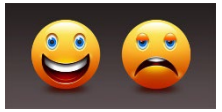
C Opinions

Je déteste

Je déteste tellement

Ça m'énerve

D Pronouns



J'adore

Ça m'intéresse

Ça ne m'intéresse pas

Ça m'ennuie

E Connectives

tout d'abord	first
ensuite	then
Normalement	normally
Quelquefois	sometimes
Le matin	in the morning
L'après-midi	in the afternoon

F Complexity

On (ne) doit (pas)= one must (not)
Je (ne) dois (pas) = I must (not)
Il faut= it's necessary
On (ne) peut (pas)= one can (cannot)
Je (ne) peux (pas) = I can (cannot)
On ne devrait pas= you wouldn't have to
On devrait= you would have to

Je ferais = I would do
J'aurais= I would have
Je pourrais= I could

G Adjectives

préféré(e)	*Favourite*
ennuyeux/euse	*Boring*
difficile	*difficult*
rigolo	*Fun*
facile	*Easy*
important(e)	*important*
intéressant(e)	*Interesting*
pratique	*Practical*
utile	*Useful*

H

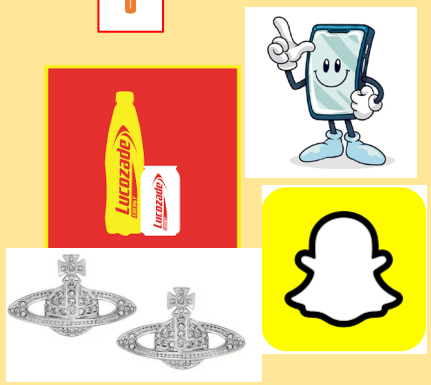
très = very
assez= quite
Un peu= A little bit
trop=*too*
tellement= *really*

Year 9 Le collège TOPIC VOCABULARY TRANSLATED

Le théâtre	drama
Le dessin	art
Le français	French
L'espagnol	Spanish
L'anglais	English

L'EPS	PE
La géogprahie	geography
L'histoire	history
L'informatique	ICT
La musique	music
La technologie	technology
Les sciences	science
Les maths	maths

I



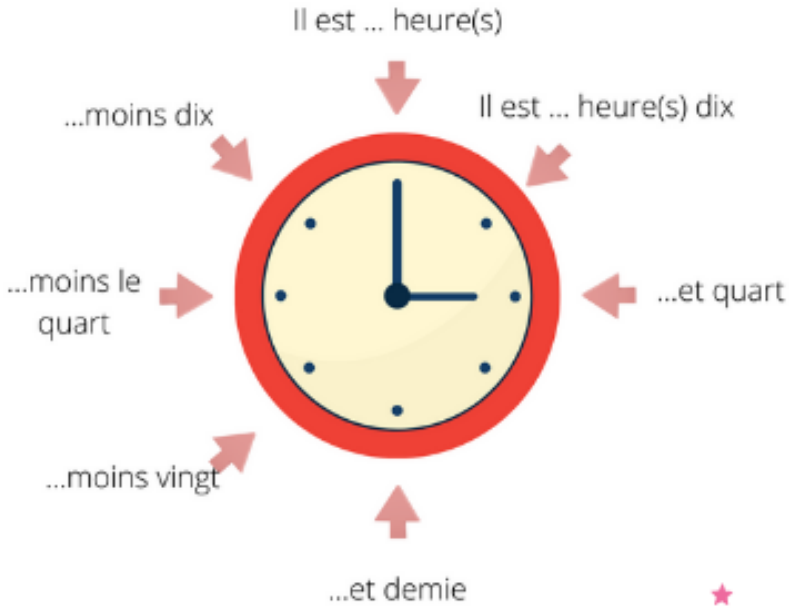
Un jour typique

J'arrive au collège	I arrive at school
Les cours commencent	lessons start
Je fais mes devoirs dans la bibliothèque	I do homework in the library
Je vais au club de…	I go to … club
Je fais des activités periscolaires	I do extra-curricular activites
Je sors du collège	I leave school
Je retourne chez moi	I return home

