

KNOWLEDGE ORGANISERS

Name:

Form:

Year 9

Half Term 4

Your subjects are in the following order:

English

Maths

Science

Art

Computing

Digital Literacy

Design Technology

Drama

EPR

Food Technology

Geography

History

Latin

Music

PE

Spanish



English

Macbeth

Key characters

Macbeth	Eponymous protagonist, ambitious, ruthless.
Lady Macbeth	Defies expectations, strong and ambitious.
Witches	Supernatural beings, prophecy, could represent conscience.
Banquo	Macbeth's friend, sons prophesized to rule, killed and returns as a ghost.
Duncan	Great King, loves Macbeth at the start, gets killed in Act 2.
MacDuff	Wife and children killed, vengeful, kills Macbeth, born by Caesarean.

Plot

Act 1	Macbeth and Banquo meet the witches, Cawdor executed, Lady Macbeth reads letter and taunts Macbeth, Duncan arrives.
Act 2	Macbeth kills Duncan, Macbeth is crowned, Malcolm flees.
Act 3	Banquo suspects Macbeth, Banquo murdered, Fleance escapes, Macbeth is haunted by Banquo at a banquet.
Act 4	Witches show Macbeth future Kings – Sons of Banquo, Macduff's family murdered.
Act 5	Lady Macbeth goes mad and sleepwalks, Lady Macbeth dies, Macbeth is killed by Macduff and Malcolm is crowned King.

Motifs - write down key quotes that match the motifs

Nature

Light and Dark

Children

Blood

Sleep

Dreams

Key Quotes

Unnatural	Lady Macbeth "Come you spirits...Unsex me here"
Hallucination	Macbeth "Is this a dagger I see before me?"
Cyclical	Macbeth "Blood will have blood".
Guilt / Anxiety	Lady Macbeth: "All the perfumes of Arabia will not sweeten this little hand".
Betrayal of prophecy	Macbeth "I bear a charmed life".

Themes – tick them off when you have seen them in the play

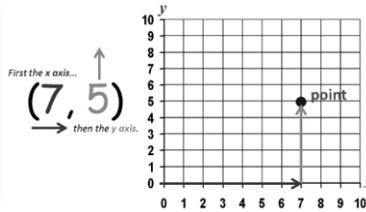
Fate and free will	Is the action pre decided?	<input type="radio"/>
Ambition	The Macbeths' ambition drives the play.	<input type="radio"/>
Appearance and reality	People and events are not always what they seem.	<input type="radio"/>
Supernatural	Witches, ghosts, prophecies.	<input type="radio"/>
Violence	Many battles throughout the play.	<input type="radio"/>

Prior Knowledge

$x = 6$
 ↓ substitute
 $y = 24 - x$
 ↓
 $y = 24 - 6$
 ↓
 $y = 18$

Substitution is the name given to the process of swapping an algebraic letter for its value.

Coordinates are numbers which determine the position of a point or a shape in a particular space (a map or a graph). Points are marked by how far along they are on the x axis (the horizontal axis) and how far up they are on the y axis (the vertical axis).



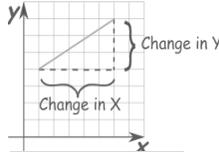
$y = mx + c$

m = gradient c = y-intercept

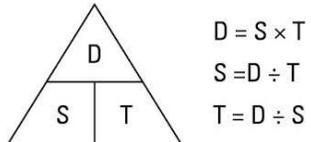
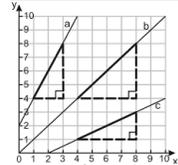
A **linear equation** is an equation that describes a straight line on a graph. You can remember this by the "line" part of the name **linear equation**.

$y = 2x + 5$

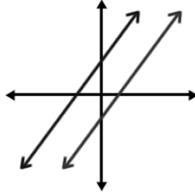
The **gradient** tells us how steep a line is, therefore the bigger the **gradient** the steeper the **line** is.



A positive **gradient** is a straight line which slopes up to the right.
 A negative **gradient** is a straight line which slopes down to the right.

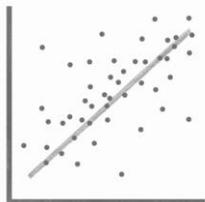


Lines are parallel if they are always the same distance apart (called "equidistant").

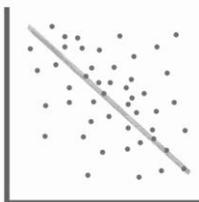


Distance = speed x time

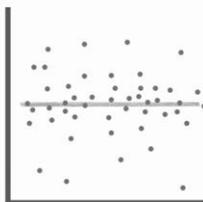
Correlation is used to **describe** the linear relationship between two continuous variables (e.g., height and weight).



Positive Correlation



Negative Correlation



No Correlation



Foundation – Unit 9 - Graphs

Gradient	The steepness of a graph.	positive gradient negative gradient
Linear Equation	Produces a straight line graph.	
Average Speed	$\frac{\text{distance travelled}}{\text{time taken}}$	$S = \frac{4800}{100}$ $S = 48\text{mph}$
Line Segment	Has a start and end point.	
Midpoint	Exactly in the middle of a line segment.	
Rate of Change	Describes how a quantity changes over time.	$\frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$
Velocity	Speed in a particular direction.	Velocity "speed in a given direction"
Y-intercept	Where the graph crosses the y-axis.	
Parallel Lines	Same distance apart and will never cross each other. They have the same gradient.	
Line of best fit	Refers to a line through a scatter plot of data points that best expresses the relationship between those points.	
Trend	A pattern in a set of results displayed in a graph.	
Correlation	Refers to the degree of correspondence or relationship between two variables.	

Prior Knowledge

Work out the value of the expression

$$5x + y$$

If $x = 4$ and $y = 3$

$$5 \times 4 + 3$$

$$20 + 3$$

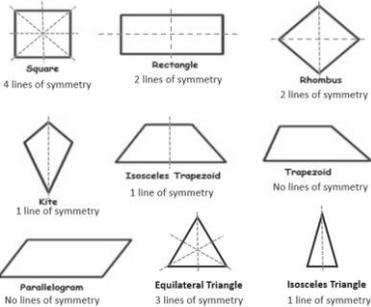
$$23$$

- $\sqrt{1} = 1$ since $1^2 = 1$
- $\sqrt{4} = 2$ since $2^2 = 4$
- $\sqrt{9} = 3$ since $3^2 = 9$
- $\sqrt{16} = 4$ since $4^2 = 16$
- $\sqrt{25} = 5$ since $5^2 = 25$
- $\sqrt{36} = 6$ since $6^2 = 36$
- $\sqrt{49} = 7$ since $7^2 = 49$
- $\sqrt{64} = 8$ since $8^2 = 64$
- $\sqrt{81} = 9$ since $9^2 = 81$
- $\sqrt{100} = 10$ since $10^2 = 100$

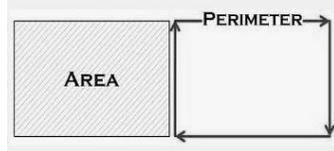
Substitution – replace the letter with a value and complete the calculation.

Factor – a number that does into another number. Eg Factors of 12: 1, 12, 2, 6, 3, 4

Multiple – a number that is in the times table. Eg multiples of 3: 3, 6, 9, 12, 15.....



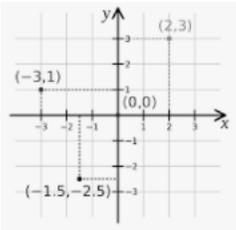
A **line of symmetry** is a **line** that cuts a shape exactly in half. This means that if you were to fold the shape along the **line**, both halves would match exactly.



$$\left. \begin{array}{l} + x - \\ - x + \\ + \div - \\ - \div + \end{array} \right\} -$$

$$\left. \begin{array}{l} + x + \\ - x - \\ + \div + \\ - \div - \end{array} \right\} +$$

Coordinates display the position of a certain point. These positions are marked according to numbers of the horizontal axis (x-axis) and the vertical axis (y-axis).



