

Home Learning Booklet



Knowledge Goals Year 9
Half Term 6

How to self-test

Mind mapping

- Mind mapping is simply a diagram to visually represent or outline information.
- Use information gathered from your knowledge goals booklet to create mind maps, make sure to use colour and images, keep writing to the bare minimum.

How to mind map:



Information for parents on knowledge retrieval



Flash cards

Use your knowledge goals booklet to make flash cards. Write the questions on one side and on the other record the answer. Test yourself or work with a friend to make sure you know all the key information for each topic.

How to mind map:



How should students use the Knowledge Goals booklets?

Your Knowledge Goals booklet provide the essential knowledge that you need to learn in each subject this half term. You are **expected to spend 30 minutes per subject per week 'learning' the content**. You will be assessed during lessons using 'low stake' quizzing. **Your teacher may choose to set you additional homework.**

How can parents support?

- Read through the organiser with your child – if you don't understand the content then ask them to explain it to you – 'teaching' you helps them to reinforce their learning.
- Test them regularly on the spellings of key words until they are perfect. Get them to make a glossary (list) of key words with definitions or a list of formulae.
- Read sections out to them, missing out key words or phrases that they must fill in. Miss out more and more until they are word perfect.

Subject Index

Suggested Homework Schedule (1 hour of independent study per night if you have not been set homework by your class teacher).

To help you get organized, we have planned out your weekly home learning to cover all subjects. You may choose to create your own version:

Week A

Day	Subject 1 (20mins)	Subject 2 (20mins)	Subject 3 (20mins)
Monday	Art	English Language	Physics
Tuesday	Biology	Technology	Maths
Wednesday	Chemistry	Spanish	Music
Thursday	Computer Science	Geography	RS
Friday	Design Technology	History	PE

Week B

Day	Subject 1 (20mins)	Subject 2 (20mins)	Subject 3 (20mins)
Monday	Drama	Personal Development	Teir 2 Vocab
Tuesday	Maths	English	Physics
Wednesday	Chemistry	English	Music
Thursday	Teir 2 Vocab	Maths	Biology
Friday			

Subject	Page No
Teir 2 Vocabulary	4
Art	6
Biology	9
Chemistry	12
Computer Science	14
Drama	16
English Language	18
Food technology	20
French	22
Geography	24
History	26
Materials	28
Maths	33
Music	35
Pdev	37
PE	39
Physics	41
PRE	44
Spanish	46
Freya model templates	48

Literacy Tier 2 Vocabulary

These words are all 'tier 2' words; in other words, they are seen as 'academic vocabulary' and if you know them, can understand them and use them, you will do better in your exams and be able to communicate more precisely and effectively in life.

#	Key word	Definition
1	emphasis	
2	illustrate	
3	register	
4	cite	
5	dimension	
6	perspective	
7	revenue	
8	sufficient	
9	notion	
10	confer	

Literacy Tier 2 Frayer Model

examples

Definition	Characteristics
Examples	Non-examples

Definition	Characteristics
A shape with equal length sides and equal angles between each side. They differ from irregular polygons in that they not only cannot have unequal length sides or angles, but they can also not have curved lines.	Enclosed shape of straight sides Sides are equal length Angles are equal between the sides No curved lines Can be drawn on flat surface
Regular Polygons	
 <p>Examples</p>	 <p>Non-examples</p>

Definition:	Characteristics:
A cold-blooded, air breathing animal that has scales instead of hair or feathers. There are around 6,000 species	<ul style="list-style-type: none"> - Dry, scaly skin - Reproduce by laying eggs - Cold blooded & air breathing - Backbone
Reptiles	
Examples: Four existing orders of reptiles: Turtles, crocodiles & alligators, lizards & snakes, and tuataras.	Non-examples: <ul style="list-style-type: none"> - Amphibians e.g. frogs - Mammals e.g. elephants - Fish e.g. sharks

DEFINITION	CHARACTERISTICS
The multiple created when a positive integer is multiplied by the same positive integer	<ul style="list-style-type: none"> • The process of creating a square number is called "squaring" and is shown using an exponent of 2 (a^2)
Square Number	
EXAMPLES	NON-EXAMPLES
$4 (-2^2)$ $9 (-3^2)$ $100 (=10^2)$ $484 (-22^2)$ $1 (-1^2)$ $10\,000 (-100^2)$	$2 (\neq 1^2)$ 10 1000 5 -4 $\frac{1}{4}$

Definition	Characteristics/Features
A change beginning around 1750 where a greater number of goods were produced in large factories rather than in homes or small family businesses.	<ul style="list-style-type: none"> • improved agricultural production • increase in population and number of cities • steam-driven machinery used for transport and goods production • use of coal as an energy source • greater availability of iron
Industrial Revolution	
	
<ul style="list-style-type: none"> • First mechanical reaper in 1834. • Increase city size and density: London increased from 5 million in 1700 to nearly 9 million by 1800. • Mass production of goods occurs: <ul style="list-style-type: none"> o Britain: textile manufacture centralised to mills by 1780s o USA: by 1914, the USA was producing more steel than Britain, Germany, France and Austria-Hungary combined. 	<ul style="list-style-type: none"> • isolated communities with a hunter-gatherer economy • people living as subsistence farmers on small plots • people working fields by hand • transport predominately by horse and cart
Examples	Non-Examples

Have a go at creating a Frayer Model for each of the 6 tier 2 words from this term (blank templates are at the back of the booklet for you to complete this activity).

The Primary Colors



Primary colors, according to traditional color theory, cannot be formed by mixing any other color.

The Secondary Colors



Secondary colors are the combination of 2 primary colors.

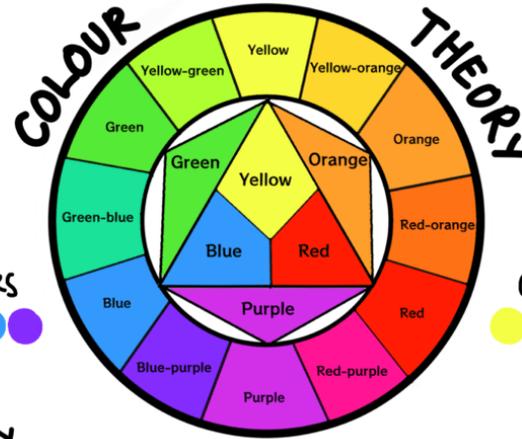
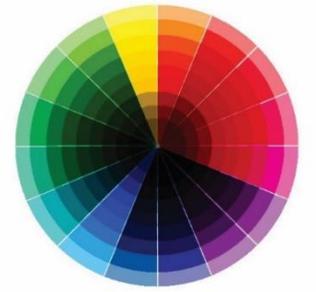
The Tertiary Colors



Tertiary colors combinations of 1 primary and 1 secondary color.

Colour

Theory



PRIMARY

Mixing different amounts of the primary colours can make all the colours of the colour wheel.



SECONDARY

Mixing two primary colours make a secondary colour



TERTIARY

Primary colours and secondary colours mixed together.



COMPLEMENTARY

Colours opposite from each other on the colour wheel.



ANALOGOUS

Colours that are neighbours on the wheel.



MONOCHROMATIC

A colour with its tints and shades. Tints are colours mixed with white. Shades are colours mixed with black.



Key words	Definition
Composition	The arrangement of elements within an art work
Value	Determines the lightness or darkness of a colour
Tone	(similar to value) describes how light or dark something is
Arrangement	A set up of components
Observational	An active acquisition of information from a primary source) eg drawing or painting from life)
Experiment	To investigate, try something out. (ideas, process or materials)
Refine	Make changes to improve
Shading	Application of tonal value to a drawing(usually using pencil)
Texture	The feel, appearance or consistency of a surface or substance
Blending	The action of mixing or combining things together eg blending one tone into another

- Primary** (Red, Yellow, Blue) three main colors
- Secondary** (Orange, Purple, Green) mix of primary colors
- Tertiary** (Yellow-orange, Green-blue, Blue-purple) between secondary & primary
- Complimentary** (Red, Green) opposites on the color wheel
- Analogous** (Blue, Green, Yellow) colors next to each other
- Split Complimentary** (Purple, Red, Green) one color, with two analogous complimentary colors
- Triadic** (Yellow, Purple, Orange) forms triangle on color wheel
- Tetradic** (Red, Orange, Green, Blue) forms a rectangle on the color wheel
- Monochromatic** (shades of red) shades and tints of one color
- Shades** (dark blue, blue, light blue) base color + black
- Tones** (grey-blue, blue, light blue) base color + gray
- Tints** (light blue, blue, dark blue) base color + white
- Warm** (Red, Orange, Yellow) reminds us of the sun
- Cool** (Blue, Green, Purple) reminds us of the sky and earth
- Neutral** (Black, White, Grey, Brown) usually not on color wheel

Formal elements of Art

The Visual Elements of line, shape, tone, colour, pattern, texture and form are the building blocks of composition in art. When we analyse any drawing, painting, sculpture or design, we examine these different parts to see how they combine to create the overall effect of the artwork

Line

Line is the beginning of all drawing. Line in an artwork can be used in many different ways. It can be used to create shape, pattern, form, structure, growth, depth, distance, rhythm, movement and a range of emotions.

Shape

Shape can be shown in a number of ways. Sometimes we can recognise the shapes, at other times, they can look like something we haven't seen before. This could be called 'abstract'.

Tone

Tone is the lightness or darkness of a colour. Tone can be changed by using white or black to make a colour lighter or darker.

Colour

Colour is the visual element that has the strongest effect on our emotions. We use colour to create the mood or atmosphere. For example, artwork that uses mainly reds and oranges, might make you feel angry.

Pattern

Pattern is made by repeating parts of the work. There are two basic types of pattern in art: Natural Pattern and Man-Made Pattern. The patterns could be made by repeating something in a certain way or completely random.

Texture

Texture is the surface effect used in art - the roughness or smoothness of the materials used to make the art.

Space

Space is an element of art by which positive and negative areas are defined or a sense of

Shape / Form	Tone	Pattern / Texture	Colour	Line
Closed	Bright	Repeated	Bright	Fluent
Open	Dull	Uniform	Bold	Free
Distorted	Light	Geometric	Primary	Controlled
Flat	Dark	Organic	Secondary	Expressionistic
Organic	Faded	Random	Cold	Strong
Deep	Smooth	Symmetrical	Warm	Angular
Positive	Harsh	Irregular	Radiant	Delicate
Negative	Contrasting	Bold	Dull	Flowing
Foreground	Intense	Bumpy	Vivid	Simple
Background	Sombre	Rough	Contrasting	Thick
Composition	Strong	Smooth	Complementary	Thin
Elongated	Powerful	Broken	Monochrome	Horizontal
Compressed	Dramatic	Fine	e	Vertical
Large		Bold	Harmonious	Broken
Small		Flat	Natural	Overlapping
2D / 3D		Grid	Saturated	Faint
Blurred			Luminous	
Movement			Opaque	
Perspective			Translucent	
			Transparent	

The Art timeline

Mask of Agamemnon
Heinrich Schliemann
1550-1500 B.B.



There are few remaining examples with early art often favoring drawing over color. Work has been found recently in tombs. Egyptian Frescoes, pottery, and metalwork.
1500 BC.