Mes propres vêtements	own clothes
Mes baskets	trainers
Des hamburgers/ le Poulet frit	burgers/fried chicken
Des boissons énergétiques	energy drinks
Des bijoux	jewellery
Mes amis	my friends
Club de reseaux sociaux	social media club

Faire la queue à la cantine	queue in the canteen
Lever la main avant de parler	put your hand up before speaking
Porter l'uniforme scolaire	wear school uniform
Mâcher du chewing-gum	chew chewing gum
Manger dans les salles de classe	eat in class rooms
Porter du maquillage	wear make-up
Aller aux toilettes pendant les cours	go to toilets during lesson
Utiliser le portable	use your phone

K



Les verbes

J

- Étudier/ j'étudierais
- Porter/ Je porterais
- Manger/ Je mangerais
- Aller/ j'irais
- Utiliser/ j'utiliserais
- Devoir/ je devrais
- Faire/ Je ferais
- Avoir/J'aurai
- Pouvoir/ Je pourrais

Year 9 Subject Term Knowledge Organiser: Computing: Advanced Binary

Binary Vocab	
Binary	Counting using base 2 (0s & 1s) – 0 means off, 1 means on. These control switches that make decisions within the computer.
Denary	Counting using base 10 (0-9) – these are our normal numbers that we use every day.
Bit	The smallest amount of data (stands for **b**inary dig**it**) (0 or 1)
Byte	**8 bits** – commonly used to store data, for example, characters of text.
Convert	Changing from one type of number to another (eg. binary to denary)

Binary Place Values (for 1 byte)

128	64	32	16	8	4	2	1
0	0	0	0	0	0	0	0

Hexadecimal Numbers.
Hexadecimal (or **hex**) is a **base 16** system used to simplify how **binary** is represented. A hex digit can be any of the following 16 digits: **0 1 2 3 4 5 6 7 8 9 A B C D E F**.
Each hex digit reflects a 4-**bit** binary sequence.
This table shows each hex digit with the equivalent values in binary and denary.

Converting from binary to denary

128	64	32	16	8	4	2	1
0	1	0	1	1	0	0	1

1. Write the binary table.
2. Put the 0s and 1s into the table.
3. If a number has a 0 under it, don't add the number on.
4. If a number has a 1 under it, add that number onto the total.

In this example, we have 1s under 64, 16, 8, and 1, so:

64 + 16 + 8 + 1 = **89**

Therefore, 01011001 in binary is 89 in denary!

Converting from denary to binary

1. Write the binary table.
2. Start from the left hand side of the table.
   a. If the number is **larger** than the number in the table, put a 0 under it and move onto the next number
   b. If the number is **smaller** than the number in the table, put a 1 under it and take that number away from your number
3. Repeat step 2 until all of the columns have a 1 or a 0 under them..

Example: 42

In this example, we start from 32 as the other numbers are too large. We put a 1 under 32, leaving 10 remaining. Adding 8 and 2 together makes 10, so this must be our answer:

128	64	32	16	8	4	2	1
0	0	1	0	1	0	1	0

Year 9 Subject Term Knowledge Organiser: Computing: Binary

Adding binary

When two numbers are added together in , we take the first number, add the second number to it and get an answer. For example, **1 + 2 = 3**.

When we add two numbers together the process is different.

There are four rules that need to be followed when adding two binary numbers. These are:

- 0 + 0 = 0
- 1 + 0 = 1
- 1 + 1 = 10 (said one zero and is binary for 2)
- 1 + 1 + 1 = 11 (said one one and is binary for 3)

Example

Binary shifts

numbers are multiplied and divided through a process called shifting.