Expand the brackets

$$2(x + 8)$$

$$2x + 16$$

Factorising is the reverse of expanding brackets.

$$4x + 16$$

4 is a factor of both 4 and 16.

$$4(x + 4)$$

To solve an equation, use inverse operations (and the balancing method) to find the value of 1 unknown variable.

$$y = mx + c$$

m

- This number tells you the gradient/steepness of the line
- The bigger the number, the steeper the line
- If the number is positive, the line slopes upwards
- If it is negative, the line slopes downwards
- Parallel lines have the same gradient

+ c

- This number tells you where the line crosses the y axis
- Its posh name is the y intercept



Foundation – Unit 16 – Quadratic equations and graphs

Expand Double Brackets	Multiply each term in one bracket by each term in the other.	Expand and simplify... $(x + 4)(x + 3)$ $x^2 + 3x + 4x + 12$ $x^2 + 7x + 12$
Square a bracket	Multiply it by itself.	$(5x + 2)^2$ $(5x + 2)(5x + 2)$ $25x^2 + 10x + 10x + 4$ $25x^2 + 20x + 4$
Quadratic Expression	Always has a squared term. It cannot have a power higher than 2. It may also have a term with a power of 1. It may also have a constant.	$ax^2 + bx + c$
Quadratic Function	Has a symmetrical U shape curve called a parabola. A $(-x^2)$ term has a symmetrical n-shaped curve.	
Turning Point	A quadratic curve always has a maximum or minimum turning point. This is where the graph changes direction.	
Factorise quadratics	To factorise a quadratic $ax^2 + bx + c$, you need two numbers whose product is c and whose sum is b .	$x^2 + 4x + 4$ $(x + \quad)(x + \quad)$ Factors of 4: 1, 2, 4 $(x + 1)(x + 4)$ Gives us $1 \times 4 = 4$ and $1x + 4x = 5x$ (wrong) $(x + 2)(x + 2)$ Gives us $2 \times 2 = 4$ and $2x + 2x = 4x$
Difference of Two Squares	A quadratic expression with two squared terms, and one is subtracted from the other.	$a^2 - b^2 = (a + b)(a - b)$ $a^2 - b^2$ $x^2 - 25$ $x^2 - 16$ $a^2 - 100$ $(ab)^2 - (xy)^2$

Prior Knowledge

Inequalities are the relationships between two expressions which are not equal to one another.

Equality and Inequality



$=$ equal

\neq not equal

$>$ greater than

$<$ less than

\geq greater than or equal

\leq less than or equal

Factors are numbers that divide exactly into another number.



Factors of 12: ① ② 3, ④ 6, 12

Factors of 16: ① ② ④ 8, 16

④ is the Greatest Common Factor

Key Concepts

Higher – Unit 9 – Equations and Inequalities

Solving an equation or inequality	Means find the values for the unknown that fit	$\begin{array}{r} x + 17 = 20 \\ -17 \quad -17 \\ \hline x = 20 - 17 \\ x = 3 \end{array}$
Roots of a function	Solution when it is equal to zero.	
Quadratic expression	In the form ax^2+bx+c , where a, b and c are numbers.	$\begin{array}{c} \downarrow \quad \downarrow \quad \downarrow \\ qx^2 + bx + c \\ \downarrow \quad \downarrow \quad \downarrow \\ 2x^2 + 4x + 5 \end{array}$
Quadratic formula	Can be used to find solutions to a quadratic equation $ax^2+bx+c = 0$	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Perfect Squares	A number made by squaring a whole number.	$(x+2)^2, (x-1)^2$ and $(x+\frac{1}{2})^2$
Simultaneous Equations	When there are two unknowns, you need two equations to find their values.	$\begin{array}{l} 2x + y = 12 \\ 6x + 5y = 40 \end{array}$
Elimination	Solving simultaneous equations – making the coefficients of one variable the same in both equations, and then adding or subtracting to eliminate this variable.	<p>Use the elimination method to solve the given simultaneous equations</p> $\begin{array}{l} 5x + y = 20 \quad (*) \\ 4x + 6y = 37 \quad (**) \end{array}$ <p>Substitute $x = 3$ into $(*)$</p> $\begin{array}{l} 5(3) + y = 20 \\ 15 + y = 20 \\ y = 20 - 15 \\ y = 5 \end{array}$ <p>$\therefore x = 3, y = 5$</p>
Substitution	Solving simultaneous equations – substituting and expression for x or y from one equation into the other equation.	$\begin{array}{l} ① \quad 3x + 2y = 21 \\ \quad \quad y = x + 3 \end{array}$ <p>A) Substitute y and solve to find x.</p> $\begin{array}{l} ① \quad 3x + 2(x + 3) = 21 \\ 3x + (2x + 6) = 21 \\ 5x + 6 = 21 \\ 5x = 15 \\ x = 3 \end{array}$ <p>B) Input x to find y.</p> $\begin{array}{l} ② \quad y = (3) + 3 \\ \quad \quad y = 6 \end{array}$
Surd	When we can't simplify a number to remove a square root (or cube root etc) then it is a surd.	<p>Example</p> $\begin{array}{l} \text{Solve } (x+2)^2 = 7 \\ x+2 = \pm\sqrt{7} \\ x = -2 + \sqrt{7} \\ \text{or } x = -2 - \sqrt{7} \end{array}$ <p>Square root both sides. ± means 'plus or minus'. +√7 gives one solution. -√7 gives the other solution.</p>

When a value is square rooted, the answer can be positive or negative.

Factorising is the reverse of expanding bracket. The first step of factorising an expression is to 'take out' any common factors which the terms have.

$2 \times 2 = 4$
positive \times positive = positive

$-2 \times -2 = 4$
negative \times negative = positive

$4x+16$
4 is a factor of both 4 and 16.

$4(x+4)$

Solve a quadratic by factorising:

- Step 1: Rearrange the given quadratic so that it is **equal to zero**
- Step 2: Factorise the quadratic
- Step 3: Form two linear equations and solve each.

$$\begin{array}{l} x^2 + 2x - 3 = 0 \\ (x-1)(x+3) = 0 \\ \swarrow \quad \searrow \\ x-1 = 0 \quad x+3 = 0 \\ x = 1 \quad \quad x = -3 \end{array}$$

BIDMAS

() x^y \div or \times $+$ or $-$

Brackets Indices Divide & Multiply Add & Subtract

Order of Operations

Substitution is the name given to the process of swapping an algebraic letter for its value.

Evaluate the expression $h + 5$, for $h = 3$

$h + 5$ ($h=3$)

$= 3 + 5$

$= 8$ ✓

A bracket squared means the bracket times the bracket, and then expand it as you normally word for two brackets.

$\cdot (a+b)^2$
 $= a^2 + 2ab + b^2$

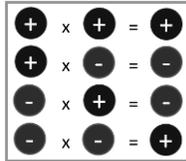
$\cdot (a-b)^2$
 $= a^2 - 2ab + b^2$

Prior Knowledge

Integer – a whole number can be positive or negative

... -4, -3, -2, -1, 0, 1, 2, 3, 4 ...

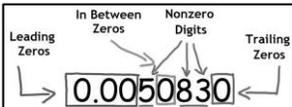
Negative number: a real **number** that is less than zero.



Negatives: multiplying and dividing:
1. When the signs are different the answer is **negative**.

2. When the signs are the same the answer is **positive**.

Significant figures – the digits that carry meaningful contributions



Factors – Numbers that divide into a number exactly.

Highest Common Factor (HCF): the biggest factor in both lists.

Multiples – Extended times tables

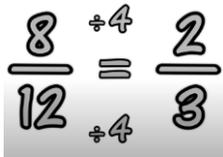
Lowest Common Multiple (LCM): the smallest number in both lists.

BIDMAS – The order in which we do calculations. **Brackets** first then **indices**. **Division and multiplication** same time left to right. Finally **Addition and subtraction** same time left to right.

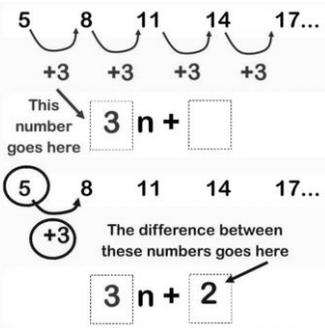
- B (brackets)
- I indices²
- D ÷ division
- M multiplication x
- A + addition
- S subtraction -

Square root – Finding a number that times itself to given that number. You can have positive and negative square roots.

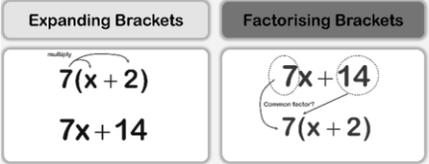
To simplify a fraction, divide the top and bottom by the highest common factor.



The nth term of an arithmetic sequence is common difference x n + zero term.



Expand brackets: multiply each term inside the bracket by the term outside.



Factorise: divide each term by the highest common factor, writing the HCF outside the bracket.