Ancient Art

The Night Watch
Rembrandt
1642



Emerged in Europe around 1600. reaction against the intricate and formulaic Mannerist style which dominated the Late Renaissance. Less complex, more realistic, & emotinal.

Baroque

Starry Night
Vincent Van Gogh
1889



In France that represented both an extension of Impressionism and a rejection of that styles inherent limitations.
20th century.

Post Impressionism

The Scream
Edvard Munch
1893



Art literature of the early 20th century. Artists attempt to depict not objective reality but rather the emotions and responses that objects and event arouse in him. Distortion, exaggeration, primitivism, and fantasy. Highly subjective and spontaneous self expression.

Expressionism

Cloud Shepard
Hans Arp
1953



1915-1922. Characterized by a spirit of anarchic revolt. Revelled in absurdity, and emphasised the role of the unpredictable an artistic expression.

Dada

Renaissance

Began in Italy, 14th century. Individual Expression, & Wordly Expirience. Move away from religion, dominated middle ages, and turn to individual man in society.



Mona Lisa
Leonardo Da Vinci
Circa 1503-1519

Impressionism

Emerged in France, 19th century. Marked a momentous break from tradition in European painting. The image of an object as if someone just caught a glimpse. Lots of color, scenary, very bright and vibrant.



Haystacks
Claude Monet
1890-1891

Modernism

Late 19th-20th centuries. Revolt against the conservative values of realism. Traditional forms of art.



Mont Ste Victoire
Paul Cezanne
1885-1889

Cubism

20th century. Avantgarde art movement, objects are broken up, analyzed, and re-assembled in an abstracted form. Revolutionized European painting and sculputure.



Weeping
Pablo Picasso
1937

Pop Art

Direct descendant of Dadaism in the way it mocks the established art world by appropriating images. Celebrate everyday objects such as; sop can, washing powders, & coke bottles.



Campbell's Soup
Andy Warhol
1962

Knowledge Goals: Biology – Key practical

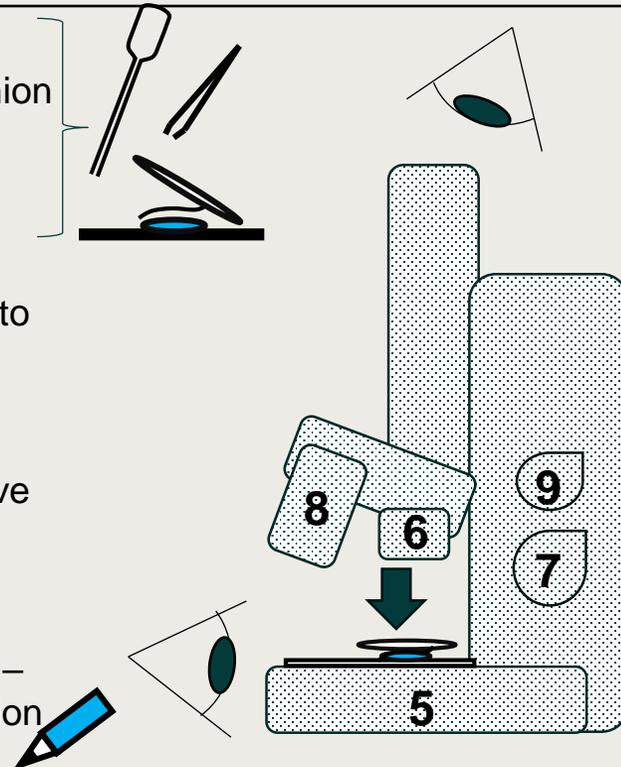
Microscopy

<https://www.youtube.com/watch?v=SX6mow1AExI>

Aim: To use a microscope to observe cells and sub-cellular structures.

Key words: magnification, resolution, focus

1. Add a drop of water
2. Epidermal tissue from onion
3. Add 2 drops of iodine solution
4. Cover slide
5. Place slide onto stage
6. Move lowest power lens to just above the slide
7. Focus using coarse adjustment
8. Set higher power objective lens
9. Refocus with fine adjustment
10. Make a labelled drawing – annotate with magnification factor



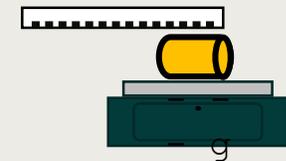
Osmosis

https://www.youtube.com/watch?v=oiexYuQm_xE

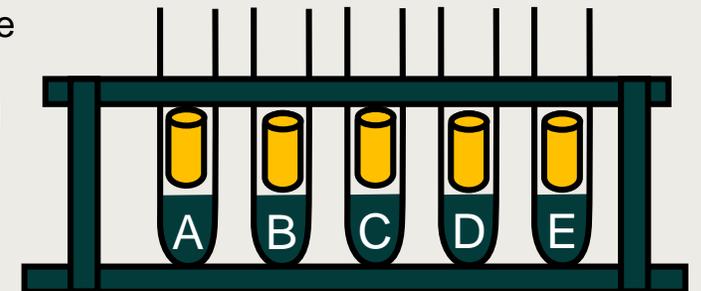
Aim: To investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue.

Key words: osmosis, solute, water

1. Bore 5 potato cores, trim to equal lengths
2. Measure the mass and length of core
3. Add different concentrations of each solution to 5 test tubes
4. Add 1 core to each test tube
5. Leave for 24 hr, remove and blot gently
6. Measure the mass and record



A = 1.0M solution
 B = 0.75M
 C = 0.50M
 D = 0.25M
 E = 0 (Water)



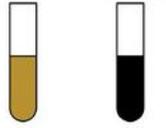
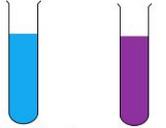
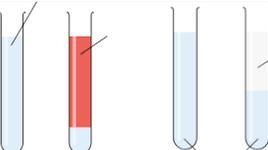
Knowledge Goals: Biology – Key practical

Food Tests

<https://www.youtube.com/watch?v=akMLGbNA0gE>

Aim: To use qualitative reagents to test for a range of carbohydrates, lipids, and proteins.

Key words: iodine, Biuret's, Benedict's, Ethanol, Sudan III, resolution, accuracy, qualitative, quantitative

Test	Method	Positive Result
Benedict's test (for sugars) Blue solution	Add Benedicts solution to food sample, mix and heat for 5 min	
Iodine test (for starch) Orange solution	Add Iodine solution to food sample and mix	
Biuret test (for protein) Blue solution	Add Biuret solution to food sample and mix	
Sudan III test or Ethanol (for lipids) Red/clear solution	Add Sudan III stain or ethanol to food sample and mix	

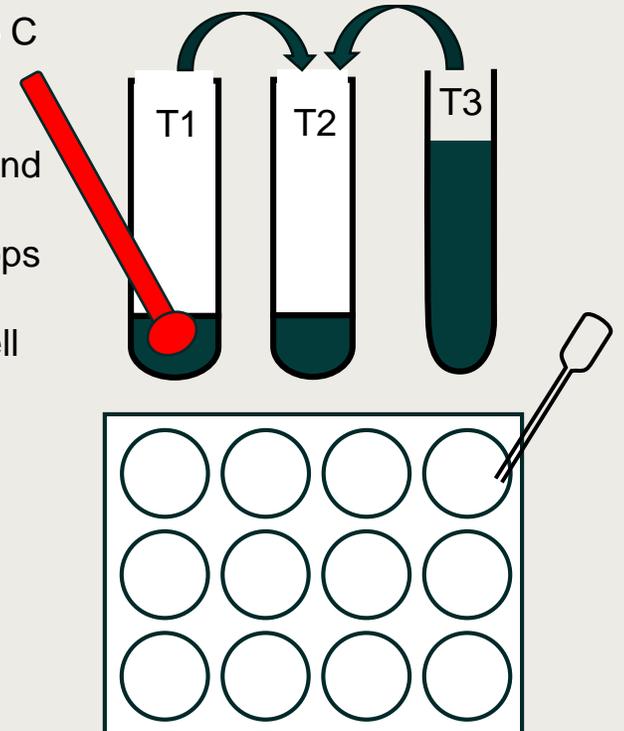
Enzymes

<https://www.youtube.com/watch?v=8Yqbu56lmXk>

Aim: To investigate the effect of pH on the rate of digestion of starch by amylase.

Key words: catalyst, pH, enzyme, activation energy, optimum, buffer

1. Set up 3 test tubes in a 35 C waterbath, T1 = pH buffer, T2 = starch T3 = amylase
2. Put a thermometer in T1 and start when 35 C
3. Set up spotting tile – 2 drops of iodine in each well
4. Add 1 drop of starch to well 1 (goes black)
5. Mix T1 and T2 and stir
6. Add T3 and start the stopwatch
7. Every 10s take one drop and add to wells
8. Record time of first well to not change colour
9. Repeat for different buffers



Knowledge Goals: Chemistry – Key practical

Making soluble salts



1. React an acid with an excess of metal, metal oxide, hydroxide or carbonate until no more reacts.

2. Filter the mixture to get a solution of the salt with the excess solid left behind.

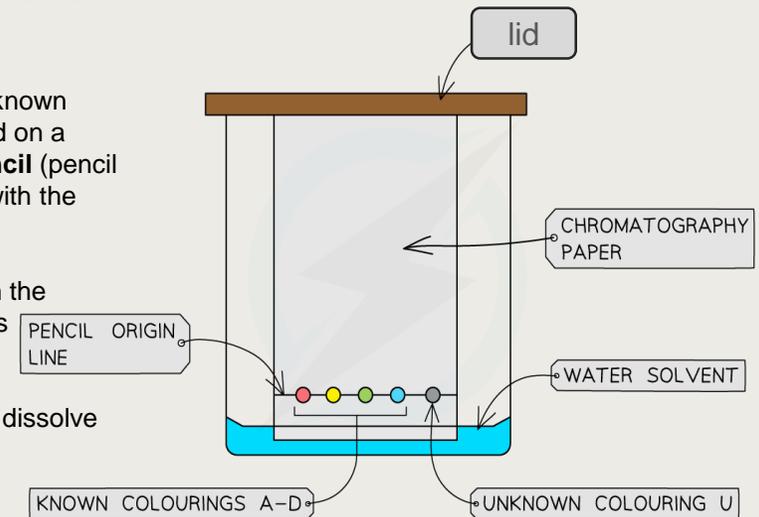
3. Heat the solution to start evaporating the water from the solution.

4. Turn off the heat and leave until all of the water has evaporated, leaving the solid salt behind.

- The reaction between the acid and the black copper oxide is **heated** and **stirred** to speed up the reaction.
- More copper oxide is used than is needed (**'excess'**). This is because we need all of the acid to react (we would not want there to be any left over acid in the solution in the evaporation stage).
- The **filtration stage** removes the excess black copper oxide from the clear blue solution because the unreacted copper oxide is an **insoluble** solid
- We use a **water bath** for the evaporation stage (*not* direct heat from the Bunsen burner) because this is safer and prevents the crystals from decomposing.