Multiplication

To multiply a number, a binary shift moves all the digits in the binary number along to the left and fills the gaps after the shift with 0:

- to multiply by two, all digits shift one place to the left
- to multiply by four, all digits shift two places to the left
- to multiply by eight, all digits shift three places to the left
- and so on

Example - 1100 (denary 12) × 2

128	64	32	16	8	4	2	1
				1	1	0	0

Result: shifting one place to the left gives 11000 (24 denary)

128	64	32	16	8	4	2	1
			1	1	0	0	0

Example - 10110 (denary 22) × 4

128	64	32	16	8	4	2	1
			1	0	1	1	0

Result: shifting two places to the left gives 1011000 (denary 88)

128	64	32	16	8	4	2	1
	1	0	1	1	0	0	0

Year 9 Subject Term Knowledge Organiser: Computing: Advanced Binary

Vector Graphics – simple digital images made up of paths and shapes can be easily edited.

Used to create graphics that need a large format.

Vector graphic file sizes are usually small.

Scalable which means you can change their size without losing quality.

Bitmap images (raster graphics) – complex images made up of small individual squares of colour called pixels which can be individually edited.
Used for real photographs.

File sizes are large as information about each pixel is stored. Bitmap graphics lose quality when they are resized.

Comparison	Vector Graphic	Bitmap Graphic
Consist of	Objects	Coloured pixels
File size	Small	Large
Appearance	Simple	Detailed
File format	.svg .wmp	.bmp .jpg .gif
Scalable	Quality same	Quality lost
Use	Logos, icons & illustrations	Real images & photographs

MFL Knowledge Organiser Summer 1 Yr 9 El Colegio

A Tenses

PRESENT	-ar verbs	-er verbs	-ir verbs
I	-o	-o	-o
you	-as	-es	-es
he/she/it	-a	-e	-e
we	-amos	-emos	-imos
you (pl)	-áis	-éis	-ís
they	-an	-en	-en

	ser (to be)	estar (to be)	tener (to have)	ir (to go)
(yo)	soy	estoy	tengo	voy
(tu)	eres	estás	tienes	vas
(él/ella/usted)	es	está	tiene	va
(nosotros/as)	somos	estamos	tenemos	vamos
(vosotros/as)	sois	estáis	tenéis	vais
(ellos/ellas/ustedes)	son	están	tienen	van

B

Conditional tense- saying what you would do.

Infinitive verb

ESTUDIAR +

ía
ías
ía
íamos
íais
ían

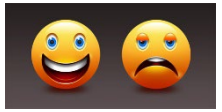
Opinions C

Odio

Detesto

Prefiero

Pronouns D



Me chifla(n)

Me interesa(n)

Me = me
Le = him/her
Nos = us

Me aburre(n)

No me interesa(n)

Connectives E

Primero	first
Luego	then
Normalmente	normally
A veces	sometimes
Por la mañana	in the morning
Por la tarde	in the afternoon

Complexity F

(No) Se debe= one must (not)
(No) Debo= I must (not)

(No) Se puede= One (can/ can't)
(No) puedo= I can/(can't)

No se debería= you wouldn't have to

Se debería= you would have to

Haría = I would do
Tendría= I would have
Se podría= you could

Adjectives G

favorito	*Favourite*
aburrido	*Boring*
difícil	*difficult*
Divertido/a	*Fun*
fácil	*Easy*
Importante	*important*
interesante	*Interesting*
Práctico/a	*Practical*
útil	*Useful*

H

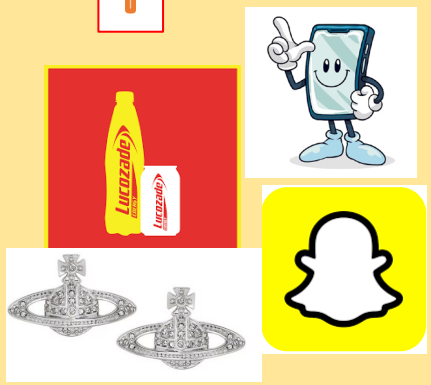
Muy = very
Bastante = quite
Un poco = A little bit
Demasiado=*too*
realmente= *really*

Year 9 El Instituto/ Colegio TOPIC VOCABULARY TRANSLATED

El teatro	drama
El dibujo	art
El espanol	Spanish
El inglés	English
El frances	French

La educación física	P.E
La geografía	Geography
La historia	History
La informática	ICT
La música	Music
La tecnología	Technology
Las ciencias	Science
Las matemáticas	Maths