Key Concepts

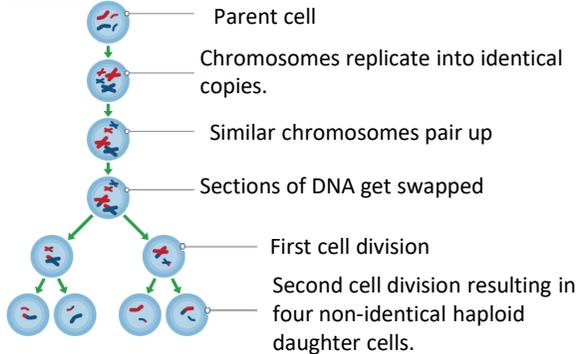
Higher – Unit 2 - Algebra

Order of Operations	BIDMAS – The order in which we do calculations. Brackets first then indices . Division and multiplication same time left to right. Finally Addition and subtraction same time left to right.	Brackets Indices Division Multiplication Addition Subtraction ORDER ↓
Base numbers	This is the number that is too the power	Base 2^7
Multiplying powers	Add the indices if base numbers the same	$5^3 \times 5^4 = 5^{3+4} = 5^7$
Dividing powers	Subtract the indices if base numbers the same	$5^6 \div 5^2 = 5^{6-2} = 5^4$
Negative in a power	Means 1 over	$6^{-3} = \frac{1}{6^3} = \frac{1}{216}$
Anything to the power zero	Is one	$3^0 = 1$ $a^0 = 1$
A unit fraction in a power (e.g. $\frac{1}{2}$)	Means a root. A $\frac{1}{2}$ means the square root, $\frac{1}{3}$ means the cube root etc...	$16^{\frac{1}{2}} = \sqrt{16} = 4$
A fraction in the power (e.g. $\frac{2}{3}$)	Use the denominator for the root, and then the numerator is a power. E.g. for $\frac{2}{3}$ do the cube root and then square it.	$27^{\frac{2}{3}} = (\sqrt[3]{27})^2 = 3^2 = 9$
Expanding double brackets	Multiply each term in the first bracket by each term in the second.	$(x+5)^2 = (x+5)(x+5) = x^2+10x+25$
Consecutive Integers	One after the other.	15, 16
Even Integers	Any even integer is in the 2 times table and can be written as $2n$.	Work out the value of the expression $5x + y$ If $x = 4$ and $y = 3$ $5 \times 4 + 3$ $20 + 3$ 23
Substitution	Swapping an algebraic letter for its value.	
Standard Form	Used to write big numbers quickly or small numbers quickly.	(Between 1 and 10) x 10 ^{power} .
Linear Sequence	A list of numbers that increases or decreases by the same amount each time.	$2, 4, 8, 16, 32$ $\times 2$ $\times 2$ $\times 2$ $\times 2$
Geometric Sequence	Terms increase (or decrease) by a constant multiplier.	$-6, 1, 8, 15, 22$ $+7$ $+7$ $+7$ $+7$
Arithmetic Sequence	Terms increase (or decrease) by a fixed number (common difference).	

Todmorden High: Science CB3 Genetics

Key term	Definition
chromosome	Long molecule of DNA packed up with proteins.
diploid	A cell or nucleus that has two sets of chromosomes.
haploid	A cell or nucleus that has one set of chromosomes. Gametes are haploid.
gamete	A haploid cell used for sexual reproduction (sperm or egg cell).
meiosis	A form of cell division in which one parent cell produces four haploid daughter cells.
gene	Section of DNA, which often contains instructions for a protein.
genome	All the DNA in an organism. Each body cell contains a copy of the genome.
allele	Different version of a gene.
genotype	The alleles for a certain characteristic that are found in an organism
phenotype	The characteristics that a certain set of alleles produce.
dominant	Allele that will always affect the phenotype
recessive	Allele that will only affect the phenotype if the other allele is also recessive. It has no effect if the other allele is dominant.
homozygous	When both the alleles for a gene are the same in an organism.
heterozygous	When both the alleles for a gene are different in an organism.

Meiosis

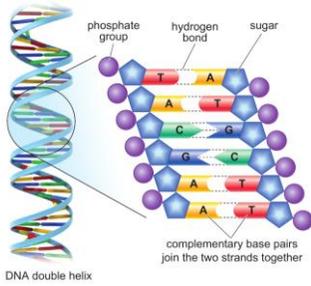


DNA

There are four DNA bases:

- Adenine
- Thymine
- Guanine
- Cytosine

A always pairs with T
G always pairs with C



DNA is made of many similar units joined in a chain, therefore is a polymer.
 Hydrogen bonds holding two strands together are weak forces of attraction.

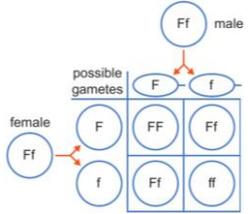
Human genome project (2003)

It revealed that there are variations between people, but over 99% of DNA bases in different people are the same.
 Mapping a person's genome can:

- Indicate risk of developing genetic diseases
- Identify which medicines might be best to treat an illness (personalised medicine).

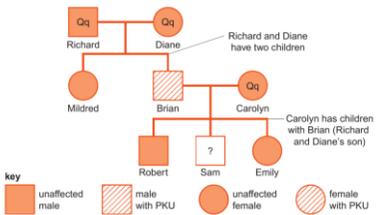
Inheritance

Genetic diagrams and punnet squares show the possible combination of alleles when organisms breed.



They can be used to predict the phenotypes of offspring.

Family pedigree charts show how genotypes and resulting phenotypes are inherited in families.



Gene mutation

A change in a gene that creates a new allele.
 A change to DNA sequence due to mistakes during DNA replication. This can be random or caused by mutagenic agents (radiation).
 Some gene mutations change the protein produced therefore alter the phenotype. Some mutations have no effect on the phenotype.
 Only mutations in gametes are passed on to offspring.

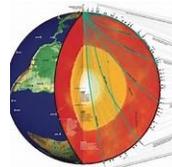
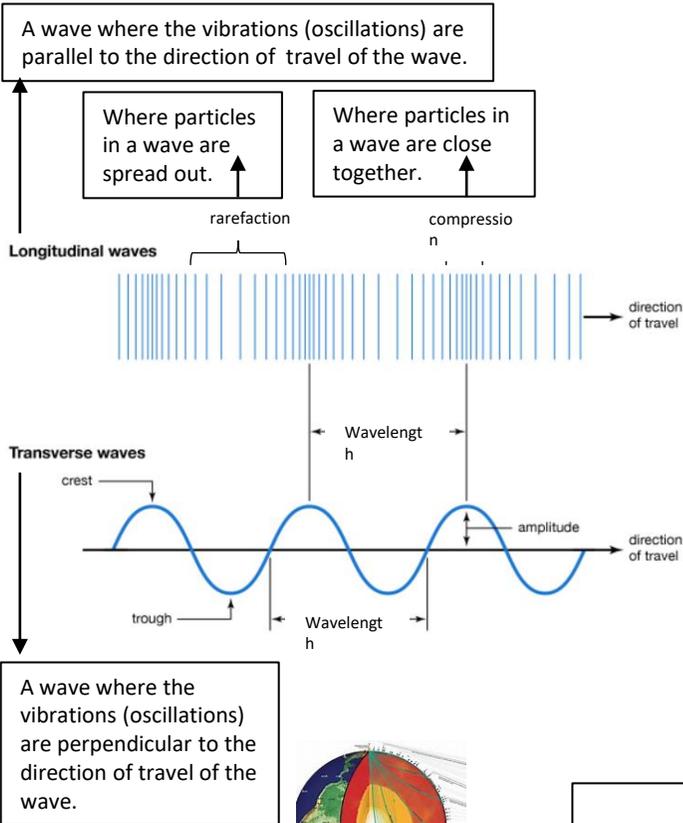
Variation

Genetic variation: caused by alleles inherited through sexual reproduction.
Environmental variation: caused by surroundings (changes that are changed by the environment during life of individual are acquired characteristics.)
Discontinuous variation: where the data can only take a limited set of values.
Continuous variation: where the data can be any value in a range.

Todmorden High: Science Year 9 Topic CP4 Waves

Key term	Definition
Wavelength	The distance between two similar points on a wave, usually measured in meters, m. It has the symbol lambda, λ .
Frequency	The number of waves that pass one point in every second. A wave travelling at the same speed with a longer wavelength will have a lower frequency. This has units of Hertz, Hz.
Wave velocity	The 'speed' at which a wave travels, this is measured in m/s.
Period	The amount of time it takes for one complete wavelength to pass one point. $1/\text{period} = \text{frequency}$
Wavefront	The imaginary surface drawn to show the vibration of a wave
Water wave	An example of a transverse wave. A duck would just bob up and down, not move along.
Sound wave	An example of a longitudinal wave. The air particles vibrate in compressions and rarefactions.