Paper chromatography

- Spots of known or unknown substances are placed on a baseline drawn in **pencil** (pencil won't 'run' / interfere with the test)
- The paper is placed in the water so that the spots are above the water level (otherwise all of the spots would dissolve and mix)
- The lid stops the water (or other solvent) from evaporating



- Chromatography *works* because substances that are more soluble in the water travel up the paper further than those that are less soluble
- A **pure** substance will only consist of one compound and will therefore only show **one** spot.
- Usually the unknown substance (U in diagram) is run alongside 1 or more known substances (A-D in diagram). You can then see if spot positions of the known substances match any of those of the unknown substance
- Each spot has an R_f value that can be calculated using the formula:
R_f value = distance travelled by spot ÷ distance travelled by solvent

Substances can be identified by comparing their R_f value to R_f value of known compounds. To fairly compare R_f value, the same solvent must have been used.

Knowledge Goals: Computer Science

BOOLEAN LOGIC:

A computer is basically a collection of *transistors* and *circuits*.

These components have two states:

- **on** - a current is flowing through the component
- **off** - a current is not flowing through the component

These two states can easily be represented by using *binary*:

- **1** = on (TRUE)
- **0** = off (FALSE)

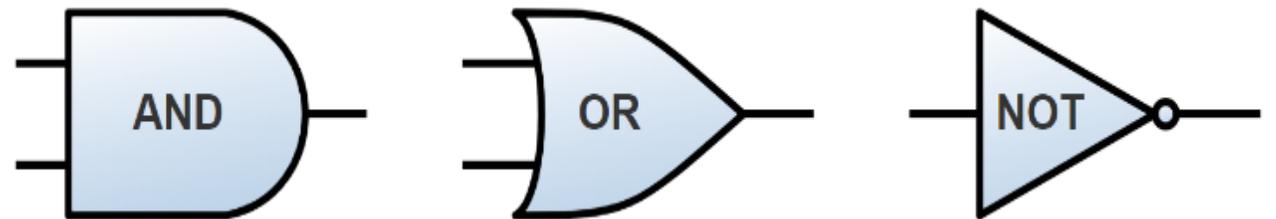
A **Truth Table** shows, for each combination of inputs, what the output will be. An AND gate is represented in a truth table as seen below:

Input A	Input B	Output Q
0 (off)	0 (off)	0 (off)
0 (off)	1 (on)	0 (off)
1 (on)	0 (off)	0 (off)
1 (on)	1 (on)	1 (on)

LOGIC GATES:

In its most basic form, a computer is a collection of powered and unpowered circuits and transistors. A logic gate is a series of transistors connected together to give one or more outputs, each output being based on the input or combination of inputs supplied to it. There are three types of gate to consider:

- **AND gate**
- **OR gate**
- **NOT gate**



AND gates are represented diagrammatically as:



Knowledge Goals: Drama



Set from 1960 – 1980
In Liverpool, England



Key Themes

Childhood Adolescence
Superstition
Violence
Nature Vs Nurture
Social Class

Features of form

1. A didactic play	A drama which intends to teach, especially with regard to morals.
2. Tragedy	An event causing great suffering, destruction and distress.
3. Parallels and contrasts	Parallels – similarities. Contrasts – differences.
4. Narrator	A person who gives the spoken account of something. Omniscient to remind the audience about the ending of the play.
5. Stage directions	An instruction in the text of the play indicating the movement, the position or tone of an actor, or the sound effects and lighting.
6. Song	A single work of music that is typically intended to be sung by the human voice. It is through the songs that the characters reveal their true thoughts and feelings.
7. Dialogue	A conversation between two or more people.
8. Montage	A series of short sequences are edited into a sequence to condense space.
9. Foreshadowing	A warning or indication of a future event.
10. Symbols and motifs	A thing that represents or stands for something else. A motif is a dominant or recurring image of idea.
11. Accent and dialect versus Standard English	Standard English is any form of the English Language that is accepted as a national norm. Accent is a distinctive way of pronouncing a language. Dialect is a particular form of language which is peculiar to a specific range or social group.



Characters

1. Mrs Johnstone	Naïve, loving and maternal, caring, rash, strong, generous, good, selfless, uneducated, superstitious, lively, zesty, trapped, victim, helplessness,
2. Mrs Lyons	Lonely, cold, wealthy, dependent, inconsiderate, pampered, self-centred, manipulative, over-protective, anxious, unreasonable, mad
3. Mickey	Friendly, excitable, adventurous, sneaky, cast-off, wants to impress, shy, determined, bright, witty, hard-working, ambitious, trapped, victim
4. Edward	Friendly, generous, naïve, restricted, impulsive, lacks compassion, condescending, sneaky
5. Sammy	Aggressive, threatening, sarcastic, anti-social, criminal, hostile
6. Linda	Kind, compassionate, feisty, humorous, strong-willed, supportive, protective, poor, untrustworthy, desperate

Knowledge Goals: English



PLOT	CHARACTERS	THEMES AND CONTEXT
<p>The play of 'Noughts and Crosses' is adapted from a novel of the same name by Malorie Blackman, which alternates the narrator between Sephy and Callum. In the play, Act 1 mainly focuses on Callum's 'world' and Act 2 switches to Sephy's 'world'.</p> <p>We follow the love story of Sephy and Callum, two young people kept apart by bigotry, terrorism and injustice. Sephy is a Prime Minister's daughter from the powerful Crosses who falls for rebel Callum, son of a dangerous nought agitator.</p>	<p>The Noughts:</p> <p>Callum McGregor - in love with Sephy Jude McGregor - Callum's brother Lynette McGregor - Callum's sister Ryan McGregor - Callum's father Meggie McGregor - Callum's mother</p> <p>The Crosses:</p> <p>Sephy Hadley - in love with Callum Kamal Hadley - Sephy's father Jasmine Hadley - Sephy's mother Minerva Hadley - Sephy's sister</p>	<p>Themes:</p> <p>Racism Discrimination Friendship Love War Prejudice</p> <p>Context:</p> <p>The story of 'Noughts and Crosses' was influenced by a time in history where white people had control over black people. In the play's scenario, as in the original novel, black people (Crosses) have control over white people (Noughts).</p>
KEY TERMINOLOGY	CORE ASSESSMENT SKILLS	STUDENTS ARE AIMING TO BE ABLE TO WRITE:
<p>Dystopian – the opposite of utopian (paradise); a nightmare world.</p> <p>Discrimination – treating someone worse than others because of who they are.</p> <p>Bigotry – the holding of prejudiced and discriminatory views.</p> <p>Oppression – keeping people down through enforced control.</p> <p>Juxtaposition – two contrasting images placed together.</p> <p>Contrast – the difference between things.</p> <p>Foreshadowing – laying clues for what will happen next.</p> <p>Dialogue – interaction between characters.</p> <p>Theme – a key idea that recurs throughout a text.</p> <p>Context – the background information that helps a text make sense.</p>	<p>Reading:</p> <p>Evaluation of effectiveness of writer's choices and approach (EV)</p> <p>Analysis of writer's techniques – language and structure (WTL/WTS)</p> <p>Analysis of effect on reader/audience (ERA)</p> <p>Use of evidence (E)</p> <p>Writing:</p> <p>Ambitious vocabulary (AV)</p> <p>Ambitious punctuation (AP)</p> <p>Sentence variety (SV)</p>	<p>R: The writer effectively uses dialogue and emotive verbs to convey the desperation of the characters. When Callum says 'I need to see you,' the verb 'need' suggests there have been troubles and Callum requires Sephy's support. The connotations of the word are of desperation and may make the audience feel anxious for the characters due to the unresolved tension between them and the pleading tone that the line implies.</p> <p>W: There was uproar in the execution chamber last night as Ryan MacGregor, the Liberation Militia member accused of the Meadowview bombing, was granted a last-minute reprieve from his death sentence. An eyewitness who spoke on condition of anonymity remarked, 'He is the luckiest man alive'. Reactions were mixed.</p>

Knowledge Goals: Food Technology

A **Head Chef** is a highly skilled professional cook who oversees the operations of a restaurant or dining facility

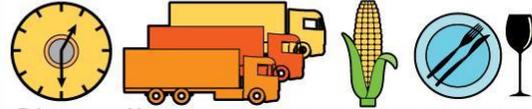
FOOD MILES

WHAT ARE THEY AND HOW DO THEY AFFECT OUR WORLD?

AMERICAN FOOD TRAVELS AN **average** OF 1,500 TO 2,500 MILES MILES FROM FARM TO TABLE



GROWING FOOD CLOSER TO **home** ALLOWS US TO HAVE FRESHER FOODS, AND MORE VARIETIES OF FOODS



Time + distance FROM THE POINT & TIME WHERE FOOD IS **grown** TO WHERE IT IS **consumed**. THE SMALLER THE BETTER!

60-70% OF THE COST OF YOUR FOOD GOES TO **production inputs**



(FERTILIZER, OIL/GAS, WATER, ETC.), TRANSPORTATION, AND STORAGE THAT USE **limited** RESOURCES, PETROCHEMICALS, & GENERATE GREENHOUSE GASSES.

FOOD MILES ARE AMONG THE FASTEST-GROWING SOURCES OF GREENHOUSE GAS EMISSIONS



FRUITS AND VEGETABLES ALLOWED TO **grow to full ripeness** HAVE MORE NUTRITIONAL VALUE THAN CONVENTIONAL PRODUCE HARVESTED EARLY AND RIPPENED WITH CHEMICAL GASSES IN TRANSPORT AND STORAGE



AVOIDING CROSS-CONTAMINATION

Chemical-to-Food

- Label chemicals clearly
- Have a designated closet for chemicals
- Keep chemicals far away from your food



Food-to-Food

- Keep ready-to-eat foods away from raw foods or food allergens
- Use designated utensils, cutting boards, etc. for raw foods and allergens
- After handling allergens or raw foods, immediately change glove and wash your hands



Pest-to-Food

- Store food at least 6 inches above the floor
- Keep foods covered
- Keep a clean, sanitized, and tidy kitchen



The role of the EHO (Environmental Health Officer)



Checking ventilation

The role of the EHO

- They can visit randomly so long as it is deemed "a reasonable time"
- They sometimes visit as a result of a complaint
- Can close a business immediately if the risk is high
- They can offer advice to business'
- They can seize and detain food
- They can prosecute business'
- They can inspect training records of staff
- Monitor hygiene and cleaning standards
- Take temperatures of fridges, inspect how waste is disposed of, hand washing facilities and food storage

Medical Reasons

Name of medical condition	Food/drinks to avoid	Reason to avoid
Diabetes	Starchy food/ high in sugar	High in saturated fat. Can lead to heart disease, while excess sugars can cause unwanted weight gain and blood sugar spikes
Nut allergy	Nuts, blended cooking oil, margarine with nuts oils and often seeds	the immune system overreacts to proteins in these foods
Lactose intolerance	Milk, cheese, yogurt, processed food	cannot metabolize lactose properly; they lack lactase, an enzyme required in the digestive system to break down lactose . Patients typically experience bloating, flatulence, and diarrhoea
Gluten intolerance (coeliac)	Wheat, wholemeal, bran, pasta, rye, beer	Celiac disease is caused by a reaction to a gluten protein found in wheat, barley, rye, and sometimes oats. Symptoms include chronic diarrhoea , weight loss and fatigue

Fats, oils and lipids:

Too much fat is bad for you, but so is not enough.

