English Knowledge Organiser: Of Mice and Men – John Steinbeck

Context: 1930s America

Great Depression	The Wall Street crash in 1929 saw financial ruin in America. Millions were left unemployed.
Dustbowl	Drought and famine in the American Mid-West saw crops ruined, starvation and farms go bust.
Segregation	America was split along racial lines with black people being ill-treated like second class citizens.
Patriarchal society	Male-dominated society with women having less respect and power than men.

Key Themes

Migrants	Steinbeck encourages us to empathise with the plight of poor, migrant workers during the Great Depression.
American Dream	The American Dream is shown to be impossible and harsh reality defeats hope and idealism.
Friendship	The novella explores the human need for companionship and the tragedy of loneliness.
Power	Steinbeck reveals the cruel nature of mankind; the powerless are targeted by the powerful.

Key Characters

George	Frustrated, devoted, a dreamer.
Lennie	Childlike, unassuming, gentle giant.
Candy	Unloved, an outcast, ageing worker.
Curley	Boss's son, insecure, unmerciful, jealous.
Curley's wife	Lonely, objectified, flirtatious, nameless.
Crooks	Black man, cynical, proud, isolated.
Slim	Compassionate, wise, respected foreman.
Carlson	Heartless, insensitive brute.

Plot Summary

Chapter 1	Lennie and George camp by the river and talk about their dream ranch.
Chapter 2	They arrive at the new ranch and meet the boss, his son Curley, Slim and workers.
Chapter 3	Carlson shoots Candy's smelly dog. Lennie busts Curley's hand.
Chapter 4	The men go into town. Curley's wife talks to male outcasts who reject her.
Chapter 5	Lennie petting the animals in the barn.
Chapter 6	George helps Lennie escape the manhunt.

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 and 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.

Gaia Rose

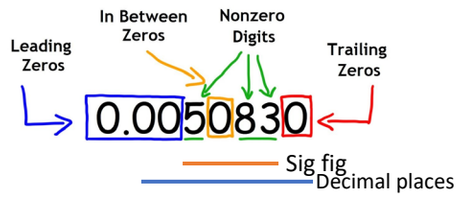
Prior Knowledge

Integer – a whole number can be positive or negative. ..... -4, -3, -2, -1, 0, 1, 2, 3, 4, ...

Terminating Decimal – a decimal that ends. 0.5, 1.2, 1.245, 1.689

Recurring Decimal – the digits after the point continue for ever in some way (sequence or not in a sequence). $0.333\dot{3}$, $0.\dot{3}4\dot{5}$, π, √2

Significant figures – the digits that carry meaningful contributions.



Decimal places – the digits after the point.

Multiplying with Decimal places - ignore the decimal places, do the multiplication then put decimal places back. 3.2x2.4 do 32x24=768 put decimals back in 3.2x2.4=7.68

Dividing with decimal places – write as fraction then multiply top and bottom by 10, 100, 1000 until you get whole numbers – then divide. $6 \div 0.5 = \frac{6}{0.5} = \frac{60}{5} = 12$

5 > 3 3 < 5 2.01 < 2.1 etc.....

You can use the **>** and **<** signs to show which number is bigger

Add and subtract make common denominators. Multiply just multiply tops and multiply bottoms. Divide "KCF" – Keep, change, flip.

You can **add**, **subtract**, **multiply** and **divide** fractions.

HCF – Highest Common Factor – the biggest factor in both lists. LCM – Lowest Common Multiple – the smallest number in both lists.

Factors – Numbers that divide into a number exactly.

Multiples – Extended times tables.

Venn Diagram – Circles that overlap to show relationships between 2 or more things.

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

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.

You can have positive and negative square roots. *√16 is 4 and -4*

Square root – Finding a number that times itself to given that number.

Estimating – Rounding numbers before doing the calculation. Or finding a rough answer to the problem.

$3 \times 3 \times 3 \times 3 \times 3 = 3^5$

$2^4 = 2 \times 2 \times 2 \times 2 = 16$

You can use index notation and evaluate simple indices.

Key Concepts

Higher – Unit 1 - Number

Number of ways of doing two tasks	**m** ways of doing one task and **n** ways of doing a second task, the total number of ways of doing the first task then the second task is **m** x **n**.	
Dealing with a fraction in BIDMAS	For $\frac{calculation\ 1}{calculation\ 2}$ treat as brackets work out (calculation 1) then (calculation 2) using the priority of operations (**BIDMAS**) before dividing.	$\frac{3+5\times 2}{3\times 4^2} = \frac{3+10}{3\times 16} = \frac{13}{48}$
Cube Root	Cube root is the inverse of cubing. "What number was multiplied by itself, then again to get this?	$\sqrt[3]{1}=1$ $\sqrt[3]{8}=2$ $\sqrt[3]{27}=3$
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.	$5^6 \div 5^2 = 5^{6-2} = 5^4$
Power to a power	Multiply the indices.	$(3^4)^2 = 3^{4\times 2} = 3^8$
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. ½)	Means a root. A ½ means the square root, 1/3 means the cube root etc…	$16^{\frac{1}{2}} = \sqrt{16} = 4$
A fraction in the power (e.g. 2/3)	Use the denominator for the root, and then the numerator is a power. E.g. for 2/3 do the cube root and then square it.	$27^{\frac{2}{3}} = (\sqrt[3]{27})^2 = 3^2 = 9$
Prefix	Some powers of 10 have a prefix – e.g. 1000 is kilo.	1 **Kilo**gram (**Kg**) = 1000 grams (g)
Standard form	Used to write big numbers quickly or small numbers quickly.	**(Between 1 and 10) x 10 power**
Not equal sign	The not equal to sign is an equal sign with a line through it.	$\neq$
Surd	A number written as a root.	$\sqrt{3}$ root of a whole number = 1.732050808 … irrational number
Rational number	It can be written as a fraction	$0.5 = \frac{1}{2}$ $0.333\dot{3} = \frac{1}{3}$
Rationalising the denominator	Multiply by the denominator over the denominator (in other words by 1)	$\frac{3}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}} = \frac{3\sqrt{5}}{5}$

Prior Knowledge

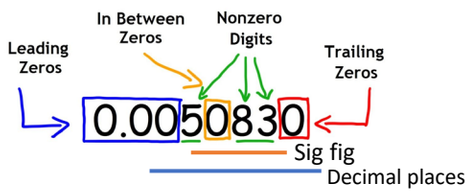
Integer – a whole number can be positive or negative … -4, -3, -2, -1, 0, 1, 2, 3, 4 …

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.

+	x	+	=	+
+	x	-	=	-
-	x	+	=	-
-	x	-	=	+

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.

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

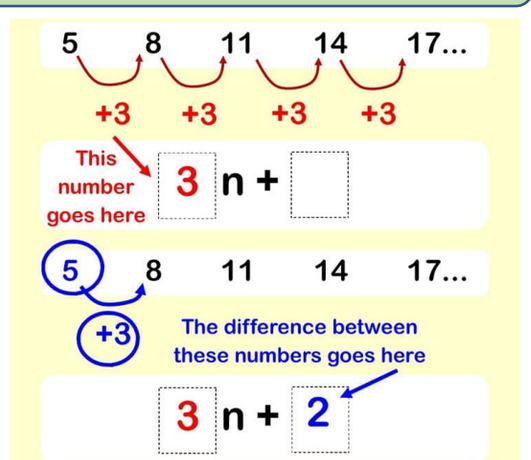
BIDMAS – The order in which we do calculations. **Brackets** first then **indices**. **Division and multiplication** same time left to right. Finally **Addition and subtraction** same time left to right.

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.

$$\frac{8}{12} \begin{matrix} \div 4 \\ = \\ \div 4 \end{matrix} \frac{2}{3}$$

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.

Expanding Brackets	Factorising Brackets
multiply $7(x+2)$ $7x+14$	$7x+14$ Common factor? $7(x+2)$

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. ½)	Means a root. A ½ means the square root, 1/3 means the cube root etc…	$16^{\frac{1}{2}} = \sqrt{16} = 4$
A fraction in the power (e.g. 2/3)	Use the denominator for the root, and then the numerator is a power. E.g. for 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 ibn the 2 times table and can be written as 2n.	**2n**
Substitution	Swapping an algebraic letter for its value.	Work out the value of the expression 5x + y If x = 4 and y = 3 5x4 + 3 20 + 3 23
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, 5, 12, 19, 26, … +7 +7 +7 +7
Geometric Sequence	Terms increase (or decrease) by a constant multiplier.	2, 4, 8, 16, 32 x2 x2 x2 x2
Arithmetic Sequence	Terms increase (or decrease) by a fixed number (common difference).	-6, 1, 8, 15, 22 +7 +7 +7 +7

Prior Knowledge

Place Value – what the digits represent in a number.