Equations to Learn. There are 2!	
$v = f \times \lambda$	V = wave speed, m/s F = frequency, Hz λ = wavelength, m
$v = x / t$	V = wave speed, m/s x = distance, m t = time, s

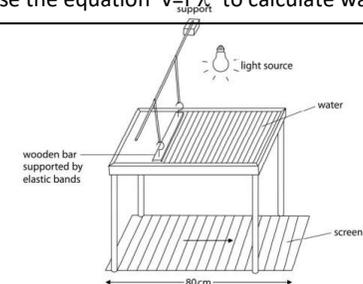


Seismic waves (earthquakes) can be **longitudinal** or **transverse**.

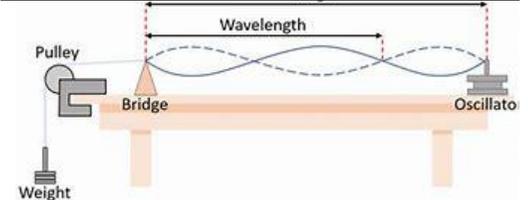
Core Practical – Measuring waves

Practical 1- Measuring waves in a liquid

1. Use a ripple tank to make waves, at specific frequency or Count the number of waves in 10 s and divide by 10 to provide frequency.
2. Take a photograph of the waves with a ruler in the shot to measure the wavelength.
3. Use the equation $v=f\lambda$ to calculate wave speed.



Both practicals are difficult as the waves oscillate quickly and do not work effectively for all frequencies. They can only be used to measure transverse waves.



Practical 2- Measuring waves in a solid

1. Use a string and oscillator to setup a standing wave in a string.
2. Measure the wavelength (peak to peak = $\frac{1}{2}$ wavelength)
3. Record the frequency from the oscillator.
4. Use the equation $v=f\lambda$ to calculate wave speed.

Databases

KEY VOCABULARY	
Database	Large collection of data. Can be paper or computerized.
Field	Single piece of data about a person or an object.
Record	All of the data about a person or an object.
Table	Contains a set of database records.
Query	A search result based on specific criteria.
Form	User-friendly way to enter data into a database.
Validation	Check to see what has been entered is allowable.
Data Type	Tells the database how you want the data to be stored.
Primary Key	Field within a database which enables every record to be uniquely identified.

Data types

Type	Description	Example
Number	Can be positive, negative and decimals.	2.56 (Average number of thefts)
Currency	Number including monetary values.	£2.00 (Price)
Boolean	Value that can either be true or false.	Yes (Do you have food allergies)
Auto number	Generates a unique number.	14526 (Student ID Number)
Date and time	Date and times in different formats.	05/06/10 (Student Date of Birth)

Advantages and disadvantages of computerised databases

Advantages:

- Easy to make back up copies.
- Changes are updated automatically.
- Easy to sort data into order e.g. alphabetically.
- Search thousands of records quickly.

Disadvantages:

- Can be difficult to set up and you may have to get a professional to make it.
- Can be accessed and changed illegally (hacked).
- You need to have a computer.

Real world examples



Patient Records



Pupil Data

Online product list

amazon



Police database

EPR Y9 Christian Belief

Atonement	Paying off the debt of sin/ making up for something .
Crucifixion	A Roman method of punishment/ the way Jesus was killed.
Denomination	A type of Christian IE Catholic/Protestant/Baptist/Methodist/ Pentecostal.
Eucharist	Holy Communion that has become the actual body and blood of Jesus through transubstantiation.
Genesis	The first book of the Bible. Includes Creation and Adam and Eve.
Messiah	The anointed one who came to save.
Grace	The idea that God loves us even though we don't deserve it.
Ministry	When Jesus performed miracles and taught people through parables.
Nativity	The who birth story of Jesus in including the annunciation through Gabriel and the incarnation.
Incarnation	When God became flesh (Jesus) .
Salvation	Being saved from sin (can be done through grace of the law of God).
Trinity	The idea that God is 3 persons in 1 (Father, Son and Spirit). Consubstantial (one substance).
Eternal	Has no beginning or end.
Omnibenevolent	God is all loving.
Personal	God wants us to have a personal relationship with him.
Judgement Day	The day when our bodies will be raised up and God will send us to heaven, hell or purgatory.
Resurrection	When Jesus came back to life.
Immanent	God is with us 'here and now'.
Transcendent	God is beyond time and space and existed before it.

Key Quotes

Book of John (Bible)

'In the beginning was the word...the word was God...through him all things were made.'

Genesis

God made the world in '7 days' ex nihilo.

'Let there be light'

Creation is God's 'handiwork'

'The Spirit of God hovered over the water'

God 'walked in the Garden' (of Eden) with Adam and Eve.

Exodus

Moses Saw the back of God on Mt. Sinai-
God 'passed before' Moses.

Jesus

Hell is the 'gnashing of teeth' and the 'lake of fire'.

'love your neighbour as yourself' (Greatest Commandment/ Good Samaritan)

'Now you are in torment' (Lazarus and the Rich Man).

'Today you will be with me in paradise' (Jesus to the Penitent Thief).

St Paul

At the Rapture we will be 'snatched away.'

Key terms

Typography	The design of lettering and the layout of type on printed or digitally published media.
Branding	Creating a unique name and image for a product.
Illustration	A hand or digitally created image which explains a product or publication.
Image manipulation	Editing and changing the properties of a digital graphic using graphic software.
Aesthetics	The look, style or visual appeal of a product.
Bitmap	A digital image made up of pixels.
Vector	A digital drawing made using paths which does not change when scaled up or down.
DPI	Dots per Inch.
72 DPI	Images for the web.
300 DPI	Images for print.
PPI	Pixels per inch.
Raster	The same as a bitmap.
Lossy Compression	Data is removed from the image to make a smaller file size.

Images are represented pixels (Picture Elements). TVs and monitors produce pixel colours using Red, Green and Blue light (RGB) All screen colours can be produced just from RGB

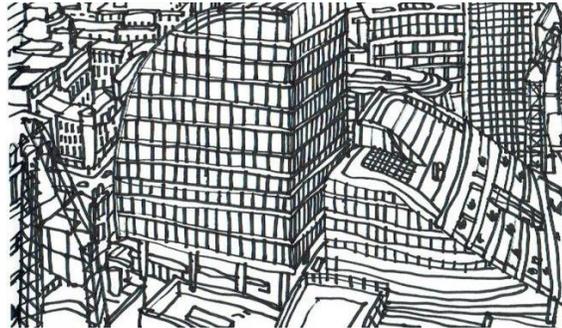
Image Type	Advantages	Disadvantages
JPG	Compresses well, creates smaller files sizes, reproduces millions of colours.	Lossy file format. Variable picture quality.
TIFF	Lossless file format Reproduces millions of colours Sharpe edges to images.	Large file. Limited compression. Doesn't support transparency.
GIF	Lossless file format. Reproduces millions of colours. Excellent transparency in images.	Compresses well. Only 256 colours.
PNG	Lossless file format. Millions of colours.	Uncompressed. Large file size.
BMP	Works in many devices. Millions of colours. Lossless file format.	Uncompressed. Large File format.
File type	Advantages	Disadvantages
.EPS (vector)	Most common vector type. Standard for sharing in print publishing industry.	Not widely supported in editing software. Generally Adobe only software.
SVG (vector)	Scalable without image quality reduction. International standard for vector graphics. High quality printing possible. Good web browser support.	Not widely supported in software. Files sizes can be large wit many elements.
PDF (vector)	Widely supported by many devices. Free to view PDF files. Small file size.	Not free to edit PDF files. Text difficult to edit, text is treated as images.
.AI (vector)	Scalable without image quality reduction. Industry standard for professional vector graphics.	Requires Adobe software to edit. Cannot be viewed on websites

Year 9 - Architecture

During this topic you will be learning about the artwork of James Hobbs. James Hobbs creates images of urban landscapes.

He simplifies scenes down to the minimum amount of detail, while retaining recognisable features of the places and things he draws. He works a lot in black pen and doesn't apply tone or shading.

Although he doesn't apply tone, Hobbs's work is still accurate. The buildings in his work still display a correct depiction of the proportion and scale. Hobbs's work is monochromatic this means that it is in black and white or varying tones of the same colour.



Important Vocabulary

Sketch - to press down lightly with your pencil.

Tone - the particular quality of brightness, deepness, or hue of a shade of a colour.

Proportion - adjust or regulate areas of your drawing so that it has a particular or suitable relationship to the rest of your work.

Scale - the relative size or extent of something.

Weight of line - thickness or thinness of a line.

Cross Hatching - A shading technique where lines are overlapped to create the illusion of tone.

Hatching - Shading with closely drawn parallel lines.

Composition - The considered layout of a piece of work.

Monochrome - displaying images in black and white or in varying tones of only one colour.

Colour Wheel - a circle with different coloured sectors used to show the relationship between colours.

Complimentary colours - colours that opposite on the colour wheel.

Harmonious colours - colours that are next to each other on the colour wheel and are easily blended.