Source

Saturated Fats

(From Animal sources. They are also called unhealthy fats. They are generally solid at room temperature)

Sausages / Bacon / Lard / Dairy

Unsaturated Fats

(These are healthier. They are often liquid at room temperature.)
 Monounsaturated fats
 - olive oil / avocados
 Polyunsaturated fats
 - sunflower oil / seeds

Omega-3

These are Polyunsaturated and called "healthy" fats as your body needs them but can't make them. They are good for your heart.
 - Oily fish / Nuts / Seeds

Function

Energy
 Warmth
 Protection of organs
 Source of fat soluble vitamins
 Hormone production

Dietary Reference Values		
DRI	Men	Women
Total fat	95g	70g
Sat fat	30g	20g

Too much
 Obesity
 Heart disease
 Type 2 diabetes
 Stroke
 Cancer

Not enough
 Vitamin deficiency (fat soluble)
 Unprotected organs

Carbohydrates

There are 2 kinds, simple and complex - Sugar & Starches

Monosaccharides

Glucose, Fructose, Galactose

Disaccharides

Maltose, Sucrose, Lactose

Polysaccharides

Starch, Glycogen, Cellulose

Source

Simple - these are sugars (monosaccharides, disaccharides)
 Cakes, jam, soft drinks

Complex - these are starches (polysaccharides)
 Bread, potatoes, Flour, Pasta, Rice.

Function

Simple
 Quick burst of energy
Complex
 Longer lasting energy

Free sugars

These give you no nutritional benefit other than energy.

Not enough

Can make blood sugar level drop
 • hunger,
 • dizziness,
 • Tiredness
 • Lack of energy
 Our body will use protein for energy (leads to loss of muscle)

Too much

• Excess is turned into fat
 • Can cause obesity
 • Too much sugar leads to dental problems
 • Can lead to type 2 diabetes

Protein:

These are made up of **essential amino-acids** and **non-essential amino-acids**. (Our bodies can make non-essential amino acids, but we need to get essential amino acids from our food).

Source

- HBV - these have all the essential amino acids
 •Meat, fish, dairy, eggs (animal sources)
- Tofu
- LBV - these are missing at least one essential amino acid
 •Seeds, nuts, beans, pulses, cereals, Quorn (plant sources)

Function

Growth
 Repair
 maintenance



Not enough

Kwashiorkor
 Oedema
 Anaemia
 Slow growth in children

Too much

Excess protein can be converted to energy. If unused turns to fat.

Dietary Reference Values

Age	Amount
1-3	15g
4-6	20g
7-10	28g
11-14	42g
15-18	55g
19-50	55g
50+	53g

Complementary actions

Combining 2 or more LBV proteins helps get a balance of essential amino acids. e.g. beans on toast.

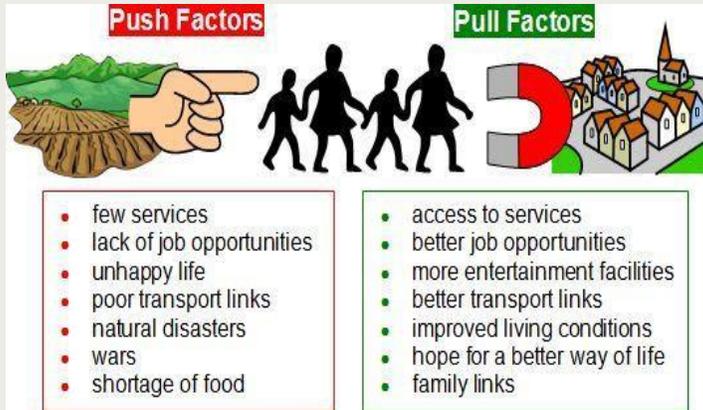
Knowledge Goals: French

La nourriture et les boissons du beurre/du fromage du lait/du pain du poisson/du poulet du yaourt de la confiture de la glace	Food and drink butter/cheese milk/bread fish/chicken yoghurt jam ice cream	de la viande de l'eau (F) des bananes/des fraises des œufs/des pêches des poires/des pommes des pommes de terre	<i>meat</i> water bananas/strawberries eggs/peaches pears/apples potatoes
Les repas Qu'est-ce que tu prends pour le petit-déjeuner? Qu'est-ce que tu manges à midi? Qu'est-ce que tu manges comme casse-croûte? Qu'est-ce que tu manges le soir? Qu'est-ce que tu bois? Pour le petit-déjeuner, ... À midi, ... Comme casse-croûte, ... Le soir, ...	Meals What do you have for breakfast? What do you eat at lunchtime? What do you have as a snack? What do you eat in the evening? What do you drink? For breakfast ... At lunchtime ... As a snack ... In the evening ...	Comme dessert, ... Je prends/je mange ... des céréales du pain grillé un sandwich des chips/des biscuits des pâtes de la salade de la glace au chocolat Je bois du jus d'orange.	<i>For dessert ...</i> <i>I have/I eat ...</i> cereal toast a sandwich crisps/biscuits pasta salad chocolate ice cream <i>I drink orange juice.</i>
Les quantités un kilo de ... deux cent cinquante grammes de ... un litre de ... un paquet de ...	Quantities a kilo of ... 250 grams of ... a litre of ... a packet of ...	un pot de ... une boîte de ... une bouteille de ... quatre tranches de ...	<i>a jar/pot of ...</i> <i>a tin/can of ...</i> <i>a bottle of ...</i> <i>four slices of ...</i>
Les vêtements Je porte ... un blouson/un chapeau un costume un imperméable un jean (moulant) un manteau/un pantalon un polo/un pull un sac à main/un short un sweat à capuche un tee-shirt une casquette une ceinture	Clothes I wear/am wearing ... a jacket/a hat a suit a raincoat (a pair of) (skinny) jeans a coat/(a pair of) trousers a polo shirt/a jumper a handbag/(a pair of) shorts a hoodie a T-shirt a cap a belt	une chemise/une écharpe une mini-jupe/une montre une robe/une veste des baskets (de marque) des boucles d'oreille des bottes des chaussettes des chaussures des gants des lunettes de soleil en laine/en cuir rayé(e)(s)	<i>a shirt/a scarf</i> <i>a mini-skirt/a watch</i> <i>a dress/a jacket</i> (designer) trainers earrings boots socks shoes gloves sunglasses woollen/leather striped
Les couleurs blanc(he)(s) bleu(e)(s) gris(e)(s) jaune(s) marron mauve(s) noir(e)(s)	Colours white blue grey yellow brown purple black	orange rose(s) rouge(s) vert(e)(s) clair foncé multicolore(s)	orange pink red green light dark multi-coloured
La vie quotidienne J'ai cours tous les jours sauf ... Les jours d'école, ... je dois me lever tôt je dois quitter la maison à (7h30) Le soir, ... je dois faire mes devoirs je dois aider ma mère je peux regarder un peu la télé	Daily life I have lessons every day except ... On school days ... I have to get up early I have to leave the house at (7.30) In the evening ... I have to do my homework I have to help my mother I can watch a bit of TV	Le samedi/Le dimanche, ... je peux rester au lit je peux retrouver mes copains/copines en ville je dois ranger ma chambre je peux écouter de la musique	<i>On Saturdays/Sundays ...</i> <i>I can stay in bed</i> <i>I can meet up with my friends in town</i> <i>I have to tidy my room</i> <i>I can listen to music</i>
Au magasin de vêtements la taille la pointure les cabines d'essayage une taille moyenne Il y a un trou. Il y a une tache. Il/Elle est/ils/Elles sont ... trop petit(e)(s)	In the clothes shop size shoe size changing rooms medium size There's a hole (in it). There's a stain (on it). It is/They are ... too small	trop grand(e)(s) cassé(e)(s) Il/Elle ne marche pas. Je voudrais ... échanger (la jupe/le pantalon, etc.) un remboursement	too big broken <i>It is not working/doesn't work.</i> <i>I would like ...</i> to exchange (the skirt/trousers, etc.) a refund

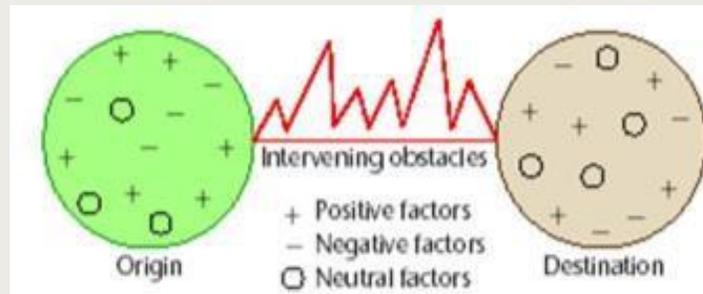
Faire les magasins ou faire du shopping en ligne? Je préfère ... faire les magasins faire mes achats en ligne parce que/qu' ... c'est mieux d'essayer les vêtements dans un magasin	Go to the shops or shop online? I prefer ... to go to the shops to make my purchases online because ... it's better to try clothes on in a shop	je peux demander l'opinion de mes ami(e)s il y a trop de monde dans les magasins on peut trouver des vêtements moins chers c'est plus facile/plus rapide	<i>I can ask my friends' opinion</i> <i>there are too many people in the shops</i> <i>you can find cheaper clothes</i> <i>it's easier/faster</i>
Les fêtes Noël la veille de Noël Pâques Hanoukka Aïd-el-Fitr le 6 janvier/la fête des Rois le premier avril la Chandeleur le Nouvel An la Saint-Sylvestre la Saint-Valentin la fête des Mères le 14 juillet/la fête nationale française On est chrétiens. On est juifs. On est musulmans.	Festivals Christmas Christmas Eve Easter Diwali Hanukkah Eid al-Fitr Epiphany April Fool's Day Candlemas New Year New Year's Eve Valentine's Day Mother's Day Bastille Day, 14 July We are Christian. We are Jewish. We are Muslim.	Chez moi/nous, ... on fête (Noël/Divali, etc.) on boit du champagne on décore le sapin de Noël on s'offre des cadeaux on ouvre les cadeaux on chante des chants traditionnels on allume des bougies on cherche des œufs dans le jardin On prépare/mange ... de la dinde rôtie des légumes une bûche de Noël au chocolat des crêpes une galette des Rois toutes sortes de bonnes choses des choses sucrées	<i>At my/our house ...</i> <i>we celebrate (Christmas/Diwali, etc.)</i> <i>we drink champagne</i> <i>we decorate the Christmas tree</i> <i>we give each other presents</i> <i>we open the presents</i> <i>we sing traditional songs</i> <i>we light candles</i> <i>we look for eggs in the garden</i> <i>We prepare/eat ...</i> <i>roast turkey</i> <i>vegetables</i> <i>a chocolate Yule log</i> <i>crêpes</i> <i>tart eaten for Epiphany</i> <i>all sorts of good things</i> <i>sweet things</i>
Un repas spécial Je vais/On va apporter ... du jambon/du pâté du saucisson des baguettes des sautecks des saucisses des salades composées une salade de riz du concombre	A special meal I am/We are going to bring ... ham/pâté salami baguettes steaks sausages mixed salads a rice salad cucumber	une laitue des tomates/des oignons des poivrons des champignons des abricots des framboises du raisin des mini-gâteaux une tarte aux fruits	<i>a lettuce</i> <i>tomatoes/onions</i> <i>peppers</i> <i>mushrooms</i> <i>apricots</i> <i>raspberries</i> <i>grapes</i> <i>mini-cakes</i> <i>a fruit tart</i>
Les magasins le marché/le supermarché la boucherie la boulangerie	Shops market/supermarket butcher's bakery/baker's	la charcuterie la pâtisserie l'épicerie (f)	<i>pork butcher's/delicatessen</i> <i>cake shop/pastry shop</i> <i>greengrocer's</i>
Fêter le 14 juillet On va aller au bal. On va regarder le feu d'artifice.	Celebrating Bastille Day We're going to go to the dance. We're going to watch the fireworks.	On va s'amuser. On va inviter ...	<i>We're going to have fun.</i> <i>We're going to invite ...</i>
Félicitations! l'anniversaire (m) le mariage la fête C'était mon anniversaire. J'ai reçu beaucoup de cadeaux. Ma sœur a eu son premier bébé. Je suis allé(e) au mariage de (ma cousine).	Congratulations! birthday wedding/marriage party It was my birthday. I received lots of presents. My sister had her first baby. I went to (my cousin's) wedding.	Mon frère s'est pacé avec son compagnon. Il y avait ... beaucoup d'invités un gâteau spécial C'était ... génial	<i>My brother entered into a civil partnership with his partner.</i> <i>There was/were ...</i> <i>lots of guests</i> <i>a special cake</i> <i>It was ...</i> <i>great</i>
Les mots essentiels avec pour donc, alors car/parce que malheureusement sinon parfois quelque(s) beaucoup de	High-frequency words with for so, therefore for/because unfortunately if not, otherwise sometimes some/a few lots of	en ce moment en été avant-hier il y a (trois) jours Je suis désolé(e). bien sûr quel/quelle/quels/quelles ...? ce/cet/cette/ces	<i>at the moment</i> <i>in summer</i> <i>the day before yesterday</i> <i>(three) days ago</i> <i>I'm sorry.</i> <i>of course</i> <i>which ...?</i> <i>this/these</i>