Decimal places – the digits after the decimal point.

Multiplying by 10 – all digits move one place to the left.

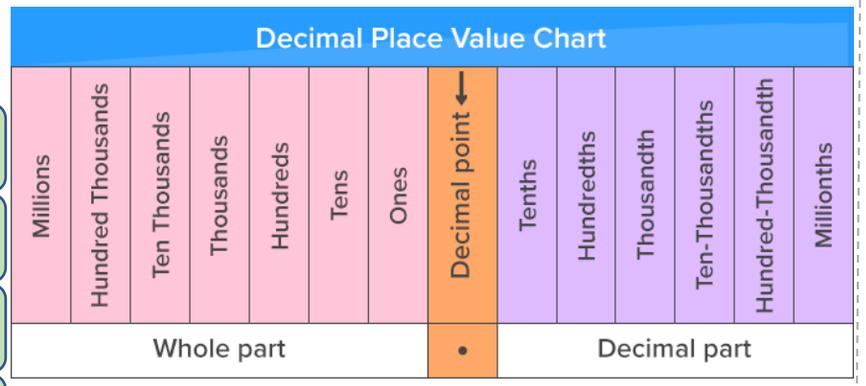
Dividing by 10 – all digits move one place to the right.

Multiplying by 100 – all digits move two places to the left.

Dividing by 100 – all digits move two place to the right.

Rounding – making the number simpler but keeping it close to what it was.

Eg) 34 + 29, 89 – 23, 82 x 21 and 114 ÷ 6



Multiply by 10, 100, 1000 digits move left

Divide by 10, 100, 1000 digits move right

Round to nearest ten

63 → 60

65 → 70

524 → 520

Round to nearest hundred

435 → 400

462 → 500

7328 → 7300

The 4 Operations – These are +, -, x and ÷. You can answer questions involving **whole** numbers and these four operations.

Even Number – Can be divided exactly by 2. They end in **2, 4, 6, 8, 0.**

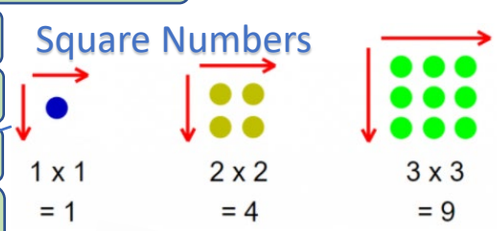
Odd Numbers – Can not be divided exactly by 2. They end in **1, 3, 5, 7, 9.**

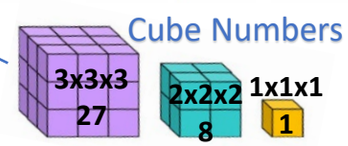
Factors – Numbers that divide into a number exactly.

Multiples – Extended times tables

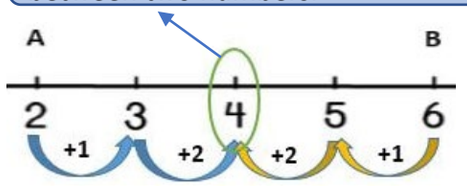
Square Numbers – A number has been multiplied by itself.

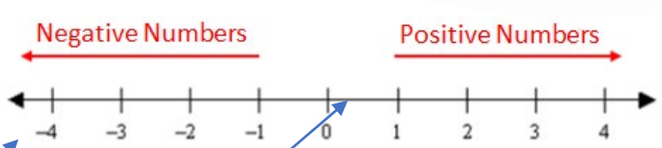
Cube Numbers – A number has been multiplied by itself three times.





Midpoint – You need to be able to find the midpoint value between two numbers.

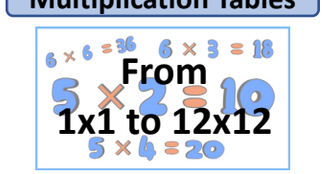


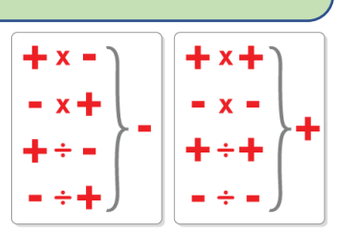


Negative Numbers – Real numbers that are less than zero.
Positive Numbers – Real numbers that are greater than zero.

Ordering Directed Numbers – You need to be able to put negative and positive numbers in size order.

Multiplication Tables





Rules for x and ÷ directed numbers - You need to know and use the rules when you multiply and divide by positive and negative numbers.

Foundation – Unit 1 - Number

Key Concepts

BIDMAS	What we use to do a calculation its called **the priority of operations**.	**B**rackets, **I**ndices (powers), **D**ivision and **M**ultiplication, **A**ddition and **S**ubtraction.
Not equal sign	The not equal to sign is an equal sign with a line through it.	$\neq$
Function	A rule that changes an input to an output	7 → [+ 2] → 9
Inverse Function	The rule that changes the number back again (reverses the function).	7 ← [– 2] ← 9
Roots	**Square root** is the inverse of squaring **Cube root** is the inverse of cubing.	
Decimal places (d.p.)	To round to 1 d.p. look at the 2nd d.p. To round to 2 d.p. look at the 3rd d.p.	35.23 is 35.2 (1 d.p.) 35.27 is 35.3 (1 d.p.)
Dividing by a decimal	Write as a fraction then multiply both numbers by (10, 100,...) until you have a whole number to divide by.	$6 \div 0.5 = \frac{6}{0.5} = \frac{60}{5} = 12$
Converting units	1m=100cm, 1km=1000m etc…..	3.2km = 3.2 x 1000 = 3200m
Significant figures (s.f.)	Digits that carry meaningful contributions To round to 3 s.f. look at the 4th s.f. etc…	256800 is 257000 (3sf) 0.0002482 is 0.000248 (3sf)
Estimating	Rounding before doing the calculation.	**22 x 81 ≈ 20 x 80 ≈ 1600**
Dealing with a fraction in BIDMAS	For $\frac{calculation\ 1}{calculation\ 2}$ work out (calculation 1)÷(calculation 2) using the priority of operations (**BIDMAS**).	$\frac{3+5\times 2}{3\times 4^2} = \frac{3+10}{3\times 16} = \frac{13}{48}$
Prime Number	Prime has only two factors, 1 and itself.	**2, 3, 5, 7, 11, 13, 17, 19, 23, …**
Highest Common Factor	HCF — the largest number that is a **factor** of both numbers.	***Hint: List all the factors***
Lowest Common Multiple	LCM — the smallest number that is a **multiple** of both numbers.	***Hint: Start listing the multiples (times tables)***
Surd	A number that still has a square root in, its an exact value – its not been rounded.	$3\sqrt{2}$ *is a surd* $3 \times \sqrt{2}$. $\sqrt{4}$ *not a surd as it is* 2.
Base number	This is the number that is being multiplied by itself.	Index or power Base $10^3 = 10\times10\times10$
Index (Power)	The small number written above the base	
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.	$5^6 \div 5^2 = 5^{6-2} = 5^4$
Prefix	Some powers of 10 have a prefix – e.g. 1000 is kilo	1 **Kilo**gram (**K**g) = 1000 grams (g)
Prime factor decomposition	All numbers can be written as a product of prime factors.	**Eg) 50 = 2x5x5**

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.

+	x	+	=	+
+	x	-	=	-
-	x	+	=	-
-	x	-	=	+

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

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.

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

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

Square Numbers – when an integer has been multiplied by itself.

$1^2 = 1 \times 1 = 1$
$2^2 = 2 \times 2 = 4$
$3^2 = 3 \times 3 = 9$
$4^2 = 4 \times 4 = 16$
$5^2 = 5 \times 5 = 25$
$6^2 = 6 \times 6 = 36$
$7^2 = 7 \times 7 = 49$
$8^2 = 8 \times 8 = 64$
$9^2 = 9 \times 9 = 81$
$10^2 = 10 \times 10 = 100$

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

Expanding Brackets	Factorising Brackets
multiply $7(x+2)$ $7x+14$	$7x+14$ Common factor? $7(x+2)$

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

Simplify algebraic expressions: collect like terms (terms with the same variable).