Refine - to neaten up your work, to add the finishing touches.

How To Create A James Hobbs Inspired Monoprint

1. Firstly, you will roll a very thin layer of ink out onto a plastic sheet.
2. You will need a printed photograph of a building and a piece of plain paper the same as the printed photograph. Masking tape these two pieces of paper together with the photograph on top.
3. Lightly place these two pieces on top of the thin layer of ink. Do not press it down.
4. Using either a pencil or a pen, trace the outline of the building clearly and accurately.
5. Lift the paper up to show your monoprint of the traced building.
6. You will then add colour to your mono print by using harmonious tones with water colour.

PE

TABLE TENNIS

Forehand Serve

The tennis serve is the shot selected to begin a point in tennis. A table tennis serve can be hit either forehand or backhand. The ball must be thrown up from a flat palm into the air to a minimum height of six inches and visible to their opponent at all times.

Stage one

Stand in position on the balls of your feet, with knees slightly flexed. Face sideways with your shoulder pointing towards the target. Hold the ball in front of your body with left hand, right hand held back. Body weight should be on the back foot. Keep low.

Stage two

Throw the ball gently into the air (about 6 inches) with the palm of your hand. As the ball begins to drop, hold a forward stance and strike the ball flat with a fast arm in the middle of the ball. Transfer body weight from back to front foot.

Stage three

Follow through with the bat pointing towards the intended target. Return back to ready position for the next shot.

Forehand Drive

A forehand drive in table tennis is an offensive stroke that is used to force errors and to set up attacking positions. A successful shot should land close to your opponent's baseline or side-line.

Stage one

As the ball is returned, stand in position on the balls of your feet, with knees slightly flexed. Face sideways with your shoulder pointing towards the target. Body weight should be on the back foot.

Stage two

When ready to strike the ball, point your free arm towards the ball. At impact, rotate your body quickly to face forwards. Aim to hit the ball at its highest point. Transfer body weight from back to front foot.

Stage three

Follow through with the bat pointing towards the intended target. Return back to ready position for the next shot.

Forehand Push

A forehand push is a difficult defensive shot that requires the player to strike downwards on the back and underneath the ball to create backspin. When performed correctly, a forehand push is used to change the pace of an exchange or to return the ball in a very low manner.

Stage one

Stand square to the table in slight position and keep your feet shoulder width apart. Slightly flex your knees, leaning forward and hold your arms out in front. Keep close to the table.

Stage two

When ready to strike the ball, draw the bat backwards to the side of the body (strongest side). Hold the bat in an open angle with a straight wrist and your playing arm just in front of the body.

Stage three

On impact, bring the arms forward and ensure that power comes from the elbow and forearm (it is not a swing shot). Aim to hit the ball at its highest point. Transfer body weight from back to front foot.

Stage four

After impact, point the bat to where you want to hit the ball. Ensure that your arm does not swing across your body to the left. Return back to ready position for the next shot.

Forehand Smash

The forehand smash is a fast, hard and powerful stroke that aims to force the opponent away from the table or to win a point outright. However, the shot is not always about force and requires the player to use good timing, technique and precision simultaneously.

Stage one

As the ball is returned, stand in position on the balls of your feet, with knees slightly flexed. Face sideways with your shoulder pointing towards the target. Body weight should be on the back foot.

Stage two

When ready to strike the ball, point your free arm towards the ball. Raise the racket to a high position to generate downwards and forwards power.

Stage three

As the ball bounces off the table, rotate your body quickly to face forwards. Aim to hit the ball at its highest point. Transfer body weight from back to front foot. Return back to ready position for the next shot.

Block

The block shot is a defensive stroke that allows a player to use the speed of their opponent's shot against them. It needs to be completed straight after the bounce to ensure that the player maintains control of the ball.

Stage one

Stand square to the table in slight position and keep your feet shoulder width apart. Slightly flex your knees, leaning forward and hold your arms out in front. Keep close to the table.

Stage two

When ready to strike the ball, draw the bat backwards to the side of the body (strongest side). Hold the bat in an open position with a straight wrist and your playing arm just in front of the body.

Stage three

On impact, bring the arms forward and ensure that power comes from the elbow and forearm (it is not a swing shot). Aim to hit the ball at its highest point. Transfer bodyweight from back to front foot.

Stage four

After impact, point the bat to where you want to hit the ball. Ensure that your arm does not swing across your body to the left. Return back to ready position for the next shot.

Drama

Features of Kneehigh's work:

Adaptation.
Archetypal characters.
Chorus.
Inventive use of props.
Physical theatre.
Puppetry.
Dance.
Song/music.
Audience interaction.
Pre-show.
Multi-role.
Comedy.

Kneehigh's Beliefs:

The script is only a starting point.
The work should be playful.
Everyone contributes to rehearsals.
Use the skills and talents of your company.
Produce work for non theatre-goers.
The work should be relevant to modern issues.

Greek Theatre:

Performed in amphitheatres.

Only male actors.

Originally, plays were just a Chorus – a group of 50 speakers who recited a story in verse.

Traditional drama really began when an actor named Thespis had the idea for one person to break away from the chorus and reply to what they said.

The Chorus would narrate the drama and comment on what was happening. They would be asking the questions the audience would want to ask.

Masks helped to amplify actors' voices, communicate the main emotion and gender of the character.

Performance fundamentals:

- Be safe.
- Be seen.
- Be heard.

Stage positions are from the performer's point of view.

Job title	Responsibilities
Puppeteer	Manipulates the puppets so that they look like they are alive.
Director	Has the overall vision for the production. Auditions and casts production. Tells the cast what to do vocally and physically (blocks the scenes). Runs rehearsals and gives notes to actors. Liaises with designers.
Playwright	Writes the play, including characters, plot and stage directions.
Musical Director	Leads the orchestra. In charge of all music in the production.
Actor	Auditions. Learns lines/songs/dances and attends all rehearsals. Performs the show.

Terminology

- Food poisoning
- Contamination
- Religious diets
- Factory farming
- Food poverty
- Food bank
- Halal
- Kosher
- Free Range
- Organic
- Bacteria
- Onset time

Food Poisoning

Main bacteria:

Salmonella, E-Coli, Campylobacter, Staphylococcus Aurous, Clostridium Botulinum.

Key symptoms

Nausea, vomiting, diarrhoea, stomach pain, fever, tiredness, loss of appetite.

Onset time

From consumption to first symptom. Different for each bacteria - can range from a few hours to a few days.

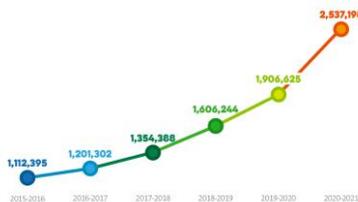
Vulnerable groups (risk of serious illness)

Elderly, young children, pregnant women, immune compromised individuals.

Food Poverty

Where an individual is unable to obtain or buy food and maintain good health.

Food bank usage over the last 5 years



Religious dietary rules

Islam	Meat must be halal. Fast during Ramadan. No pork or alcohol allowed.
Judaism	Abide by Kosher rules and slaughter. Meat and dairy must be avoided together.
Buddhism	Mainly vegetarian. Avoids alcohol. Some fast between noon and sunrise of the following day.
Sikhism	Mainly vegetarian. Do not overindulge – eat only what is required. Not allowed other religiously slaughtered meat.
Christianity	No strict rules – some denominations are stricter. Lot of symbolism with food – blood (wine) and body (bread) of Christ.

Types of factory farming

Battery Farming	Large barns, no natural light, short life span, crowded conditions. Increased incidence of death and disease. Cheaper meat.
RSPCA Assured	Large barns, less crowded, access to better food, access to stimulation, less disease and death. Slightly longer lifespan.
Free Range	Access to outside, medical care, better food, far less crowded, longer life span, more expensive.
Free Range Organic	Same as free range but not given antibiotics for health and given organic food.

Year 9 Geography: Cotton Investigation

Key Term

Gross National Income per Capita (GNI per capita).

This is the total amount of money a country makes divided by the total population.

A High Income Country is set at greater than \$17,000.

A Low Income Country is below \$1,300.

A Middle Income Country is between \$1,300 and \$17,000.