Knowledge Goals: Geography – Is the grass really greener? Migration

Push and pull factors



Lee's model of migration



Positive factors : Pull factors

Negative factors : Push factors

Natural factors : climate, landscape

Intervening obstacles : physical distance, physical barriers, political obstacles and cultural barriers

Different types of migration

Forced migration	The movement of people from one place to another through no choice of their own
Voluntary migration	People moving by choice
International migration	The movement of people from one country to another
Rural to urban migration	People moving from the countryside to urban areas
Economic migrant	A person who moves from one place to another for economic reasons e.g. job

Life in the slums

Cramped housing - 6 to 8 people per small room. Cook, eat and live in the slums. Made from waste materials such as wood, bricks, plastic and corrugated sheeting. Family life is often difficult as there is no privacy

Sanitation – toilets are shared between as many as 50 households and often drain straight into the river. Water is often taken from this river to cook and wash with

Disease – this is often rife as garbage is often dumped in the streets. This pollutes the area and encourages rats which carry disease. Children play and people socialise in the streets

Services – Electricity and water are often not connected legally to the slums. There is often limited and expensive access to health and education. Sewerage and waste collection services often do not exist.

Challenges facing cities due to migration

Social challenges	<ul style="list-style-type: none"> • Air pollution due to traffic congestion and factories • Health issues • Overcrowding • Service provision • Poorest face biggest challenges
Economic challenges	<ul style="list-style-type: none"> • Employment • Low standard of living • Economic access to services (poverty)
Environmental challenges	<ul style="list-style-type: none"> • Deforestation • Air pollution • Water pollution • Noise pollution • Waste management

Improving the slums

Top down approaches - the government decides on the project

Examples of this include :

1. Self help schemes where the government gives loans / materials to slum dwellers to help them improve their livelihood
2. National schemes to improve water and electricity supplies
3. New homes are built and slum dwellers are moved into these before demolishing the slums

Bottom up approaches – often small scale projects that work with the local community

Examples of this include :

1. Aid agencies help provide water to the slums
2. Slum dwellers work with aid agencies to build sewers and improve their homes
3. Microloans are given out to help people improve their quality of live

Year 9 Knowledge Goals– Civil Rights in the UK and the USA



8th May 1945
VE Day in Europe

2nd Sept. 1945
VJ Day in America

1948
Empire Windrush arrives

1955
Bus Boycott in Montgomery

1957
Wolfenden Report

1961-63
Bristol Bus Boycott

1969
Stonewall Riots

1973
Roe vs Wade

1976-77
Grunwick Strike

What are civil rights?

Civil rights guarantee people equal opportunities and protections, regardless of race, religion, gender, sexuality or other personal characteristics. These include the right to vote, the right to government services, the right to education and the right to use public facilities. In the years following the Second World War in both the UK and America, groups such as women, the LGBTQ+ and black people fought for equal rights. There were similarities in the way this was approached, but also some vital differences.

	Women	LGBTQ+	Black people
UK	<ul style="list-style-type: none"> During World War Two, women once again worked to support the war effort. This included in factories, the Women's and Army as well as the Women's Royal Army Corps, the Women's Royal Naval Service and the Women's Air Force. 1950's-1960's: increased campaigns for social equality. Women begin calling themselves 'feminists'. Described as 'second wave feminism'. Began expressing themselves through fashion (shorter skirts, wearing trousers). Sexism continued: women continued to be presented as an object. In 1970, members from Women's Liberation Movement protested at the Miss World pageant. Various strikes took place too – Ford machinists strike in 1968, Grunwick strike in 1976-77. Led to some changes: Equal Pay Act (1970), Sex Discrimination Act (1975), but experiences of sexism have continued despite legal changes. Pay gap continues. 	<ul style="list-style-type: none"> In 1950's, LGBTQ+ people had to keep their identities and personal lives secret. Homosexual acts were illegal. LGBTQ+ people used the Polari language to communicate, as well as wearing flowers. By the 1950s, places were set up for them to go to (Gateways Club, London) Groups set up for lesbian and bisexual women too: Cynthia Reid set up Minorities Research Group in 1963, meeting monthly. Wolfenden Report (1957) recommended decriminalisation of homosexual acts. Government attitudes slowly changing. 'Swinging Sixties' led to softening attitude towards LGBTQ+ people. 1967 Sexual Offences Act made consensual relationships between two men 21. Still above that for men and women. British Gay Liberation Front (GLF) founded in 1970. Exposed ways gay people were discriminated against. Protest a key part. First Gat Pride march took place on 1 July 1972. While legal changes took place, social attitudes were slower. 	<ul style="list-style-type: none"> Between 1948 and 1971, nearly 500,000 people migrated to Britain from the Caribbean – known as the Windrush Generation. Despite having highly skilled jobs, most forced to take low-skilled jobs due to colour of skin. Many struggled to find places to live – signs said 'no blacks'. Many went to Notting Hill, but the Teddy Boys attacked people here in 1958. Claudia Jones set up Notting Hill carnival, to celebrate heritage and protest against racist treatment. Not illegal to discriminate against people. Cities introduced 'colour bars' – policies that meant people of African, Caribbean or Asian heritage were denied opportunities such as jobs, eating at restaurants and leisure activities. Bristol Omnibus Company brought in 'colour bar' on Bristol buses in 1955. Brought to public attention in 1961: campaign began to boycott them. Colour bar ended in 1963. Sparked movement against racial discrimination. Race Relations Acts, 1965-1976. Banned racial discrimination. Racism continued, groups such as National Front established. 'Rivers of Blood' speech by Enoch Powell. Violence between police and black communities continued: Brixton and Stephen Lawrence
USA	<ul style="list-style-type: none"> World War Two had altered life for women: by the 1960's, issues of equality and discrimination were the focus. Catalyst in America was Betty Friedan's 1963 book <i>The Feminine Mystique</i>. Criticised post-war belief that woman's role was to marry and bear children. 1966: National Organisation for Women (NOW) founded. Aimed to tackle discrimination. Demanded equal rights to women, and greater access to contraception and abortion. 	<ul style="list-style-type: none"> LGBTQ+ people in America disapproved of by others. Laws restricted rights. 1961: Illinois becomes first state to decriminalise homosexuality. 28th June 1969: police raided the Stonewall Inn, a gay bar in New York City. Hundreds of LGBTQ+ people took to the streets and fought back for 6 days. Became known as the Stonewall Riots. Highlighted brutality and unjust treatment of LGBTQ+ community. In aftermath, Gay Liberation Front founded in USA in 1969; first group 	<ul style="list-style-type: none"> After 1865, slavery was abolished and Black Americans were granted American citizenship. Racist attitude of some southern states meant they opposed these changes – KKK formed in 1865. 1896: Supreme Court votes that segregation between black and whites did not violate the US Constitution. Known as 'separate but equal' Jim Crow laws. Jim Crow laws enforced segregation in south – in schools, on transport, in cinemas etc.

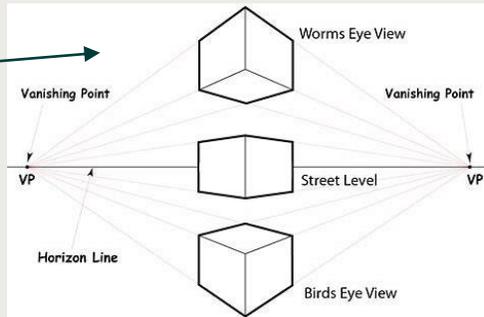
Knowledge Goals: Materials 1 - Passive Amplifier

Health and Safety

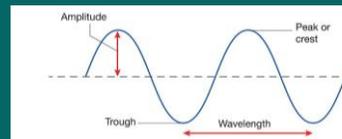
It is really important we **ASSESS** the **RISK** and **REDUCE** the **RISK** of Injury by **LISTENING** To the **TRAINING** and following the correct **PPE** usage

- Hair must be tied up in the workshop
- Blazers and ties must be removed
- Jewellery must be removed
- Only use machines you have been told to use and have been demonstrated to you
- Ensure you know where the emergency stop button is
- Do not eat or drink in the workshop
- No running

Two-point perspective - This shows an object from the side with two vanishing points. It gives the most realistic view of a product as it shows the item edge on, as we would see it. It is often used to produce realistic drawings of an object.

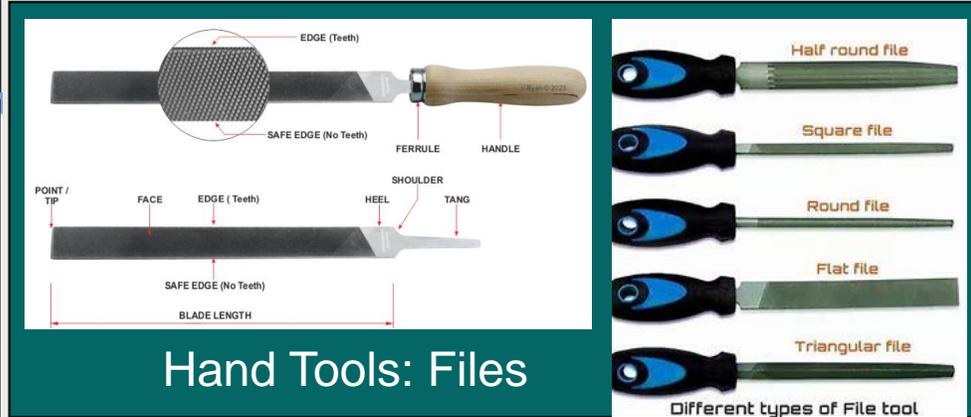


The loudness of a sound is a measure of the amplitude of the wave. The greater the amplitude, the louder the sound.