I



K

Un día típico

Llego al colegio	I arrive at school
Las clases empiezan	lessons start
Hago mis deberes en la biblioteca	I do homework in the library
Voy al club de…	I go to … club
Hago actividades extraescolares	I do extra-curricular activites
Salgo de colegio	I leave school
Vuelvo a casa	I return home

La ropa de calle	own clothes
Mis zapatos de deporte	trainers
Hamburguesas/ el pollo frito	burgers/fried chicken
Bebidas energizantes	energy drinks
Joyas	jewellery
Mis amigos	my friends
Club de las redes sociales	social media club

Hacer cola en la cantina	queue in the canteen
Levantar la mano antes de hablar	put your hand up before speaking
Llevar uniforme	wear uniform
Comer chicle	chew chewing gum
Comer en las aulas	eat in classrooms
Llevar maquillaje	wear make up
Ir al baño durante las clases	go to the toilet in lessons
Usar el móvil	use your phone

Los verbos

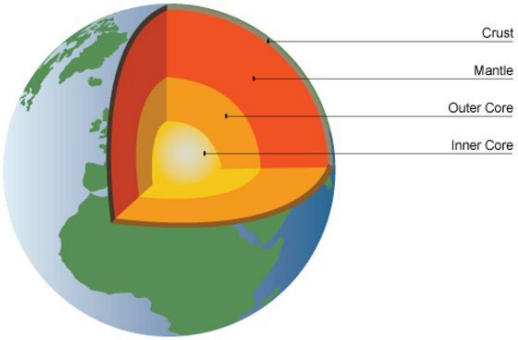
J

- Estudiar/ estudiaría
- Llevar/ llevaría
- Comer/Comería
- Ir/ Iría
- Usar/Usaría
- Deberse/ se debería
- Hacer/haría
- Tener/tendría
- Poderse/ se podría

Tectonics Knowledge Organiser

Structure of the Earth

The Earth has four main layers - the **inner core**, the **outer core**, the **mantle** and the **crust**.

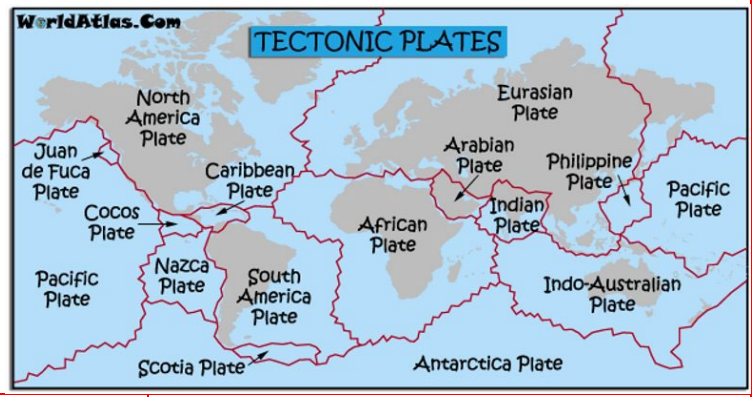


- The **inner core** is extremely hot and is a very dense solid.
- The **outer core** is 2,000 km thick and is a liquid.
- The **mantle** is semi-molten and about 3,000 km thick.
- The **crust** is the rocky outer layer; it is thin compared to the other sections, approximately 5 to 70 km thick.

Plate tectonics

Plate margin: *where two or more plates meet*
Convection currents: *movement within the Earth's mantle caused by the heat of the core*

The Earth's crust is broken up into huge slabs called plates. The plates float on the mantle and are constantly moving by **convection currents**. When these plates move, they bump into, move away from, or rub up against other plates at the **plate margins**. How these plates move in relation to other plates dictates what type of plate margin it is and helps us understand what types of hazards will occur there.