$7x$
$4x + 8 + 3x + 7 = 7x + 15$
15

Multiply terms
$4a^2 \times 2a^5$
Multiply Numbers — Add Powers
$= 8a^7$

Index, Expanded, and Number Forms

$5^2 = 5 \times 5 = 25$

5^2 is called **"Index Form"**

5×5 is called **"Expanded Form"**

25 is called **"Numerical Form"**

Substitution: Swapping an algebraic letter for its value.

Work out the value of the expression
$5x + y$
If $x = 4$ and $y = 3$
$5 \times 4 + 3$
$20 + 3$
23

Laws of indices

$a^m \times a^n = a^{m+n}$
$a^m \div a^n = a^{m-n}$
$(a^m)^n = a^{m \times n}$

$2^5 \times 2^3 = 2^{5+3} = 2^8$
$7^6 \div 7^2 = 7^{6-2} = 7^4$
$(2^3)^2 = 2^{3 \times 2} = 2^6$

Key Concepts

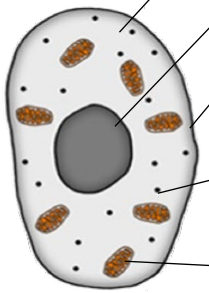
Foundation – Unit 2 - Algebra

Variable	The letters used in algebraic expressions to stand for numbers. Called a variable because they **vary**.	$x + 9$ variable, addition sign, number
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.	$5^6 \div 5^2 = 5^{6-2} = 5^4$
Anything to the power zero	Is one.	$3^0 = 1$ $a^0 = 1$
Substitution	Swapping an algebraic letter for its value.	Work out the value of the expression $5x + y$ If $x = 4$ and $y = 3$ $5 \times 4 + 3$ $20 + 3$ 23
Expanding a Single Bracket	Multiply each term inside the bracket by the term outside.	Expand $4(3a+2)$ $4(3a + 2) = 12a + 8$
Factors	Numbers or letters that divide into a term exactly.	Factors of 12: 1, 2, 3, 4, 6, 12 Factors of 16: 1, 2, 4, 8, 16 Common Factors
Common Factors	A factor of two or more terms.	
Identity ≡	Two expressions are equal for all values of the variable.	**5(x+1)** ≡ 5x + 5 is an identity because 5(x+1) has the same value as 5x + 5 for all values of x.
Not equal ≠	Used to show that two expressions are not equal.	$5(x+6) \neq 5x + 12$
Multiply Algebraic Terms	Multiply the numbers first and then the letters.	**2a x 3b = 2 x 3 x a x b = 6ab**
Divide Algebraic Terms	Divide the numbers first and then the letters.	$\frac{10x}{2} = \frac{10}{2} \times x = 5x$
Simplifying Terms	• Write numbers before letters (for coefficients). • Write letters in alphabetical order. • Write higher power terms first.	$9x^2 - 2x - 11x^2 + 5x + 7$ $= -2x^2 + 3x + 7$

Science K.O. CB1 Key Concepts

Eukaryotes complex organisms

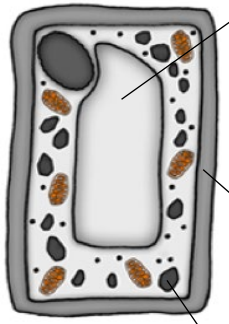
animal cell



cytoplasm	*Site of chemical reactions in the cell.*	Gel-like substance containing enzymes to catalyse the reactions.
nucleus	*Contains **genetic material.***	Controls the activities of the cell and codes for proteins.
cell membrane	*Semi-permeable.*	Controls the movement of substances in and out of the cell.
ribosome	*Site of protein synthesis.*	mRNA is translated to an amino acid chain.
mitochondrion	*Site of respiration.*	Where energy is released for the cell to function.

plant cell

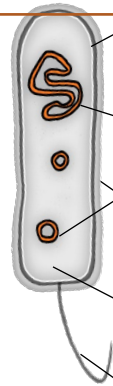
contains all the parts of animal cells plus:



permanent vacuole	*Contains cell sap.*	Keeps cell turgid, contains sugars and salts in solution.
cell wall	*Made of cellulose.*	Supports and strengthens the cell.
chloroplast	*Site of photo-synthesis.*	Contains chlorophyll, absorbs light energy.

Diffusion	***Movement of particles from a higher to a lower concentration e.g. O2 and CO2.***
Osmosis	***Movement of water from a dilute solution to a more concentrated solution e.g. Plants absorb water from the soil.***
Active transport ***ENERGY*** required	***Movement of particles from a dilute solution to a more concentrated solution e.g. movement of mineral ions into roots of plants.***

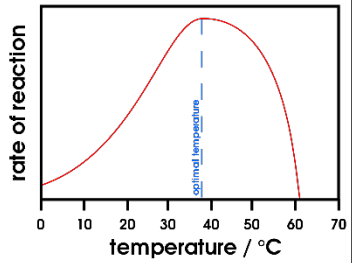
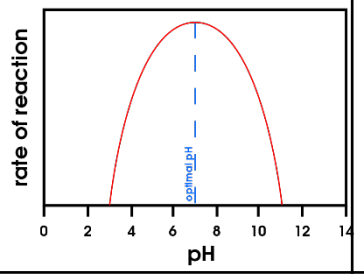
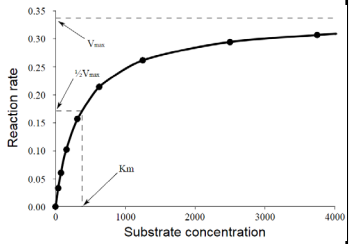
Prokaryotes



cell membrane	*Semi-permeable.*	Gel-like substance containing enzymes to catalyse the reactions.
bacterial DNA	*Not in nucleus. Floats in the cytoplasm.*	Controls the function of the cell. Can be found as chromosomal DNA and plasmid DNA (small rings).
cell wall	***NOT** made of cellulose.*	Supports and strengthens the cell.
cytoplasm	*Site of chemical reactions in the cell.*	Controls the movement of substances in and out of the cell.
flagella	*Whip-like tail.*	Allows the bacterial cell to move.
ribosome	*Site of protein synthesis.*	mRNA is translated to an amino acid chain.

Enzymes catalyse (increase the rate of) specific reactions.

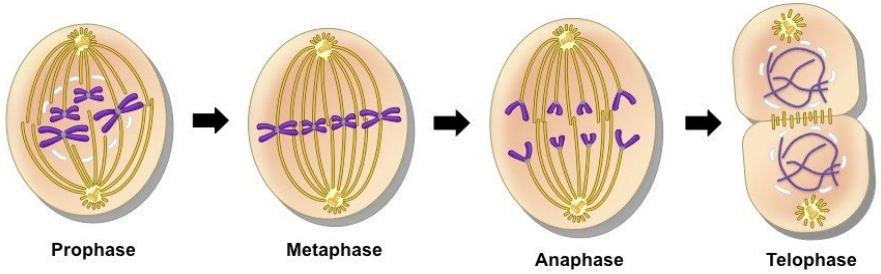
The activity of enzymes is affected by changes in temperature, pH and substrate concentration.

Enzymes activity has an optimum temperature.	***Enzyme activity has an optimum pH.***	***Increasing substrate concentration increases rate (limited by number of active sites).***
		

Science
K.O. CB2 – Cells and Control

Key Terms / Words	Definition
asexual reproduction	Producing new organisms from one parent only. These organisms are genetically identical to the parent.
cancer cell	Cell that divides uncontrollably.
cell cycle	A sequence of growth and division that happens in cells. It includes interphase and mitosis, and leads to the production of two daughter cells that are identical to the parent cell.
interphase	The stage when the cell prepares itself for the process of cell division, and DNA replication takes place. The cell also makes more of its sub-cellular structures.
mitosis	The process of cells dividing to produce two daughter cells that are genetically identical to the parent.
differentiation	When a group of similar things, such as cells, become different in form from each other.
meristem	A small area of undifferentiated cells in a plant, such as near the shoot tips and root tips, where cells are dividing rapidly by mitosis.
sensory neurone	Neurone that carries impulses from receptor cells, towards the central nervous system.
motor neurone	Neurone that carries impulses to effectors.