CAD – 2D Design Software

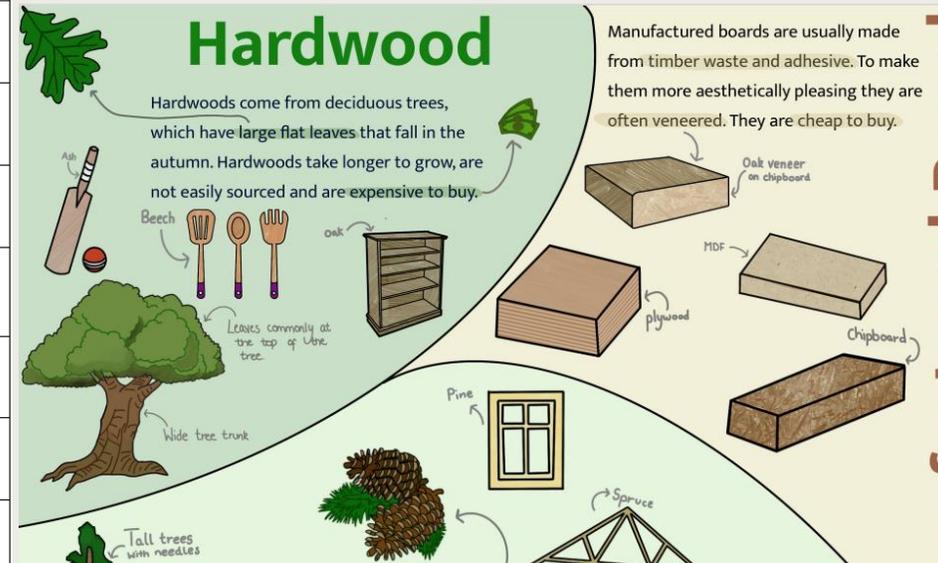
	Select Tool – Used when selecting drawing, moving drawing or lines and shapes.
	Circle Tool – Used to draw circles. Click and hold to extend the tool bar for more options.
	Line Tool – Used to draw lines. Click and hold to extend the tool bar for more options.
	Path Tool – Used to draw curves and curved lines. Click and hold to extend the tool bar for more options.
	Rectangle Tool – Used to draw rectangles and squares. Click and hold to extend the tool bar for more options.
	Double Path Tool – Used to draw curves and curved lines with a double line. Click and hold to extend the tool bar for more options.
	Text Tool – Used to add text to the design. Text style can be changes and altered to suit the design.
	Mirror Tool – Used to mirror and repeat a design. Found by holding down the Transform Tool
	Grid Lock – Used to show the grid spacing on the drawing.
	Delete Any – Deletes whole line in a drawing.
	Delete Part – Deletes part of lines to the nearest two intersections.



Hand Tools: Files

Hardwood

Hardwoods come from deciduous trees, which have large flat leaves that fall in the autumn. Hardwoods take longer to grow, are not easily sourced and are expensive to buy.



Softwoods come from coniferous trees. These often have pines or needles, and they stay evergreen all year round - they do not lose leaves in the autumn. They are faster growing than hardwoods, making them cheaper to buy, and are considered a sustainable material.

Softwood

Manufactured Board

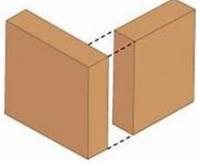
Knowledge Goals: Materials 1 - Sweet Dispenser

Wood Joints

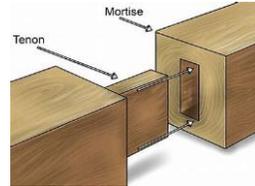
Dowel Joint



Butt Joint



Mortice and Tenon



Avoiding Design Fixation

SCAMPER



S

SUBSTITUTE

Replace a think or concept with something else

C

COMBINE

Unit? What? Who? Ideas? Materials?

A

ADAPT

Adjust to a new purpose. Re-shape? Tune-up?

M

MODIFY, MAGNIFY, MINIFY

Change the color, sound, motion form, size
Make it larger, stronger, thicker, higher, longer
Make it smaller, lighter, slower, less frequent, reduce

P

PUT TO ANOTHER USE

Change when, where, location, time or how to use it.

E

ELIMINATE

Omit, get rid of, cut out, simplify, weed out...

R

REARRANGE, REVERSE

Change the order, sequence, pattern, layout, plan, scheme, regroup, redistribute...

Health and Safety

It is really important we **ASSESS** the **RISK** and **REDUCE** the **RISK** of Injury by **LISTENING** To the **TRAINING** and following the correct **PPE** usage

- Hair must be tied up in the workshop
- Blazers and ties must be removed
- Jewellery must be removed
- Only use machines you have been told to use and have been demonstrated to you
- Ensure you know where the emergency stop button is
- Do not eat or drink in the workshop
- No running

6R's - Sustainability

Recycle - Take an existing product that has become waste and re-process the material for use in a new product.

Reuse - Take an existing product that's become waste and use the material or parts for another purpose, without processing it.

Reduce - Minimise the amount of material and energy used during the whole of a products life cycle.

Refuse - Don't accept a product at all if you don't need it or if its environmentally or socially unsustainable.

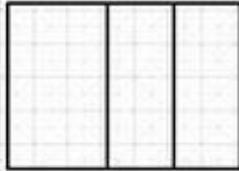
Rethink - Our current lifestyles and the way we design and make.

Repair - When a product breaks down or doesn't function properly, fix it.

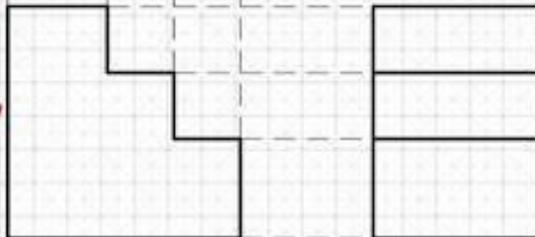
Orthographic Projection

Now look at this example using a set of steps, I have included the dimensions on the **ISOMETRIC DRAWING**.

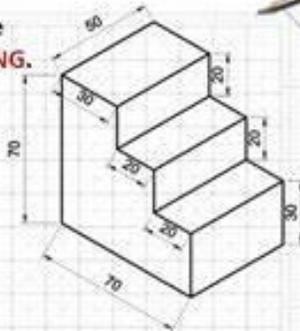
Plan View (Top)



Front View

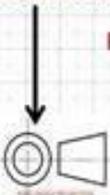


End View (Side)



Note how the three drawings are laid out, all in line with each other and each has been drawn to scale.

All of this means the drawing meets the required standard and should have the symbol for **3RD ANGLE ORTHOGRAPHIC PROJECTION**.



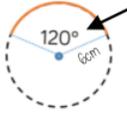
Knowledge Goals: Maths

Unit 12 – Circles

Topic	Video	Resource
Area and Circumference	Watch this	Complete Check
Sectors (Set 1)	Watch this	Complete Check

Sector area

Remember a sector is part of a circle
Area of the whole circle = $\pi r^2 = \pi \times 6^2 = 36\pi$



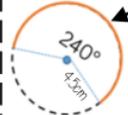
Sector area = $\frac{\theta}{360} \times \text{area of circle}$

$$= \frac{120}{360} \times 36\pi$$

$$= \frac{1}{3} \times 36\pi = \underline{12\pi}$$

Arc length

Remember an arc is part of the circumference
Circumference of the whole circle = $\pi d = \pi \times 9 = 9\pi$



Arc length = $\frac{\theta}{360} \times \text{circumference}$

$$= \frac{240}{360} \times 9\pi$$

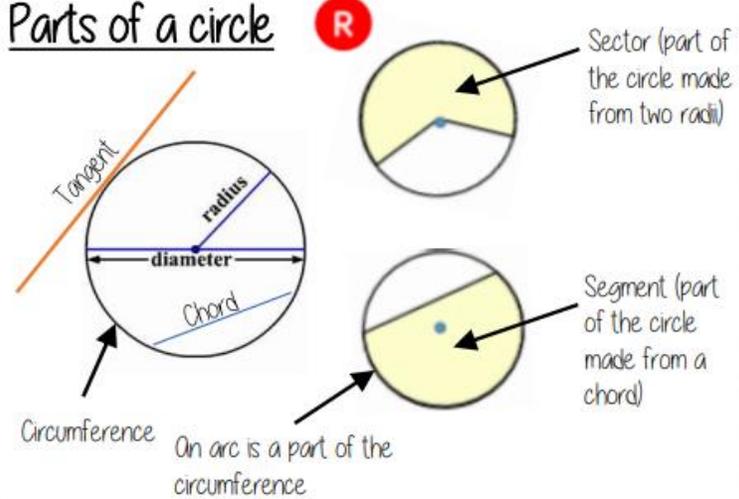
$$= \frac{2}{3} \times 9\pi = \underline{6\pi}$$

Perimeter

Perimeter is the length around the outside of the shape
This includes the arc length and the radii that enclose the shape

Perimeter = $\frac{\theta}{360} \times \text{circumference} + 2r = \underline{6\pi + 9}$

Parts of a circle R



Tangent

radius

diameter

Chord

Circumference

Sector (part of the circle made from two radii)

Segment (part of the circle made from a chord)

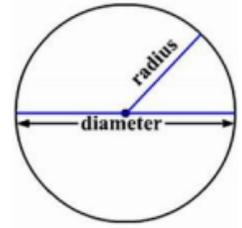
An arc is a part of the circumference

Area of a circle (Calculator)



SHIFT $\times 10^x$

Area of a circle $\pi \times \text{radius}^2$



How to get π symbol on the calculator

It is important to round your answer suitably – to significant figures or decimal places. This will give you a decimal solution that will go on forever!

Knowledge Goals Music

1. Disco		
1	Disco	genre of dance music that originated in African American communities in the 1970s. Influences include funk, jazz and soul music.
2	Musicians	Diana Ross, Bee Gees and Earth, Wind and Fire.

2. Electronic Dance Music (EDM)		
1	EDM	A form of dance music created in the early 1980's, originating in Chicago, USA and created by DJ's and Music Producers.
2	House	A form of EDM started in the 1980s and developed more recently in the 2010s.
3	Musicians	Avicii, Daft Punk and Artful Dodger

3. Grime		
1	Grime music	a genre of EDM created in London in the early 2000s. It was influenced by garage and jungle.
2	Musicians	Skepta, Dizzee Rascal and Stormzy

4. Musical characteristics		
1	Rhyming couplets	Ensuring that the lines of the lyrics rhyme in pairs.
2	Slang	Words used in street talk often used in modern musical styles
3	Four to the floor	A bass / kick drum on every beat of the bar.