Stage 1. Production

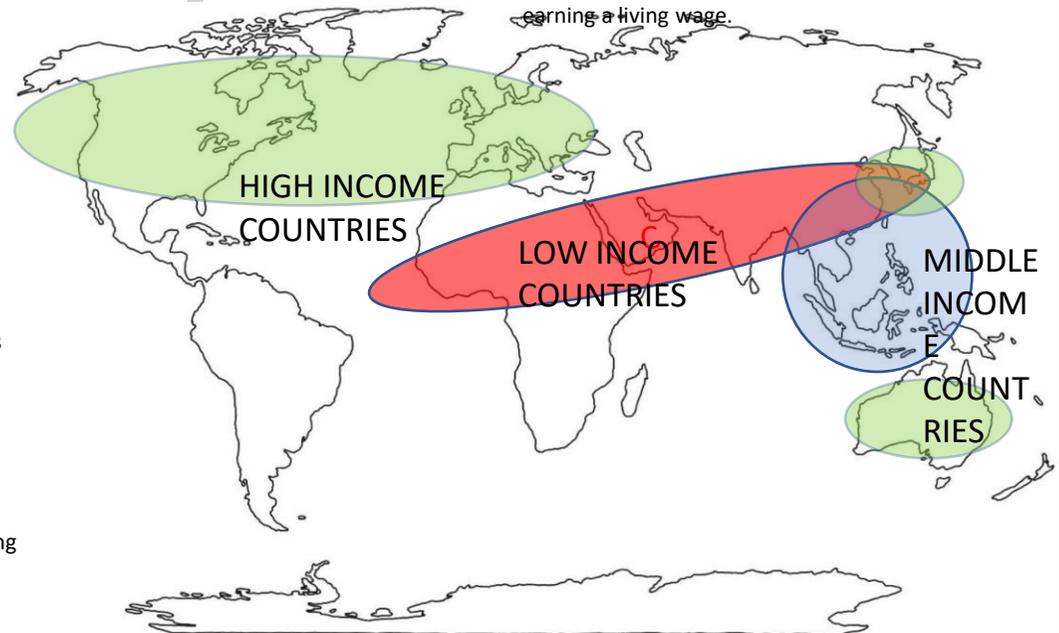
Primary Industry	The stage involved with the extraction of raw materials, in this case, cotton farms.
Countries involved	India, Burkino Faso, Mali and the poorest regions of China.
Child labour	Large cotton companies exploit poor population in India by using child labour, sometimes buying children as slaves.
Exploitation of poor farmers	Large cotton companies exploit West African farmers by paying them less – on average they receive \$100 less per ton than the rest of the world.
Living conditions	This is the poorest paid sector. Families are starving, not sure if they will be able to eat from day to day. West African farmers need their children to work on the farm to make sure enough money is earned to buy food.

Stage 2. Manufacturing

Secondary Industry	This stage involves the production of goods, in this case clothing, bedding etc.
Countries involved	Indonesia, Bangladesh, India, China, Vietnam, Thailand.
Multiplier effect	The spiralling improvement in a country's economy that starts with manufacturing.
Sweatshops	Cramped, dangerous factories which exploit workers with low wages.
Rana Plaza	The Bangladesh sweatshop making clothes for Primark and Asda that collapsed, killed over 1000 people.
Nike in Indonesia	An example of a Trans National Corporation exploiting cheap labour and poor environmental laws to make as much profit as possible.

Stages 3 & 4

Tertiary Industry	Sales and services.
Quaternary Industry	Digital, high tech, space age production.
Countries involved	USA, Japan, Germany, UK, Australia.
Profit from major companies	Nike makes \$35billion in profit from global sales.
Hypocrisy of Nike	They advertise as a company that represents human empowerment, but exploit people and the environment when they can to maximise profit.
Consumerism/ Fast fashion	The ideology that makes people want to continue buying things, long after they have what they need.
'Someone is paying for cheap clothing'	A £5 pair of jeans will have been paid for by someone's freedom, or means the worker isn't earning a living wage.



PE - Subject Knowledge Organiser - Football

Short pass

A short side foot pass enables a team to quickly pass a ball and help maintain possession. It is used for accuracy.

- Move parallel to the ball and place your non-kicking foot to the side of the ball.
- Keep your eye on the ball until you have it under your control.
- Look up to see where is the best place to pass it.
- On selection of your pass, maintain a strong body position.
- Swing your kicking foot through and strike the ball with the inside of your foot.
- Aim to hit the middle of the ball to ensure it stays close to the ground.
- Keep looking at your target.
- Follow your kicking leg through towards the intended target.
- The speed of the kicking leg will direct how hard you kick the ball.

Long pass

A long pass is an attacking skill that allows players to switch the direction of the attack very quickly to create space, find a teammate or to catch out the opposition.

- Move parallel to the ball and place your non-kicking foot to the side of the ball.
- Keep your eye on the ball until you have it under your control.
- Look up to see where is the best place to pass the ball.
- On selection of your pass, maintain a strong body position.
- Explosively bring your kicking foot through and strike the ball with laces of your football boot.
- Aim to hit the middle of the ball to ensure it stays close to the ground or the lower half of the ball if you want to lift it over opposition players.
- Keep looking at your target.
- Follow your kicking leg through towards the intended target and your body over the ball.
- The speed of the kicking leg will direct how hard you kick the ball.

Control

Good control of the football is an essential skill to maintain possession of the ball from the opposition and, if done accurately, gives the player more time to make the correct next decision.

- Keep your eye on the ball at all times.
- On contact with the ball, withdraw the foot slightly to take the momentum out of the ball (this is known as "cushioning").
- Aim to make contact with the middle of the ball to ensure that it stays close to the ground and does not bounce up.
- Once under control, move the ball out of your feet to allow the next decision to be made.

Block tackle

The block tackle is an essential skill for winning the ball back in football. It is mainly used when confronting an opponent head on and it is important to complete it with good timing and technique to prevent injury or fouls.

- Close down your opponent quickly but do not rush uncontrolled at them.
- Try to reduce any space around you and monitor for passing options.
- Stay on the balls of your feet, arms slightly out to jockey your opponent.
- Keep your eye on the ball and wait for a clear view of the ball.
- When you can see most of the ball, transfer your weight from your back to front foot and move the inside of your foot towards the ball.
- Maintain a strong body position.

Throw-in

The throw-in is the legal way to restart the game if the ball has gone out of play from either of the side-lines.

- Hold the ball with both hands and ensure that the thumbs are behind the ball and fingers are spread.
- Hold the ball behind the head with relaxed arms and elbows bent.
- Keep your feet shoulder-width apart.
- Face your target.
- Lean back with both feet in contact with the ground.
- Slightly bend your knees and arch your head, neck, shoulders and trunk.
- When ready, propel yourself forward and release the ball just as it passes your head.
- Once the ball is released, bring your strongest leg forward and out in front of you for balance.

Heading

The header can be an attacking or defensive skill and is used to try and win the ball when it is in the air.

- Keep your eyes on the ball.
- Use your forehead to make contact with the bottom of the ball for a defensive header or the top of the ball for an attacking header.
- For a defensive header, it is important to get good height and distance but for an attacking header you need power and accuracy.
- You can also use flick headers to pass to a team mate.

History

Key people

Leading Nazis	Adolf Hitler (1889-1945) Leader of Nazi Party and the fascist dictator of Germany from 1934 until 1945. During his dictatorship, he initiated WWII with his invasion of Poland.
	Joseph Goebbels (1897-1945) Minister for Propaganda in Nazi Germany. He was one of Hitler's closest advisors and was known for his public speaking and antisemitism.
	Hermann Goering (1893-1946) Leading Nazi official and head of the German air force during WWII.
	Heinrich Himmler (1900-1945) Leading member of the Nazi party and responsible for the Gestapo. He was one of the main architects of the Holocaust.
Nazi resisters	Hans and Sophie Scholl Students and members of the White Rose Group who left anti Nazi leaflets in public places. They were executed for their crimes.
	Claus von Stauffenberg Senior officer at the War Office in Berlin famous for the 1944 July bomb plot in which Hitler was injured.

Key terms

Anti-Semitism	Hatred and mistreatment of Jewish people.
Concentration Camp	A prison camp used to hold political prisoners.
Dictator	Ruler of a country with absolute control.
The Fuhrer	Title used by Hitler; meaning all powerful leader.
Gestapo	The secret police in Nazi Germany.
Great Depression	A period of severe worldwide economic depression triggered by the Wall Street Crash.
Hitler Youth	A programme aimed at young people in Nazi Germany in preparation for the military.
Indoctrination	The process of teaching a person or group to accept a set of beliefs.
Kinder, Kirche, Kuche (3Ks)	Children, Kitchen, Church –3 areas of focus for women in Nazi Germany
Mein Kampf	"My Struggle" – Hitler's book, written whilst in prison in 1925.
Police State	Government exercising power through police.
SS (Schutzstaffel)	Hitler's private protection squad.
Treaty of Versailles	Agreement at the end of WW1 that blamed Germany for war.