Mitosis



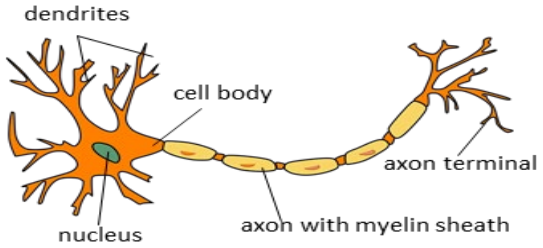
Stage 1	*Interphase (not part of mitosis)*	Before mitosis: Increase the number of sub-cellular structures e.g. ribosomes, mitochondria. DNA replication makes copies of chromosomes.
Stage 2	*Prophase*	Nucleus breaks down and spindle fibres appear.
Stage 3	*Metaphase*	Chromosomes are lined up on spindle fibres on the equator (middle) of the cell.
Stage 4	*Anaphase*	Chromosome copies are separated and pulled to opposite ends of the cell.
Stage 5	*Telophase*	A new nuclear membrane forms around each set of chromosomes.
Stage 6	*Cytokinesis*	Cell surface membrane forms to separate the cells (+new cell wall in plants).

Information from receptors passes along cells (neurones) as electrical impulses to the central nervous system (CNS).

The CNS is the brain and the spinal cord.

Reflex actions are automatic and rapid.

Stimulus	Touch hot object.
Sensory receptor	Cells in skin.
Relay neurone in CNS	CNS.
motor neurones	Muscles connected to arm.
Response	Hand moves away.

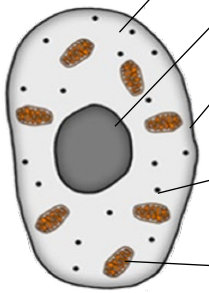


Human Embryonic stem cells	***Can be cloned and made to differentiate into any cell type.***	Therapeutic cloning of stem cells to produce new tissue uses same genes so the body does not reject the tissue. Can be a risk of infection.
Adult stem cells	***Can form into surrounding human cells e.g. blood cells.***	Tissue made from adult stem cells is matched to avoid rejection, risk of infection. Only a few types of cells can be formed.
Meristems (plants)	***Can differentiate into any plant cell type throughout the life of the pant.***	Used to produce clones quickly and economically, e.g. rare species, crop plants with pest /disease resistance.

Science K.O. CB1 Key Concepts

Eukaryotes complex organisms

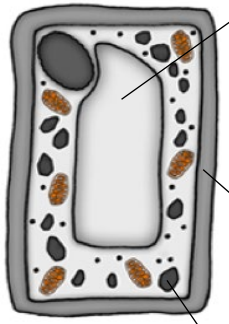
animal cell



cytoplasm	*site of chemical reactions in the cell.*	Gel-like substance containing enzymes to catalyse the reactions.
nucleus	*contains **genetic material.***	Controls the activities of the cell and codes fro proteins.
cell membrane	*semi permeable.*	Controls the movement of substances in and out of the cell.
ribosome	*site of protein synthesis.*	mRNA is translated to an amino acid chain.
mitochondrion	*site of respiration.*	Where energy is released for the cell to function.

plant cell

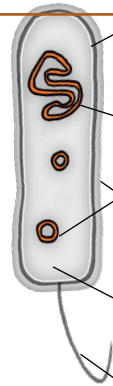
contains all the parts of animal cells plus:



permanent vacuole	*contains cell sap.*	Keeps cell turgid, contains sugars and salts in solution
cell wall	*made of cellulose.*	Supports and strengthens the cell
chloroplast	*site of photo-synthesis.*	Contains chlorophyll, absorbs light energy

Diffusion	***Movement of particles from a higher to a lower concentration e.g. O2 and CO2.***
Osmosis	***Movement of water from a dilute solution to a more concentrated solution e.g. Plants absorb water from the soil.***
Active transport ***ENERGY*** required	***Movement of particles from a dilute solution to a more concentrated solution e.g. movement of mineral ions into roots of plants.***

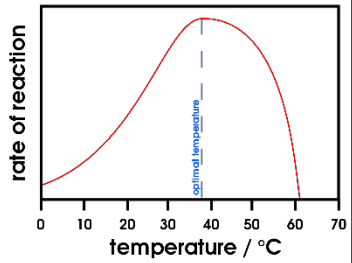
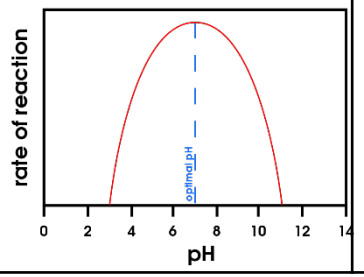
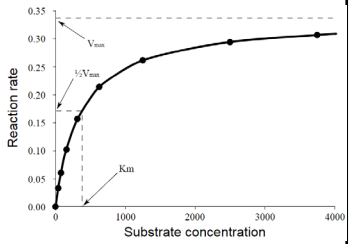
Prokaryotes



cell membrane	*semi permeable.*	Gel-like substance containing enzymes to catalyse the reactions.
bacterial DNA	*not in nucleus, floats in the cytoplasm.*	Controls the function of the cell. Can be found as chromosomal DNA and plasmid DNA (small rings).
cell wall	***NOT** made of cellulose.*	Supports and strengthens the cell.
cytoplasm	*site of chemical reactions in the cell.*	Controls the movement of substances in and out of the cell.
flagella	*whip-like tail.*	Allows the bacterial cell to move.
ribosome	*site of protein synthesis.*	mRNA is translated to an amino acid chain.

Enzymes catalyse (increase the rate of) specific reactions.

The activity of enzymes is affected by changes in temperature, pH and substrate concentration.

Enzymes activity has an optimum temperature.	***Enzyme activity has an optimum pH.***	***Increasing substrate concentration increases rate (limited by number of active sites).***
		

Year 9 Art

Key Vocabulary

Sketch - A rough or unfinished drawing or painting, often made to assist in making a more finished picture.

Proportion - Comparative relation between things or magnitudes as to size.

Refine - To add the finishing touches to something or to improve the quality.

Composition - The considered layout of a piece of work.

Tone - Shade or shadow.

Hatching - Shading with closely drawn parallel lines.

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

Symbolism - The use of symbols to represent ideas or qualities.

Anatomical - Work that shows a scientifically accurate representation of the human body>

Contextual Information

Leonardo da Vinci was an Italian polymath of the Renaissance who is widely considered one of the most diversely talented individuals ever to have lived. While his fame initially rested on his achievements as a painter, he also became known for his notebooks, in which he made drawings and notes on science and invention; these involve a variety of subjects including anatomy, astronomy, botany, cartography and painting. Da Vinci spent many years cutting up cadavers in order to have a greater understanding about the human body and created anatomically correct sketches of muscles, organs and bones with written notes. These drawings were used by the scientific community in order to further their understanding.

Overview

During this project, students will be studying the work of Leonardo da Vinci and will learn how to create an anatomically accurate drawing. Students will discuss how the work of da Vinci helped to advance medicine and doctors' understanding of human anatomy. After this artist study, students will look at how flowers are represented throughout art and will create a floral study using water colour. Students will learn how to create effective colour gradients in water colour. This work will lead into a wider topic of "Day of the Dead" where students will take their anatomical drawing skills and apply this to a final piece that features a realistic skull drawing with floral elements. They will learn about the cultural meaning behind the symbolism used in the "Day of the Dead" festival and how they could apply these symbols to create an effective final piece. Students will further personalise their outcomes by choosing their own imagery to embellish the outcome.

Day Of The Dead

The Day of the Dead (Spanish: Día de Muertos or Día de los Muertos) is a holiday celebrated in Mexico and elsewhere associated with the Catholic celebrations of All Saints' Day and All Souls' Day, and is held on November 1 and 2. The multi-day holiday involves family and friends gathering to pray for and to remember friends and family members who have died. It is commonly portrayed as a day of celebration rather than mourning. People will often dress up in fancy dress and have parades. The term sugar skull is most often applied to edible or decorative skulls made from either sugar or clay that are used in the Mexican celebration of the Day of the Dead. They are created to represent loved ones who have died and offered to the spirits so they will join the living for the celebrations.

How To Create An Accurate Skull Drawing

1. Lightly sketch out the main shapes of your skull.
2. Sketch out the complete outline and add markings for features.
3. Lightly all the features of your drawing, looking at size and proportions.
4. Refine your outline with a neater sketched line.
5. Add darkest areas of tonal shading and blend out gradually.
6. Add highlights onto the drawing using a rubber.
7. Refine all lines.