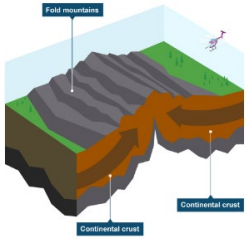


Constructive plate margin

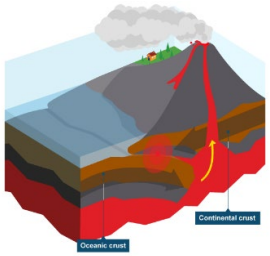
A constructive plate margin occurs when **plates move apart**. Volcanoes are formed as magma wells up to fill the gap, and eventually new crust is formed. Earthquakes occur here also. **E.g.** North American and Eurasian plates forming the mid-Atlantic Ridge.

Destructive plate margin

Destructive plate margins occur when tectonic plates move towards each other and collide. The effect this has depends on what kinds of plates are colliding:



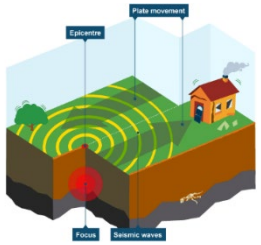
- <u>If two *continental* **plates collide**</u>, they are both buoyant and so cannot sink into the mantle. As a result, compression forces the plates to collide and form fold mountains. **E.g.** The Indian & Eurasian plates formed the Himalayas.



- <u>If an *oceanic* and a *continental* plate **move towards each other**</u>, the denser oceanic plate is subducted and sinks under the continental plate and into the Earth's mantle, where it is recycled. Earthquakes, fold mountains and volcanoes occur. **E.g.** The Nazca & South American Plates.

Conservative plate margin

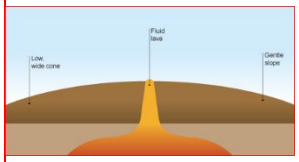
A conservative plate margin occurs where **plates slide past each other** in opposite directions, or in the same direction but at different speeds.
Friction is eventually overcome and the plates slip past in a sudden movement. The shockwaves created produce an earthquake.
E.g. The North American and Pacific plates forming the San Andreas Fault in California.



Tectonics Knowledge Organiser

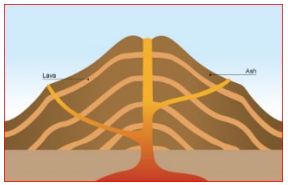
Volcanoes

Volcanoes are vents to the interior of the planet - they allow magma from the mantle to spill out as lava onto the Earth's crust. There are 2 types of volcanoes, shield and composite.

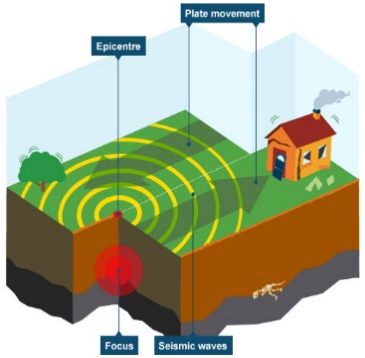


A **shield volcano** has gently sloping sides and runny lava that covers a wide area.

A **composite volcano** is steep sided and cone-shaped, it is made up of layers of ash and lava. The lava is sticky so it does not flow far.



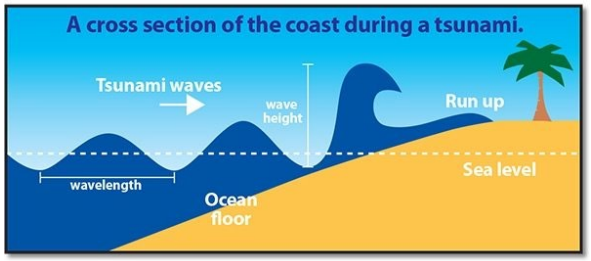
Earthquakes



Earthquakes are the sudden violent shaking of the ground. This happens because the Earth's plates are constantly moving. Sometimes, because of **friction**, plates try to move and become stuck. **Pressure** builds up because the plates are still trying to move. When the pressure is released, it sends out huge amounts of **energy** causing the Earth's surface to shake violently. The point inside the Earth's crust where the earthquake originates from is known as the **focus.** The earthquake's energy is released in **seismic** waves and they spread out from the focus. The **epicentre** is the point on the Earth's surface directly above the focus. The seismic waves are most powerful at the epicentre.