5. Music technology		
1	Digital audio workstation (DAW)	A hardware device or software app used for composing, producing, recording, mixing and editing audio
2	Looping	Using music technology to repeat a pattern over and over again.
3	Sampling	A digitally recorded clip of sound from another track, used in a different song.
4	Reverb	An electronically produced echo effect used in both live and recorded music.
5	Multitrack recording	A method of sound recording that allows people to record onto individual tracks, before combining them to create a whole song.
6	Overdubbing	Recording additional sounds onto a track, often to correct previous mistakes.
7	Synthesiser	An electronic musical instrument that uses human made sounds to create music. An example would be a keyboard.
8	Drum machine	An electronic instrument that creates percussion tracks.
9	Roland TR808	An example of an iconic drum machine
10	Layering	Slowly adding more parts into a song to create musical interest.

6. Key Vocab Musical elements		
1	Melody	The main tune, played on instruments or sung.
2	Chords	Two or more notes played at once.
3	Bass line	The lowest part in music, provides the harmonic structure of the music.
4	Riff	A repeated musical pattern used in Rock, Pop and Jazz.

7. Key vocab Song structure		
1	Intro	The section of the music that introduces the song.
2	Verse	A section that repeats in a song, it has the same music, but different lyrics.
3	Chorus	The main section of a song, it will repeat both the lyrics and the music in the same way..
4	Bridge	A section in a song that links two other sections.
5	Instrumental	A section in the music with no lyrics and the instruments contain the melodic interest.
6	Outro	The ending section of a song.

CREDIT SCORE BANDS

by Credit Reference Agency

Credit Bands	experian.	TransUnion	EQUIFAX
VERY POOR	0-560	0-550	0-279
	<i>It's highly likely your credit application will be rejected.</i>		
POOR	561-720	561-565	280-379
	<i>You have a chance of being approved for credit, but are likely to be charged a high interest rate and have a low limit.</i>		
FAIR	721-880	566-603	380-419
	<i>You should be offered reasonable interest rates, but are likely to have a low credit limit.</i>		
GOOD	881-960	604-627	420-465
	<i>You're likely to be approved for credit, but won't necessarily have the best interest rates.</i>		
EXCELLENT	961-999	628-710	466-700
	<i>You're very likely to be approved for competitive credit offers.</i>		

Though the score will differ each credit reference agency uses a rating scale from Very Poor to Excellent.

As they use the same scale it is easy to compare how the different agencies score you by seeing where they place you on this scale.

Knowledge goals: PDev

WHAT DO WE SPEND PERSONAL LOANS ON?

Loans are a great way of funding a large purchase and people take out a loan for many different reasons - from buying a used car to making home improvements

Personal Loans in the UK

Average consumer credit borrowed in October 2014



What is the typical loan term?



Consumer Rights

- 1. Safety**
 The right to safe, effective products that have been tested
- 2. Information**
 The right to information on how to use the products
- 3. Choice**
 The right to have market choices and avoid monopoly
- 4. Voice**
 The right to an opinion about how products are made
- 5. Redress**
 The right to legal action if harmed by a business

A NEW SEGMENTATION FOR RETAIL BANKING SERVICES

		BIG BANKS	TRADITIONAL CHALLENGERS	RETAILERS	SAVINGS & MORTGAGES ONLY	CROWD FUNDING
UK BANKING LICENCES	EXISTING	LLOYDS BANK, RBS, HSBC, NatWest, BARCLAYS, BANK OF SCOTLAND	Yorkshire Bank, HALIFAX, Clydesdale Bank, first direct, Santander, Nationwide, Virgin money, METRO BANK, TSB, The co-operative bank	TESCO Bank, Sainsbury Bank, M&S BANK, Harrods	Charter Savings Bank, paragon, aldermore, BUILDING SOCIETIES	KICKSTARTER, we fund, P2P LENDING, RateSetter, Funding Circle, Zipo
	NEXT GENERATION	CURRENT ACCOUNT ONLY: STARLING	FULL RETAIL PRODUCT MIX: Atom, fidor, M, Open Bank	OTHER: civilisedbank, PRIVATE BANK: Hampden & Co. BANKERS, B2B: OakNorth Bank	LOANS: wonga, amigo, lendable, peachy, Sotsuma, sunny, POUNDS TO POCKET, QuickQuid, PiggyBank	
NEO BANKS - DIGITAL FRONT END	UK	monese, Hello bank!, NUMBER26	Moven, GObank, bankmobile, SIMPLE	PAYMENTS/WALLETS: Google, Apple Pay, PayPal, amazonpayments	CREDIT CARDS: Capital One, aqua, mbna, friid	
	EUROPE			FX PAYMENTS: Currencies Direct, TransferWise		
	US					
	PRE-PAID DEBIT CARDS	osper, acorn account, pocket, ffrees, cashplus, ClearCash	get EVEN, Secure Trust Bank, card one, tuxedo			

NEW UK Consumer Laws* FOR Digital Content Services AND Goods

Effective from **Oct. 2015**

New consumer rights apply to contracts to supply digital content incl. **mobile apps**

Suppliers may be held liable if their digital content causes damage to a device or other digital content - even if the content is given away for free

Check your Ts & Cs

Disclaimers & Limitation of Liability provisions - won't exclude a trader's compliance with certain statutory implied terms

Revisit guidance on Unfair Terms

3 new ones added to the 'grey list' covering:

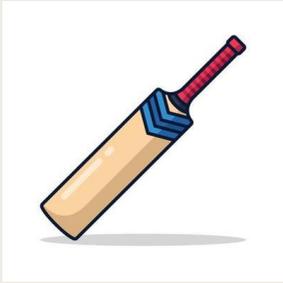
- Change in subject matter
- Exit fees
- Price changes

Don't leave yourself exposed

Check that your business insurance covers any increase in potential liability

*NOTICES & DISCLAIMER
This is a brief high level summary of certain provisions of the UK Consumer Rights Act 2015 (CRA) and is not to be relied upon for any specific circumstances. It is not an exhaustive nor complete guide to the CRA. It is not legal and/or regulatory advice. It has been prepared by Emoney Advice Limited and subject also to its Website Terms of Use. Reproduction without permission is strictly prohibited. Copyright 2015 Emoney Advice Limited.

Knowledge Goals: PE



Cricket

Fielding - I can throw the ball overarm accurately from the deep field with power and accuracy.

Bowling - I can use the correct technique in bowling action with good line & length. Some spin / swing evident.

Batting - I can play attacking and defensive shots depending on the ball bowled.

Game Situations - Bowling is consistently a good length, batting shows sound application in dealing with different deliveries.



*International
Cricket Council*



Rounders

Throwing/Catching – I can throw a rounders ball fairly accurately and consistently to others in a game situation, demonstrating underarm and overarm throws.

Fielding – I can demonstrate the long barrier technique in a game situation sometimes.

Bowling – I can demonstrate several different types of bowling.

Batting – I can consistently hit the ball when it is bowled at me under pressure and it goes a good distance. Occasionally I can place the ball.

Game Situation – I know the rules of the game, and rarely make mistakes. I might be able to umpire part of a game.

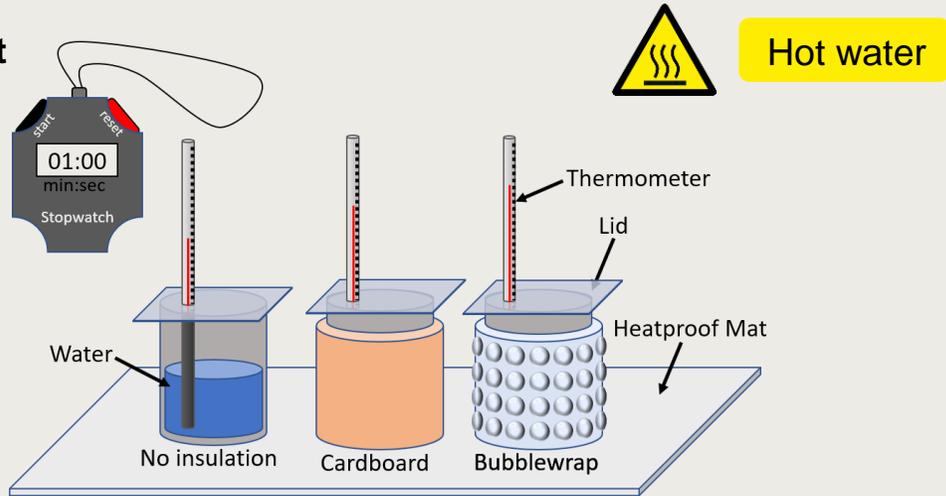


Knowledge Goals: Physics – Key practical

Thermal insulators

Aim To compare the effectiveness of different materials as thermal insulators.

Equipment



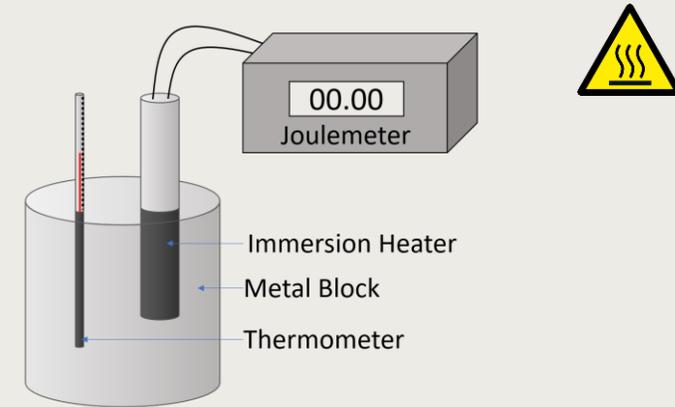
Method

1. Wrap a beaker with an insulating material.
2. Fill the beaker with hot water from a kettle.
3. Put a piece of cardboard over the beaker as a lid. The lid should have a hole suitable for a thermometer.
4. Place a thermometer into the beaker through the hole.
5. Record the temperature of the water in the beaker and start the stopwatch.
6. Record the temperature of the water every 2 minutes for 20 minutes.
7. Repeat steps 1-6, each with a different insulating material.
8. Plot a graph of temperature (y-axis) against time (x-axis) for each material.

Measuring specific heat capacity

Aim To measure the specific heat capacity of a sample of material.

Equipment



Method

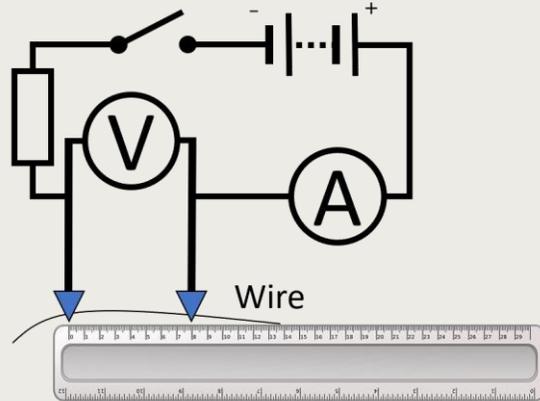
1. Place the immersion heater into the central hole at the top of the block.
2. Place the thermometer into the smaller hole and put a couple of drops of water into the hole to make sure the thermometer is surrounded by hot material.
3. Fully insulate the block by wrapping it loosely with cotton wool.
4. Record the temperature of the block.
5. Connect the heater to the power supply and turn it on for ten minutes.
6. After ten minutes the temperature will still rise even though the heater has been turned off and then it will begin to cool. Record the highest temperature that it reaches and the total number of joules supplied using the joule meter.
7. Calculate the temperature rise during the experiment.