Year 9 Computing

Programming Concepts Part II

Todmorden High School

KEY VOCABULARY	
IDE	A piece of software used to help a programmer develop programs (eg, MU).
Algorithm	A step-by-step set of rules or instructions to complete a task.
Pseudocode	An algorithm written in the style of a programming language but using plain English.
Syntax	The rules/grammar of a programming language.
Variable	Is a memory location to hold a value in a program (eg, Score = 1).
Iteration	A programming statement which makes the program repeat a set of instructions.
Selection	A programming statement which cause the program to make a choice and flow in a given direction.
String	A data type to store text.
List (Arrays)	Lists are used to store multiple items in a single variable.
Mathematical Operators	Are symbols used in programming to carry out calculations (eg, / * + DIV MOD).
Boolean Operators	A logical system using AND, OR and NOT. Takes one or two inputs resulting in a TRUE or FALSE output.

Knowledge

Lists:

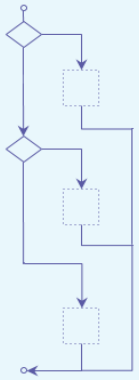
```
1   days = ["Monday", "Tuesday",
2          "Wednesday", "Thursday",
3          "Friday", "Saturday",
4          "Sunday"]
5   print(days[0])
```

0 1 2

Lists store multiple items in one variable. Each item in a list is accessed using an index 0,1,2 etc….
Indexing always starts at (Zero). 0
So in the above example line 5 will print out Monday – which is the first item in the list called days[ ]

Selection:

```
if condition :
    block of statements
elif condition :
    block of statements
else:
    block of statements
```



Conditional Loops (Iteration)

For

```
1 shopping = ["Pasta", "Tomatoes",
2              "Onions", "Basil",
3              "Parmesan"]
4 print("Buy:")
5 for item in shopping:
6   print(item)
```

A **for** loop will repeat a section of code for a set number of times. In the example above the program will print out each (item) **for** every item in the list (i.e. 5 times)

While

```
password = input("Please Enter Password")

while password != "Dave":
    password = input("Please Enter Password")
```

A **while** loop will repeat a section of code until a condition is met. In the example above the user is asked to enter a password. Then until the user enters the password "Dave" it will continue to ask the user for their password.

Year 9 Digital Literacy

Databases

KEY VOCABULARY	
Database	Large collection of data. Can be paper or computerised
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 backup copies.
- Changes are updated automatically.
- Easy to sort data into order eg, 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

Design Technology

Year 9

Subject: Technology
Year: 9

Key Assessments
Knowledge Organiser tests and class work mark.

Core Texts/ Websites
- Design and Technology KS3 class book.
- BBC Bitesize.
- Technologystudent.com

Use this Knowledge Organiser to prepare for lessons and build your understanding of D&T.

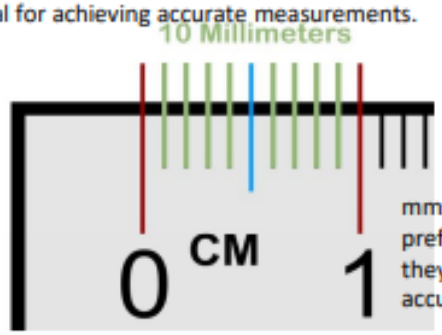
Useful Connectives:
Therefore, however, on the other hand, in my opinion, but, finally, firstly, secondly, thirdly, as well as this, moreover, furthermore, similarly, in contrast to.

Keywords	Definition
Annotate	To label, provide information on the design
Inspiration	A source that provides ideas
Consumer	The person who buys or uses the product
Aesthetics	The appearance of the product
Environment	The place we live, work, socialise in
Sustainability	The ability to sustain natural resources without impacting future generations
Function	What a product does, the purpose
Size	Measured in mms or cms.
6Rs	Used to assess environmental impact
Sketch	A quick drawing to show
Evaluate	Assessing whether an idea is successful
Initial Designs	First rough designs in response to the task
Final Design	Final drawing of the product being made
Mood Board	Collection of images to gain inspiration
Existing Product	Products that are already available
Design Specification	A list of specific design requirements
Design Brief	An introduction to the overall task
Materials	The physical matter the product is made from
Primary Research	Collecting new data first hand (Questionnaire)
Secondary Research	Collecting data that already exists (Websites)
CAD	Computer Aided Design
CAM	Computer Aided Manufacture

Using a Ruler:
Rulers are essential for achieving accurate measurements.

100cm = 1000mm
10cm = 100mm
1cm= 10mm
0.1cm = 1mm

- 1cm
- 0.5cm
- 10 Lines per centimeter



mms are used preferred as they are more accurate

Useful Sentence Starters for D&T:

Analyse: to examine a task/product in detail (use who, what, where , when and why).
- This is an example of good design because _____
- It is made from _____
- The target user for the product is _____.
- It is made attractive by _____.

Develop: to improve or modify a design or product
- I have developed by ideas by _____
- I have combined the best parts of made design ideas that _____
- I have removed this part of the design/ changed the material because _____
- To improve the design, I need to _____.
- I decided to _____ because_____.

Justify: To give reasons for your decisions
- I think that is a successful design because _____.
- _____ is a suitable material as it is _____.
- The product can be used for an alternative purpose as it _____, therefore _____.
- I believe the choice of material affects the type of consumer because _____.

Evaluation: to assess a product. Identify a products strengths and weaknesses and suggest modification
- **The strengths of the product are** _____
- **The weaknesses of the product are** _____
- **To improve my product/design, I would** _____
- **To make my product more environmentally friendly I would** _____

Safety in workshop is very important. **Signs will be placed around the workshop and on machines.**

Health & Safety

Red signs tell you something you **must not do**

Green signs give you **information.**

Yellow signs warn you of a potential **hazard.**

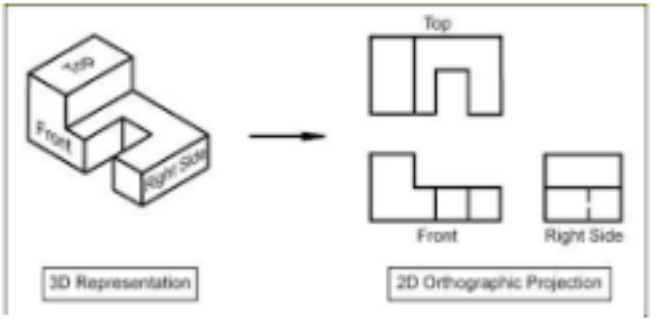
Blue signs tell you something you **must** do.

10 Health & Safety Rules in the workshop:

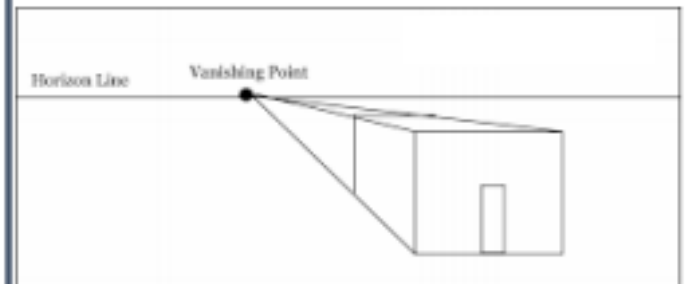
1. Do not run at anytime
2. Tie hair up and tuck loose items away
3. 1 person using a machine at a time
4. Stand behind the yellow line when somebody is on a machine
5. Do not talk to somebody whilst they are on the machine
6. Wear googles when instructed
7. Wear an apron (ensuring it is tied up)
8. Stack chairs/stools up at the side
9. Put bags/coats under the workbenches
10. Ask if you do not know how to use a tool or machine.

Technical Drawing Styles

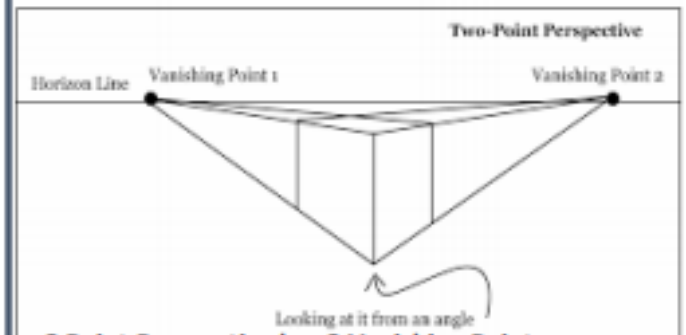
Freehand sketching drawings made without the use of drawing instru ments or straightedges.