Nazi Germany



Key events

Voting for Hitler

At the end of WW1, many Germans were angry with the Treaty of Versailles. It made Germany take the blame for WW1. Hitler used this upset and hatred to encourage people to vote for his policies that were centred around revenge. Hitler promised to;

- Destroy the Treaty of Versailles
- Destroy Communism
- Reunite German speakers
- Create living space in the East (Lebensraum)

He also blamed the Jews and Communists for all of the hardship Germany was suffering.

Women

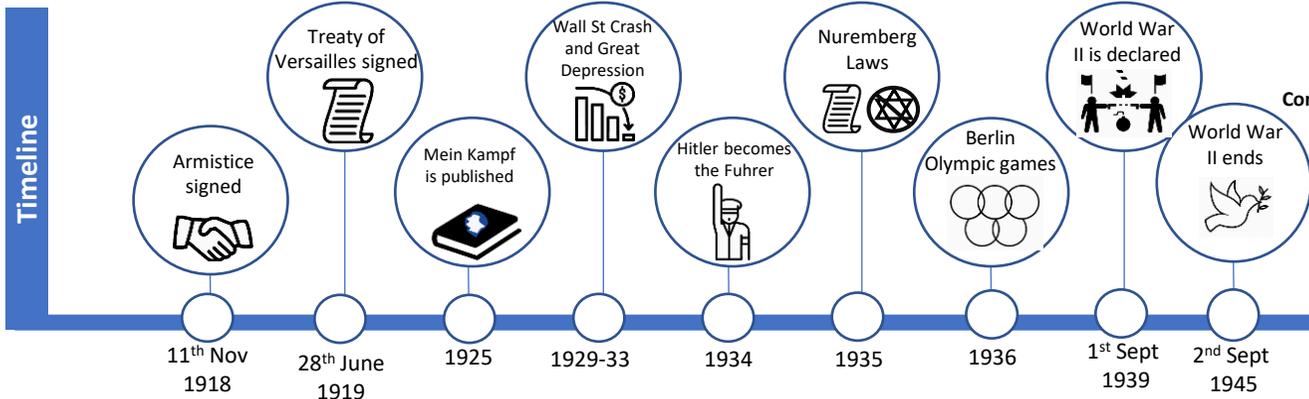
Before Hitler was elected, women in Germany had many rights and freedoms. When Hitler came to power this changed he believed they should perform a more 'traditional' role. He believed the role of women was 'kinder, kuche, kirche'. Propaganda was used to indoctrinate women. The mother cross was awarded to women who were successful in producing children.

Children

The next generation of Nazis had to be indoctrinated from an early age, so education was about racial purity and ensuring the Thousand Year Reich. The Nazis used the school curriculum and after school groups like the Hitler Youth to control the young people of Germany.

Control

Hitler used propaganda, censorship and the police state to make sure he remained in total control of Nazi Germany. Organisations such as the Gestapo and the SS created an atmosphere of fear which led to German's following orders. Those who did speak out found themselves executed or put in concentration camps. This use of fear was supported by changes in the law, for example in 1933 there were 3 crimes punishable by death. By 1943, the number had risen to 46.

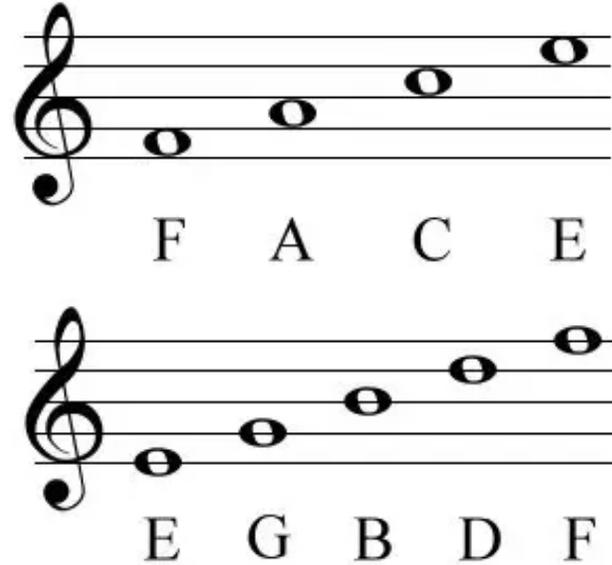


Music

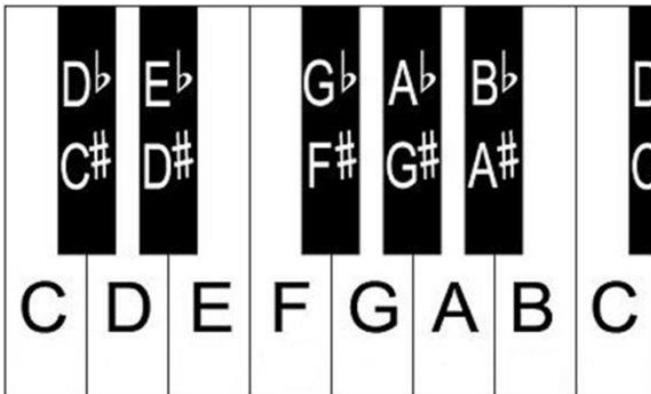
Composition through Improvisation

Terminology	
12 bar blues	A chord sequence, used as a foundation within blues music, that is repeated.
Blues scale	A collection of notes that are used to create specific genres of music.
Melody	The tune within a piece of music.
Improvise	Creating music on the spot. Unprepared performance.
Expression	To add emotion and sensitivity to music. To lift music from the page.
Raga	A collection of notes mainly used within Classical Indian music.
Tala	A cycle of beats that repeats, mainly used in classical Indian music.

Stave Notation - Treble Clef



Musical elements: Dynamics, Rhythm, Pitch, Structure, Melody, Instrumentation, Tempo, Texture, Tonality, Harmony.



Famous musicians you will study

- Bessie Smith
- Sonny Terry & Brownie McGhee
- Howlin' Wolf
- Billie Holiday
- Anoushka Shankar
- A.R. Rahman

Blues instruments

Banjo, harmonica, vocals, guitar, piano, trumpet, saxophone.

Indian instruments

Sitar, bansuri, sarangi, harmonium, tabla, tambura.

El ocio y el tiempo libre

¿Qué tipo de programa te gusta en la televisión? (What kind of program do you like to watch on tv?)

¿Tienes un programa preferido?

(Do you have a favourite program?)

Me encanta (n) = I love
Me gusta (n) mucho = I like a lot
Me gusta (n) = I like
Prefiero = I prefer
No me gusta (n) = I don't like
No me gusta (n) nada = I don't like at all
Odio / detesto = I hate
En mi opinión = In my opinion
Pienso que = I think that

Me fascina (n) = it fascinates me
Me chifla(n) mucho = I am crazy about
Me interesa (n) = it interests
Opino que = I think that
Creo que = I believe that
En mis ojos= in my eyes
Desde mi punto de vista = in my point of view
Me irrita(n) = It irritates me
Me pesa(n) = I regret
Me aburre(n) = it bores me

Las películas románticas = Romantic films
Las películas de aventura= a film of adventure
Las películas de acción= an action film
Las películas de ciencia-ficción = a sci-fi film
Las películas de terror = a horror film
Las películas de guerra = a war film

las comedias = comedies
Los dibujos animados = cartoons
los concursos = tv games
las telenovelas = sopa operas
El pronóstico del tiempo = the weather
las noticias = the news
un documental = a documentary
un partido = a match

Synonyms of "porque"

ya que => as / since
dado que => given that
visto que=> seeing that
puesto que => as

No está(n) mal.=> it is (they are) not bad.

(no) me parece(n) => it/they (doesn't / don't) look(s)

Es /son=> it is / they are

emocionante(s): exciting

aburrido/a(s): boring

inteligente(s): intelligent

divertido/a(s): fun

gracioso/a(s): funny

infantiles: childish

interesante(s): interesting

tonto/a(s): silly

¿Cuándo ves la tele?(What do you watch on tv?)

¿Qué viste en la tele el fin de semana pasada? (What did you watch last week?)

Time phrases

Siempre = always
Nunca = never
Casi nunca = hardly ever
A menudo = often
A veces = sometimes
De vez en cuando = from time to time
Una vez a la semana = once a

week
Dos veces a la semana = twice a week
El fin de semana = the weekend
Cada día = every day

Ayer = yesterday
La semana pasada = last week
El año pasado = last year

Useful verbs

Veo = I watch
Hay = there is / there are.
Es / son = it is / they are.

ví= I watched
Había(n) = there was/ there were.
Era(n) = it was / they were

Example of sentences

Me encantan las películas románticas.
Siempre veo películas de acción porque son interesantes.
Ayer ví un documental, habían animales en peligro de extinción.



¿Qué opinas sobre la tecnología nueva/la tecnología?

(What do you think about new technologies?)

¿Qué haces con tu ordenador / tu móvil? (what do you do with your computer / phone?)