Tsunami

Tsunami is a Japanese word which means '**harbour wave**'. A tsunami is a large sea wave caused by the displacement of a large volume of water. They can be caused by earthquakes triggered by moving sections of the Earth's crust under the ocean. Tsunamis have many social, economic, and environmental impacts depending on where they hit and their size.



Case Study: Iceland

This volcano began erupting lava on 20th March 2010. Impacts of the eruption include:

-Melting of large amounts of ice which led to flooding in Southern Iceland
-Ash from the volcano contaminated their local water supplies
-All over Europe airplanes were grounded until the air cleared
-The ash deposited iron into the North Atlantic triggering a plankton bloom

Case study: Nepal vs Japan Earthquakes

	Nepal 2015 (LIC)	Japan 2011 (HIC)
Magnitude	7.8	9.0
Death Toll	8,632	15,894
Injured	19,009	6,152
Social Impacts	Hundreds of thousands made homeless	500,000 people evacuated
Economic Impacts	Loss of tourism (a major industry in Nepal)	56 bridges and 26 railways destroyed or damaged
Environmental Impacts	Triggered several avalanches	Triggered tsunami & nuclear meltdown
Cost to rebuild	$10/ £7.8 Billion	$309/ £189 Billion

Managing hazards

There are 3 things we can do to lessen the affects of earthquakes, the 3 Ps.

Prediction - Using technology to estimate when and where we think an earthquake is going to happen. **We often know where one will happen but it is difficult to figure out when it will.**

Protection - Putting measures in place to help protect people during an earthquake. The most important and common one is **building special buildings that will not collapse.**

Preparation - This is all about getting ready for when the next one comes. It includes **special drills and practices so people know what to do, and preparing materials in advance**.

What is Suffering?

Key terms

Human suffering	Suffering caused by humans e.g. shooting someone.
Natural suffering	Suffering caused by events which cannot be controlled by humans e.g. earthquakes.
Original sin	All humans are born with evil (the first sin) as a result of the fall of Adam and Eve.
Siddhartha Gautama	The leader of Buddhism (the Buddha).
Job	The Character in the Bible demonstrating why suffering occurs to Christians.

Crucial Commands:

Describe:Say in detail what something or someone is like, and the impact it has. E.g. Describe the the work of Christian Aid

Explain: Say why something or someone is important, and the impact it has. E.g. Explain the impact of the Crusades on society and religion.

Discuss: Write about at least two points of view and explain why these points of view are valuable or not. E.g. "What would the world be like without religion?"

Types of suffering:

Key definitions

Human/Moral – this is suffering caused by humans which can be sub-divided into intentional and ignorance

Intentional – this is suffering which is inflicted deliberately such as causing pain to others

Ignorance – this is suffering which you don't realise you are inflicting on yourself such as remaining friends with someone who is horrible to you

Natural –

This is suffering which occurs naturally in the world without the interference of humans

How do Christians understand suffering?

- There is no physical description of Jesus **anywhere** in the Bible.
- Artists want Jesus to look like themselves and their cultures to feel a kind of connection to Jesus.

What do Buddhists say about suffering?

Muslims believe that Allah (God) is the creator and the focus of our worship. They want to avoid people worshiping anyone apart from Allah, therefore it is easier to avoid images.

- Calligraphy
- Arabesque
- Vedic Squares

How can we overcome suffering?

Flags are printed with symbols and prayers or mantras. Each colour has a significance, they represent the five elements.

- Blue represents sky and space
- White is for the wind and air
- Red symbolises fire
- Green signifies water
- Yellow is for earth

What are some good solutions?

Lantern Floating Festival at the Shinnyo-en Buddhist Centre in Surrey.

- At the ritual nearly 1000 people made a lantern, writing a personal message or prayer of remembrance, appreciation and hopes, on a lantern. The lanterns were then lit – as a symbol of inner light – and floated together across the lake.

What is real happiness?

Creative expression is the ability to use our minds and imaginations to create something that represents ourselves. There are countless ways to express ourselves creatively, whether through music, visual art, crafting, writing, photography, drama, or movement.