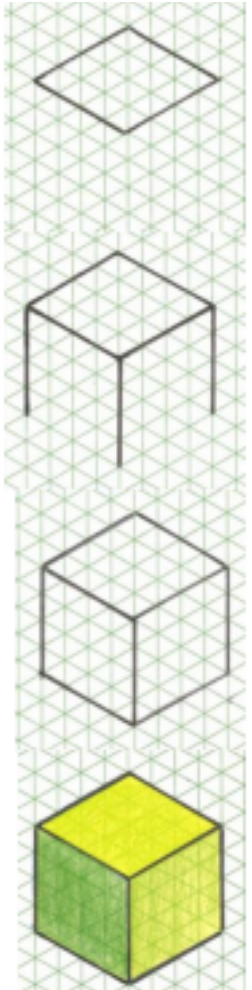
Orthographic Drawings show a 3D product in a 2D way.



1 Point Perspective has 1 Vanishing Point



2 Point Perspective has 2 Vanishing Points



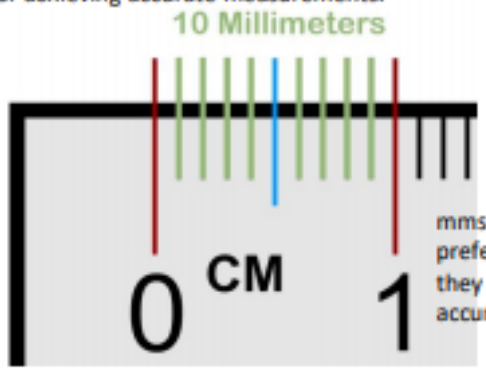
Isometric Drawing

Material Characteristics	
Hardness	resist cutting and indentations to its surface
Toughness	Ability to withstand shock
Strength	The ability to withstand being pulled or stretched, crushed or compressed or twisted.
Elasticity	Ability to be stretched and return to it's original size
Flexibility	The ability to bend without breaking and then spring back to its original shape.
Impact Resistant	Ability to resist sudden shocks
Strength to Weight Ratio	Measure of strength to weight, for instance Aluminium is a light weight material but is strong. Therefore having a high strength-to-weight ratio
Ductility	Ability to be stretched like the length of wire without breaking
Malleability	The ability to be hammered, rolled or pressed into shape without breaking
Durability	Able to last a long time

Using a Ruler:
Rulers are essential for achieving accurate measurements.

100cm = 1000mm
10cm = 100mm
1cm= 10mm
0.1cm = 1mm

- **1cm**
- **0.5cm**
- 10 Lines per centimeter



mms are used preferred as they are more accurate

Drama

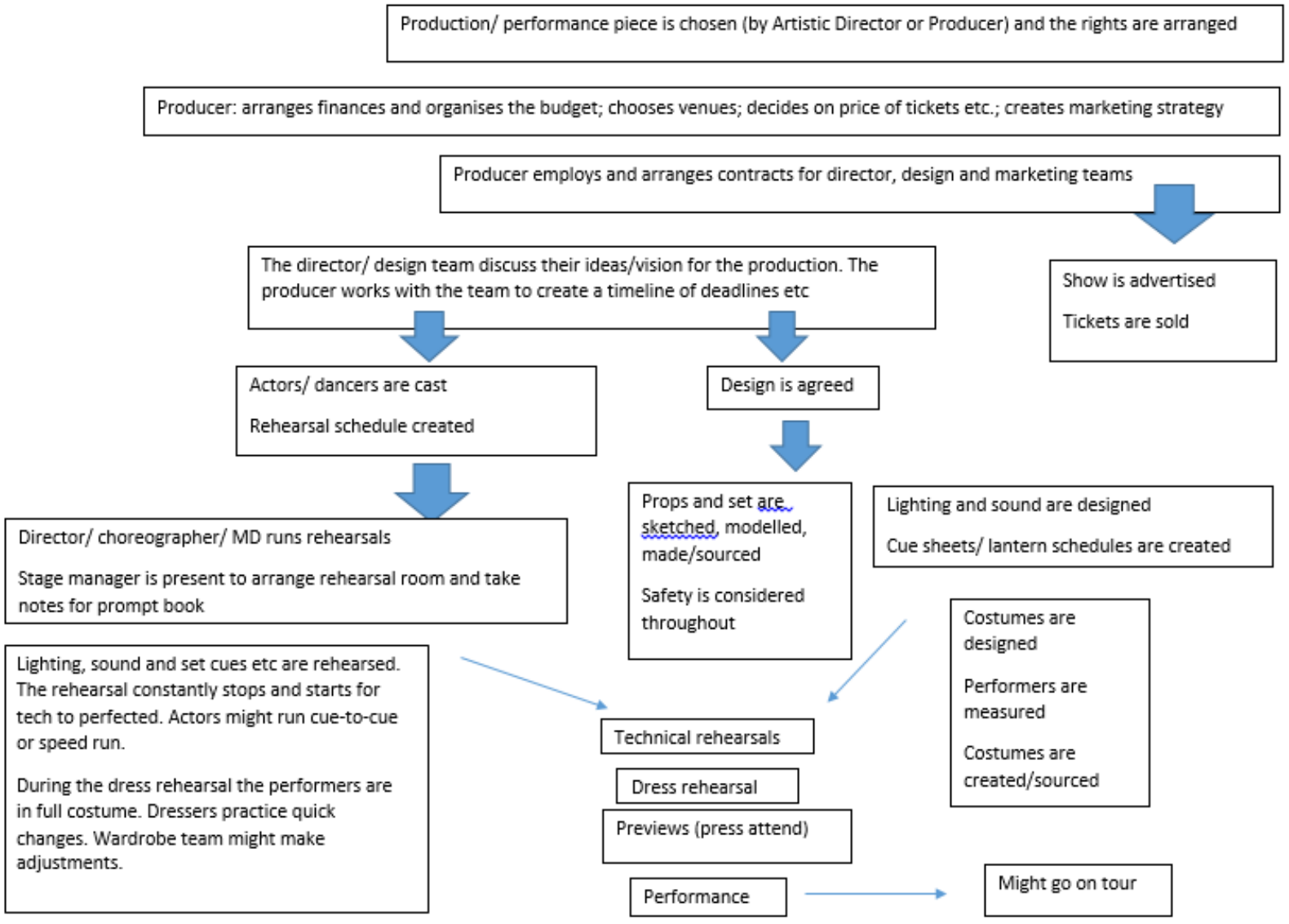
Features of Kneehigh's work:

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

Kneehigh's beliefs:

You don't have to perform in conventional theatres.
The script is only a starting point.
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.

Production flowchart:



GCSE Buddhist Belief (Paper 1) THS EPR

Key terms

Dharma	**The teaching of the** Buddha.
Dukkha	Suffering.
Anicca	Impermanence (things don't last).
Anatta	No permanent soul.
Jataka	Book containing stories about the life of Buddha.
Buddha	An enlightened being.
Ascetic	Harming your body to free your mind such as starving yourself.
Enlightenment	Finding out and understanding the truth about the universe and existence.
Siddharta Gautama	The birth name of the Buddha.
Mahayana	A branch of Buddhism associated with Tibet and China.
Therevada	The 'original' Buddhism that starter in India.
Paticca Samuppada	Dependent origination- each life/origin depends on the one before.
Meditation	Focussing deeply.
The 4 Sights	Old man, sick man, dead man and holy man.
Tanha	Craving.
Nirvana	Escape from the cycle of rebirth and dukkha.
Rebirth	After you die, your karma will begin another person's life.
Buddha-nature	The idea that we all have what it takes to be a Buddha!
Samsara	The trap of rebirth (shown visually by the wheel.
Arhat	The final life where you become a Buddha in Therevada.
Bodhisattva	Where you choose to 'reincarnate' and return to Samsara instead of going to Nirvana in order to help others.

Key teachings

The 8 Fold Path

8 things that must be done 'right' to gain good karma to get to Nirvana. Buddha called it a 'raft' to escape Samsara. (UT-SAL-EMC)

The 4 Noble Truths

The first thing Buddha taught to the ascetics who became the first converts. Dukka (suffering), Tanha (craving), Nirvana (non-existence), Magga.(The 8 Fold Path) DTNM

The 5 Skandhas

The 5 parts that make up a person. When we die, these piles fall apart and the next life starts as we have no soul and do not carry on (anatta). The Skandhas are taught using the chariot analogy from Nagasena II. Mental Form (thoughts), Consciousness (awareness), Physical Form (your body), Sensations (the 5 senses), Perception (recognition). MC PSP

The 3 Marks of Existence

Three things that harm us simply because we exist.
Dukkha (suffering is inevitable such as getting old, sick and dying), Anicca (things are impermanent like relationships and possessions) and Anatta (we have no soul - we cease when our skandhas fall apart). DAA

The 5 Precepts of the Laity

Vows of regular Buddhists - no killing, no stealing, no sexual misconduct, no substances that cloud the mind, no false speech (lies).