The verb Usar (to use in 6 tenses).

Usé= I used; **Usaba** = I used to use; **He usado**= I have used;
Uso= I use; **Voy a usar** = I am going to use; **Usaré** = I will use

la tecnología = the technology
la consola= the games console
el ordenador= the computer
el portátil= the laptop
el móvil= the mobile phone
la tableta= the tablet
el internet= internet
las redes sociales = social networks

los medios sociales= social media
una aplicación= the app
una sala de chat= the chat room
los juegos en línea= online games
el altavoz inteligente = smart speakers (E.g: Alexa).

Para (+ infinitive) = in order to

ver mis series favoritas= watch my favourite series.
chatear con mis amigos= chat with my friend.
mandar mensajes= send messages.
organizar salidas con mis amigos= organise to go out with my friends.
contactar con mi familia= get in touch with my family.
descargar / escuchar música= download / listen to music.
pasar el tiempo / el rato= pass time.
sacar /editar/ personalisar fotos= take/ edit/ personalise photos.
compartir / subir fotos= share / upload photos.
navegar por la red= browse the internet.
controlar la calefacción / las luces= control the heating/ the lights.
enviar= to send **recibir**= to receive **grabar**= to record.

Recap on past tense.

El preterito

Preterite tense: Used to talk about completed actions in the past.

To form:

1. Take your infinitive.
2. Remove the -AR, -ER, -IR
3. Add the correct ending

-AR verbs		-ER/-IR verbs	
I	-é	I	-í
You	-aste	You	-iste
He/she	-ó	He/she	-ió
We	-amos	We	-imos
You lot	-asteis	You lot	-isteis
They	-aron	They	-ieron

Endings

Preterite	English	Preterite	English
Tuve	I had	Trabajé	I worked
Fui	I went	Dejé	I stopped
Di	I gave	Usé	I used
Fui	I was	Escuché	I listened
Seguí	I carried on	Comí	I ate
Pude	I could	Bebí	I drank
Hice	I did	Aprendí	I learned
Jugué	I played	Vi	I saw/watched
Hablé	I spoke/talked	Viví	I lived
Continué	I continued	Escribí	I wrote
Estudí	I studied	Decidí	I decided

Examples

El imperfecto

Imperfect tense: Used to narrate events in the past and describe what things used to be like

To form:

1. Take your infinitive.
2. Remove the -AR, -ER, -IR
3. Add the correct ending

-AR verbs		-ER/-IR verbs	
I	-aba	I	-ía
You	-abas	You	-ías
He/she	-aba	He/she	-ía
We	-ábamos	We	-íamos
You lot	-abais	You lot	-íais
They	-aban	They	-ían

Endings

Imperfect	English	Imperfect	English
Era	I used to be	Trabajaba	I used to work
Iba	I used to go	Dejaba	I used to stop
Veía	I used to watch/see	Usaba	I used to use
Tenía	I used to have	Escuchaba	I used to listen
Seguía	I used to carry on	Comía	I used to eat
Podía	I used to be able	Bebía	I used to drink
Hacía	I used to do	Aprendía	I used to learn
Jugaba	I used to play	Daba	I used to give
Hablaba	I used to speak/talk	Vivía	I used to live
Continuaba	I used to continue	Escribía	I used to write
Estudiaba	I used to study	Decidía	I used to decide



Example of sentence:

Uso mi móvil **para** mandar mensajes.
 I use my mobile **in order to** send messages.

English: Speaking and Listening

Debate	A structured argument where two sides speak alternately for and against a particular contention.
Proposition	The side which agrees with the title of the debate.
Opposition	The side which disagrees with the title of the debate.
Rebuttal	When you give a statement or evidence against an argument raised by the other side.
Verbatim	Word for word.
Content	What you actually say in your speech. This will include facts, opinions, evidence and anecdote.
Clarity	Being clear in the points you are making. Expressing the complex issues so they make sense and are focused on the argument you are making.
This house believes ...	The start of any formal debate title. The title will always take a side so the proposition and opposition know which side they are on.

Useful Formal Debate Phrases

Opening the debate:

Ladies and Gentlemen, welcome to this debate.

Welcome from this side of the house...

The motion for debate today is: ... defining the motion:

Now we as today's proposition/opposition strongly believe that this is true/not true.

Presenting the team-line

I, as the first speaker, will be talking about ...

Our second speaker, ..., will elaborate on the fact that ...

Introducing arguments

My first/... argument is:

The first/... reason why we're prop/opposing this motion is:

There are many examples for this/for ..., for instance.

In fact, you can find many examples for this in real life. Just think of...

And there are similar cases, such as..., ...

So in this simple example we can clearly see the effect of ...

Now because of this ..., we have to support this motion.

Summarising & ending your speech

So Ladies and Gentlemen, what have I told you today? And for all of these reasons, the motion must stand/fall.

And for all these reasons, I beg you to prop/oppose

Speak Up

When you take a stand and say what you choose,
Without hesitation, or being confused,
Not holding a fear of what others may say,
But to say what you mean in everyway,

It liberates your soul, by setting you free,
No longer a prisoner of insecurity,
But a teacher to others who sometimes hold back,
By seeing in you the strength that they lack,
Releases their fears and doubts that they hold,
And helps them now see its ok to speak bold,
Just do it with dignity, kindness and love,
Give all of your fears to our friends up above,

Don't compromise yourself to collude with the rest,
Speak truth in your words and remain at your best,
If others don't like the control that they lack,
Because of your strength to speak truth and talk back,

Let that be their issue, don't lose who you are,
Keep making that stand and you're sure to go far.

We all have the right to express our beliefs,
Our ideas, opinions, happiness and grief,

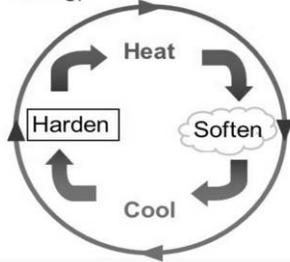
But we must allow others to do just the same,
Respect them and their wishes without drama and pain.

So keep trying hard to find that strength deep within,
And let old habits go, so new ones can begin.

Design and Technology

Thermoplastic plastics

- The majority of common plastics are thermoplastics.
- Thermoplastics can be heated and reshaped because of the ways in which the molecules are joined together.
- This can be repeated many times (as long as no damage is caused by overheating).



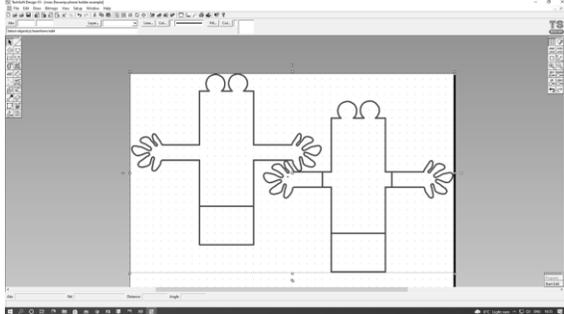
6 of 31

© Boardworks Ltd 2005

Types of thermoplastics

CAD - Computer aided Design

CAD refers to the use of computer software in the design of things such as cars, buildings, and machines.



Plastics - polymers. Year 9 DT



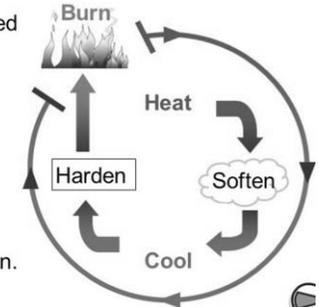
	Coping saw
	files
	Scroll saw

	Tennon saw
	Pillar drill
	Sand paper

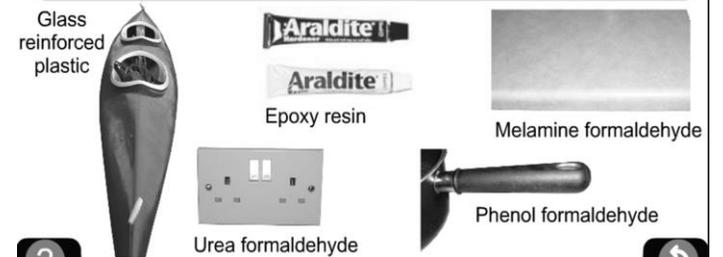
Thermosetting plastics

Thermosetting plastics are those which are set with heat and have little elasticity. Once set, they cannot be reheated and reformed.

- They are heated and moulded during manufacture.
- Once cooled, they will not soften again when heated. This breaks the potentially unending cycle that thermoplastic plastics are capable of.
- If heated too much, they burn.



Types of thermosets



CAM - Computer aided manufacture

Laser cutting is a process that uses a laser to cut different materials for both industrial and more artistic applications, such as etching.