Knowledge Goals: Physics – Key practical

Resistance

Aim To investigate how changing the length of the wire affects its resistance.

Equipment



Method

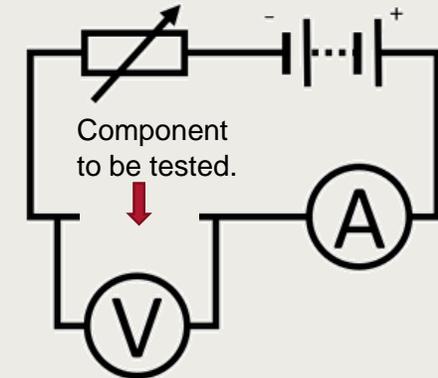
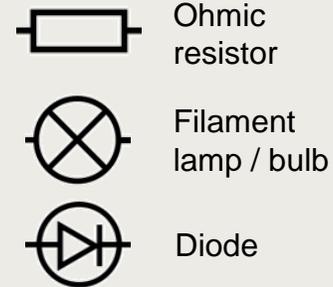
1. Connect the circuit as shown in the diagram above.
2. Connect the crocodile clips to the resistance wire, 90 cm apart.
3. Record the reading on the ammeter and on the voltmeter.
4. Move one of the crocodile clips closer until they are 80 cm apart.
5. Record the new readings on the ammeter and the voltmeter.
6. Repeat the previous steps reducing the length of the wire by 10 cm each time down to a minimum length of 30 cm.
7. Use the results to calculate the resistance of each length of wire by using $R = \frac{V}{I}$, where R is resistance, V is voltage and I is current.
8. Plot a graph of resistance against length for the resistance wire.

Current-potential difference characteristics

Aim To investigate the relationship between current and potential difference for a resistor, bulb and diode.

Equipment

Components to test



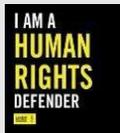
Method

1. Connect the circuit as shown in the diagram.
2. Record the reading on the voltmeter and ammeter.
3. Use the variable resistor to alter the potential difference.
4. Record the new readings on the voltmeter and ammeter.
5. Repeat steps three to four, each time increasing the potential difference slightly.
6. Swap the battery connections and repeat steps two to six.
7. Plot a graph of current against potential difference for each component.

Knowledge Goals: PRE – Living Our Best Lives

Human Rights and Social Justice – Christianity

- All people are children of God
- 'All made in the image of God'
- Agape – selfless and unconditional love and how Christians should treat every human
- Follow the example set by Jesus who himself campaigned for social justice
- Many Christian charities follow the principles of agape 'Love one another.'
- Christians should take a stand against unfairness and injustice
- Follow the example of Martin Luther King Jnr and Oscar Romero



Human Rights and Social Justice – Humanist

- Humanists oppose racism, sexism, torture and persecution
- It is up to the individual to make a fair and just society
- Every human life has dignity
- Humanists were amongst the founders of the UN and they support many human rights organisations

Amnesty International – work to campaign for human rights worldwide. They use non-violent protest. Are against death penalty

Human Rights and Social Justice – Islam

- Muslims are expected to oppose injustice and oppression- judged on this on Judgement day
- The Qur'an and hadith says that equality is really important "equal as the teeth on a comb.'
- Humans have a duty to create a just and fair society. Every human has dignity within Islam – given by Allah
- "Whoever kills one person, it is like they have killed all of humanity. Whoever saves one, it is as if he has saved all of humanity" Qur'an 5:32
- Even criminals should not be mistreated as all deserve dignity and respect.
- The Ummah shows the bond of all Muslims in the world to care for all
- Charity encouraged- zakah and Sadaqah

Christian Aid

- Christian charity that helps anyone in need in 60 countries
- Aims to stop poverty
- Projects, campaigns and fair-trade activities
- Christian Aid Week – fundraising in UK



Islamic Relief

- Islamic charity that helps anyone in need
- Aims to feed the poor and respond in disasters
- Emergency aid, sponsor orphans.
- Zakah – main source of funds



Martin Luther King Jnr

- Baptist minister who fought racism and discrimination in the US
- Started the Civil Rights movement.
- Non-violent protest. Speeches. Marches.
- "Turn the other cheek" "all one in Christ" 'do not seek revenge'

Malala Yusuf

- Islamic human rights campaigner
- Wanted girls in the Swat Valley in Pakistan to have equal access to school as boys
- Used her blog and spoke to the media
- "show forgiveness and speak for justice."
- Shot by the Taliban in the head 2012 (survived)



Oscar Romero

- Born in El Salvador in 1917. Archbishop in 1977
- Spoke out against corruption of the government and the rich. Radio.
- Murdered in the chapel where he was performing mass in 1980.
- We are all 'one in Christ' and should be treated fairly.

<u>Prejudice and Discrimination -Christianity</u>	<u>Prejudice and Discrimination -Islam</u>	<u>Liberation Theology</u> Jesus devoted his life to helping to liberate (free) people from unjust conditions. The belief that Christians should stand up against unfair governments – even when facing death. E.g. MLK and Malala.
<ul style="list-style-type: none"> • All humans created equal "in the image of God" • Moses told to "not deprive the foreigner of justice" – treat refugees and immigrants well • Jesus spent most of his time helping the outcasts of society – women, prostitutes, beggars, lepers • "There is neither Jew, nor gentile, male or female, for you are all one in Christ." Bible • Racism is wrong – Story of the Good Samaritan • Work of Martin Luther King Jnr 	<ul style="list-style-type: none"> • Allah made humans by sending the angels to get different coloured soil – shows diversity • Prophet Muhammad made Bilal, a freed black slave, the first Muezzin (man who says the call to prayer). • The last sermon by Muhammad challenged racism "a white person is not better than a black person, nor a black person better than a white." • The Christian/Muslim Forum works to end racism and promote interfaith dialogue. 	

Freedom of religious expression

France has banned all religious symbols from schools. Is this right? Should religious believers be allowed to wear the symbols of their faith? Crosses? Hijabs? Niqabs (face veils)? Religious people spread their faith by:

- Taking part in a mission to spread their religion to other countries
- Evangelising – trying to convert someone to their faith
- Leaflets (tracts), door-to-door visits, preaching in public places.

Knowledge Goals: Spanish

¿Qué aplicaciones usas? Uso... para... subir y ver videos compartir fotos pasar el tiempo organizar las salidas con mis amigos contactar con mi familia descargar música chatear aprender idiomas controlar mi actividad física publicar mensajes Es / No es... cómodo/a	What apps do you use? I use... (in order) to... upload and watch videos share photos pass the time organise to go out with my friends contact my family download music chat learn languages monitor my physical activity post messages It is / It isn't... handy / convenient	divertido/a peligroso/a práctico/a rápido/a fácil de usar popular útil gratis adictivo/a mi red social preferida una pérdida de tiempo la mejor app Estoy enganchado/a a...	fun dangerous practical quick easy to use popular useful free addictive my favourite social network a waste of time the best app I am hooked on...
--	---	---	--

¿Qué estás haciendo? Estoy... tocando la guitarra hablando por teléfono jugando con mi móvil comiendo pizza tomando el sol esperando a... viendo una peli	What are you doing? I am... playing the guitar talking on the phone playing on my phone eating pizza sunbathing waiting for... watching a film	leyendo durmiendo escribiendo pensando en salir actualizando mi página de Facebook editando mis fotos	reading sleeping writing thinking of going out updating my Facebook page editing my photos
--	---	--	---

¿Quieres salir conmigo? No puedo porque... está lloviendo tengo que... visitar a (mi abuela) cuidar a (mi hermana) quiero... subir mis fotos	Do you want to go out with me? I can't because... it's raining I have to... visit (my grandmother) look after (my brother) I want... to upload my photos	quedarme en casa dar una vuelta ¡Qué pena! ¿A qué hora quedamos? ¿Dónde quedamos? En la plaza Mayor. Vale	to stay at home to go for a wander What a shame! What time shall we meet? Where shall we meet? In the main square. OK
--	--	---	---

¿Qué te gusta leer? los tebeos / los cómics los periódicos las revistas las novelas de ciencia ficción	What do you like reading? comics newspapers magazines science fiction novels	las novelas de amor las historias de vampiros las biografías	romantic novels vampire stories biographies
---	---	--	---

¿Con qué frecuencia lees? todos los días a menudo de vez en cuando una vez a la semana dos veces al mes	How often do you read? every day often from time to time once a week twice a month	una vez al año nunca un ratón de biblioteca un(a) fan del manga	once a year never a bookworm a manga fan
---	--	--	---

¿Qué es mejor, e-books o libros en papel? Los e-books... cuestan menos que los libros tradicionales son más... transportables ecológicos cansan la vista usan batería	What is better, e-books or paper books? E-books... cost less than traditional books are more... portable environmentally-friendly tire your eyes use battery	Las páginas... no tienen números una ventaja una desventaja Leer en formato digital... protege el planeta es más barato depende de... la energía eléctrica	The pages... don't have numbers an advantage a disadvantage Reading in digital format... protects the planet is cheaper depends on... electricity
---	--	--	---

La familia el padre la madre el padrastro la madrastra el hermano la hermana el hermanastro la hermanastra el abuelo la abuela el tío la tía	Family father mother step-father step-mother brother sister step-brother step-sister grandfather grandmother uncle aunt	el primo la prima el sobrino la sobrina el marido la mujer el hijo la hija el nieto la nieta mayor / menor	male cousin female cousin nephew niece husband wife son daughter grandson granddaughter older / younger
---	--	--	---

¿Cómo es? Tiene los ojos... azules verdes marrones grises grandes pequeños Tiene el pelo... moreno castaño rubio rojo corto largo rizado liso ondulado	What is he/she like? He/She has... eyes blue green brown grey big small He/She has... hair dark-brown mid-brown, chestnut blond red short long curly straight wavy	Tiene... pecas Lleva... gafas barba bigote Es... alto/a bajo/a delgado/a gordito/a gordo/a calvo/a moreno/a rubio/a castaño/a pelirrojo/a No es ni gordo/a ni delgado/a	He/She has... freckles He/She wears... glasses a beard a moustache He/She is... tall short slim chubby fat dark-haired fair-haired brown-haired red-haired He/She is neither fat nor thin
--	--	--	---

¿Cómo es de carácter? Como persona, es... optimista pesimista trabajador(a) perezosa/a habrador(a)	What is he/she like as a person? As a person, he/she is... optimistic pessimistic hard-working lazy chatty	tímido/a divertido/a serio/a gracioso/a generoso/a fiel	shy fun serious funny generous loyal
---	---	--	---

¿Te llevas bien con tu familia y tus amigos? Me llevo bien con... No me llevo bien con...	Do you get on well with your family and friends? I get on well with... I don't get on well with...	Me divierto con... Me peleo con...	I have a good time with... I argue with...
--	---	---------------------------------------	---

¿Cómo es un buen amigo / una buena amiga? Un buen amigo / una buena amiga es alguien que... te ayuda te apoya te conoce bien te acepta	What is a good friend like? A good friend is someone who... helps you supports you knows you well accepts you	te hace reír te dice la verdad Conoci a... mi mejor amigo/a hace (cuatro) años tenemos mucha en común	makes you laugh tells you the truth I met... my best friend (four) years ago we have a lot in common
--	---	--	---