The 5 Precepts of the Sangha (monks)

Vows of monks (bikkhus) Own nothing, no sex, no high bed, no self-beautification, no eating after mid-day.

The 6 Realms of Existence

The 6 Realms (mindsets) you can be born into including the Hungry Ghosts, Animals, Angry Gods, Gods, Hell and Humans. You can only reach enlightenment from the Human Realm on the Wheel of Dependent Origination.

The 12 Niddanas

12 images on the outside of the Wheel of Dependent Origination that show how dukkha is caused (eg, the monkey eating fruit is craving).

The 3 Poisons

Shown in the middle of the wheel, hatred (snake), green (board and arrogance/ ignorance (cockerel) need extinguishing to escape rebirth.

Key Quotes

Walpola Rahula

Nirvana is 'cool water that calms the fever.'

Do no engage in 'foolish babble and gossip'.

Escape the 'round of rebirth'.

Buddha

Nirvana is 'the end'.

The 8 Fold Path is a 'raft' from Samsara to Nirvana.

Meditation 'frees us from Mara's fetter'.

Nagasena II

The Chariot Analogy

The Candle Analogy

The Turtle Analogy

Ninian Smart

Nirvana is 'the end'.

Jataka

Siddhartha has '3 mansions'.

His 'legs were like bamboo, his back was like a rope'.

Ultimate GCSE Questions List

Remember, each mark is worth a minute so a 5 marker should take 5 mins and a 4 marker should take 4 mins.

Paper 1- Buddhist Belief

4 markers

Give two contrasting ways that Buddhists are influenced by the 3 Marks of Existence.

Give two ways that Buddhists are influenced by the 4 Noble Truths

Give two ways Buddhists are influenced by the 8 Fold Path.

Explain two ways that Buddhists are influenced by the Wheel of Dependent Origination today.

Explain two ways that Buddhists are influenced by rebirth.

Give two contrasting Buddhist beliefs about Nirvana.

Give two different ways Buddhists are influenced by Dukkha.

Give two ways that Buddhists are influenced by Anatta.

Give two similar ways that Buddhists respond to teachings about Tanha.

Give two ways that Buddhists are influenced by the Life of the Buddha today.

Give two contrasting ways in which Buddhists are influenced by the Siddhartha Gautama being an ascetic.

Give two different ways in which a Buddhist is influenced by the 3 refuges.

Give two different ways a person could become an Arhat.

Give two ways Buddhists are influenced by the 4 Signs today.

5 markers

Explain two Buddhist teachings on Nirvana.

Explain two contrasting Buddhists teachings on Anicca.

Explain two ways in which Buddhists are influenced by the Wheel of Paticca Samupada.

Explain two different teachings about the 3 Marks of Existence.

Explain two ways in which Buddhists are influenced by the Life of the Buddha in contemporary Britain.

Explain two ways that Buddhists are influenced by the 4 Noble Truths.

Explain two Buddhists teachings about the 4 Noble Truths.

Explain two different types of Buddhism.

Explain two ways that Therevada is different to Mahayana.

Explain why two reasons why Buddhists think you should follow the Middle Way.

Explain two ways the Buddhists are influenced by the enlightenment of the Buddha.

Explain two different Buddhist teachings about rebirth.

Explain two ways that Buddhists are influenced by the 3 refuges.

Explain two reasons why Theravada Buddhists think only monks can reach enlightenment.

Explain two ways that a person could become a Bohisattva.

12 markers

‘Enlightenment was the most important event in the life of the Buddha.’

‘The 3 Fold way is all you need to get to Nirvana.’

‘You can only get enlightened if you are part of the Sangha.’

‘Anyone can reach enlightenment.’

The most important teaching of the Buddha was the 3 Marks of Existence.’

‘The most important of the 3 Marks of Existence is Anicca.’

‘The most important of the 4 Noble Truths is Tanha.’

‘The 8 fold Path is more important than the 4 Noble Truths.’

‘Knowing about the Wheel of Dependent Origination does not matter.’

‘ Most people will not reach Nirvana.’

‘It is better to be a Bohisattva than an Arhat.’

‘Women cannot become enlightened.’

‘ The 3 poisons are the most important part of the Wheel of Dependent Origination.’

‘You don’t need to know about rebirth to reach Nirvana.’

‘The most important teaching of the Buddha was the 5 Skhandas.’

‘ Magga is the most important teaching of the Buddha.’

Year 9 Food

Food

Todmorden High School

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.

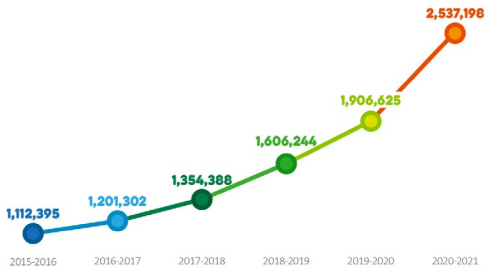
Religious dietary rules

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.

Food Poverty

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

Food bank usage over the last 5 years



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.

Section A: The challenge of natural hazards

NATURAL HAZARDS

Natural Hazard	Natural process threatens people or property.
Tectonic Hazard	Earthquake and volcanoes threatening people or property.
Risk	People's vulnerability, capacity to cope and nature of hazard.

TECTONIC HAZARDS

Primary Effect	Immediate. Buildings destroyed, people die.
Secondary Effect	Later. Homeless, lack of clean water, disease.
Immediate Response	Evacuate, search and rescue, provide clean water.
Secondary Response	Rehouse, rebuild, improve monitoring.
Destructive Margin	Oceanic crust subducts under continental crust. V+E.
Constructive Margin	Oceanic crust moves apart creates new land as magma rises. V+E.
Conservative Margin	Plates slide past each other with friction. E.
Reasons people live in tectonic areas	Always lived there, confident of monitoring, tourism, fertile soil.
Risk management	Monitoring, Prediction, Protection and Planning.
Hazard poor part of world	Haiti: Jan 2010, Richter 7, 200 000+ dead.
Hazard rich part of world	New Zealand: Sept 2010, Richter 7.1, 1 died initially [185 in aftershock].

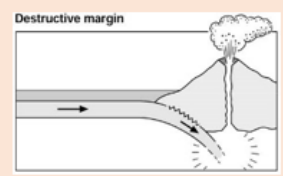
TECTONIC THEORY

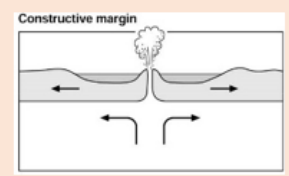
Key Term	Definition
Continental	Relating to a continent, eg Africa, Asia, Europe.
Convection current	A movement within the Earth's mantle caused by the heat of the core.
Dense	Crowded closely together.
Mantle	The semi molten layer of rock underneath the Earth's crust. This is the largest layer in the Earth's structure.
Lava **Magma**	Molten rock that is released from the Earth's core in a volcano or fissure. Molten rock that is still under the Earth's surface.
Molten	A term used to describe a liquid substance (eg rock, glass or metal) formed by heating a solid.
Plate boundary	The region where two or more tectonic plates meet. It is a zone of intense seismic activity.
Glossopteris	A plant that existed 200-300 million years ago. The fossil of this plant helps prove Pangea existed.
The Wallace Line	A line between Asia and Australasia where the ecosystems change and the flora and fauna are completely different.
Pangaea 2.0	The predicted reforming of a supercontinent in approximately 200 million years.
Composite volcanoes	The typical pointy cone style volcano that has explosive eruptions.

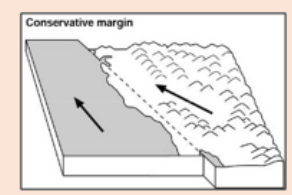
Plate Movement

Volcanoes

Plates either move towards each other (**destructive** margin) away from each other (**constructive**) or past each other (**conservative**).







Year 9 History – Half Term 1

The British Empire

Todmorden High School

Key people

Empire Builders

Queen Victoria
Queen of England (1838-1901) was queen of England at the height of the British Empire and was head of state for nearly a third of the globe. In 1876, she took the title of Empress of India.

Australia

James Cook
First Englishman to discover coast of Australia and charter the land. Established New South Wales as a British penal colony.

Arthur Phillips
Phillips was the first governor of New South Wales and oversaw the penal colony. He ensured that people were treated fairly. It was so successful that, once criminals served their sentence, they stayed as Australian citizens.

Africa

Cecil Rhodes
English businessman who made his fortune selling diamonds mined from south Africa. He became so wealthy he named the country after himself, Rhodesia (now Zimbabwe). He remains still a controversial figure.

India

Robert Clive
English businessman who seized large areas of Bengal for the East India Company. This later became part of British controlled India.

Key terms

Aboriginal	Original inhabitants of Australia.
Britannia	A female figure used to symbolise the British Empire.
Colony	A country that is part of an empire.
East India Company	Trading company that gradually took control of India.
Empire	A group of countries, people or land ruled by one single country referred to as the "mother" country.
Famine	A shortage of food.
Jewel in the crown	The largest and richest part of Britain's Empire.
Imperialism	The act of building an empire.
Nationalism	Wanting your country to be the best or to be free from someone's empire.
Penal colony	A territory used as a place for housing prisoners.
The Raj	The period of British rule in India after 1857. From the Hindi word for reign.

Key events

Australia

- In 1768 James Cook charters the coast of Australia, claiming Botany Bay for the British Empire. English settlers cast out Aboriginal Australians.
- Australia was set up as a penal colony to house Britain convict population. Governor Arthur Phillips oversaw the colony, which was a success. This resulted in some wanting to remain in Australia as citizens.
- In 1851, Edward Hargreaves found gold in an Australian river. This sparked a mass movement of people to Australia: the population of Melbourne reached 123,000 by 1854.

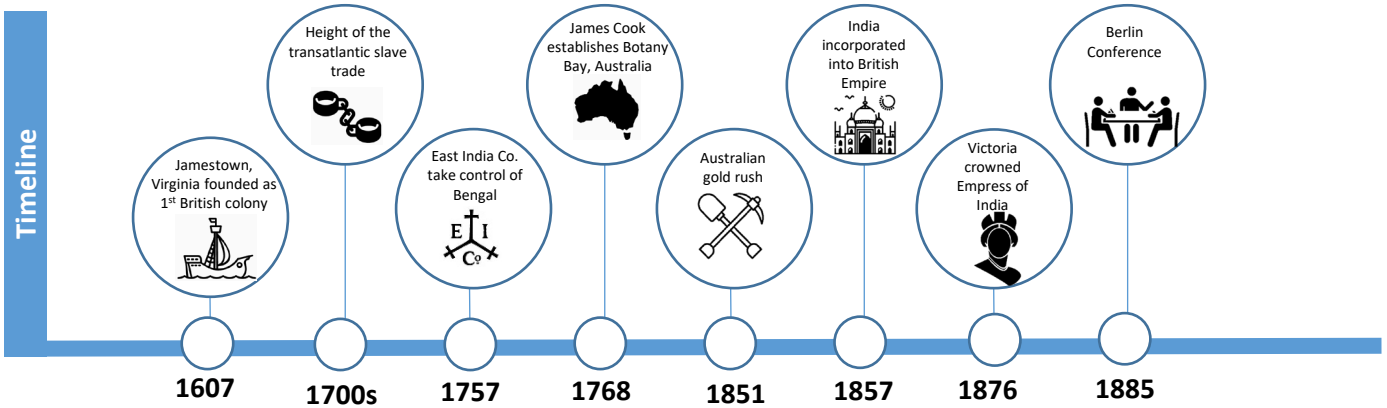
Africa

- English traders had been involved with the slave trade since 16th century.
- By the mid-1800's European countries began competing for African land. A large empire meant international power and recognition.
- In 1854 *The Times* named this hunt for African territories the "Scramble for Africa".
- In 1885, the European powers came together at the Berlin Conference. Here, Africa was carved up and distributed to the different European countries. There was not a single representative from Africa present at these talks.
- Britain controlled 32% of Africa.

India

- India was regarded as the 'Jewel in the Crown of the British Empire'.
- Originally, the East India Company (a trading company set up under Elizabeth I) controlled large parts of India. Robert Clive seized Bengal for the company, raiding it's treasury and increasing the wealth of the East India Co.
- In 1857 there was a mass uprising by Indian Soldiers, resulted in thousands of deaths (both Indian and British). When order was restored, the British government took over control of India, making it part of the British Empire. This signaled the start of the British Raj in India
- In 1876, Queen Victoria was proclaimed Empress of India, despite never visiting the country.

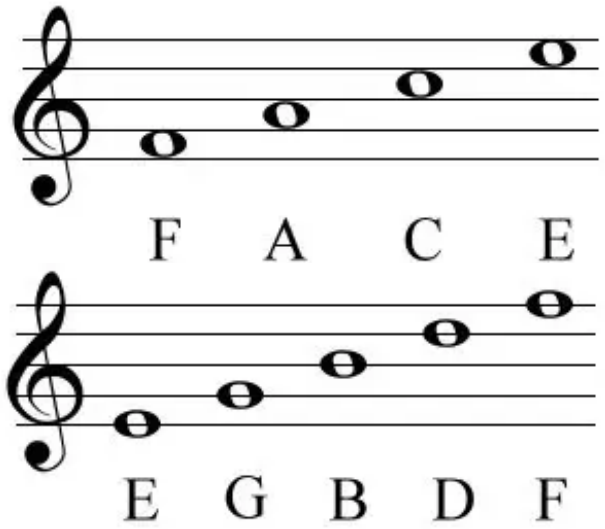
Timeline



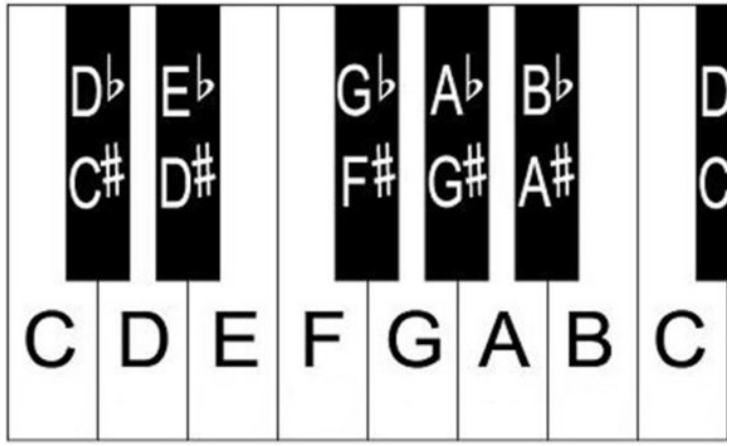
Year 9 Music — Composition 1 — Todmorden High School

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



Keyboard Diagram



Famous musicians you will study
- Bessie Smith.
- Sonny Terry and 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.

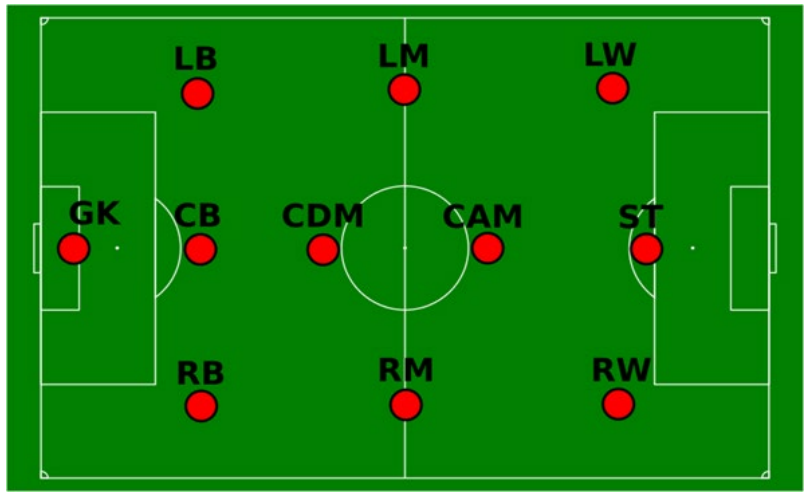
Musical elements: Dynamics, rhythm, pitch, structure, melody, instrumentation, tempo, texture, tonality, harmony.

Subject Knowledge Organiser
Football – Rules, Player Positions & Pitch Dimensions

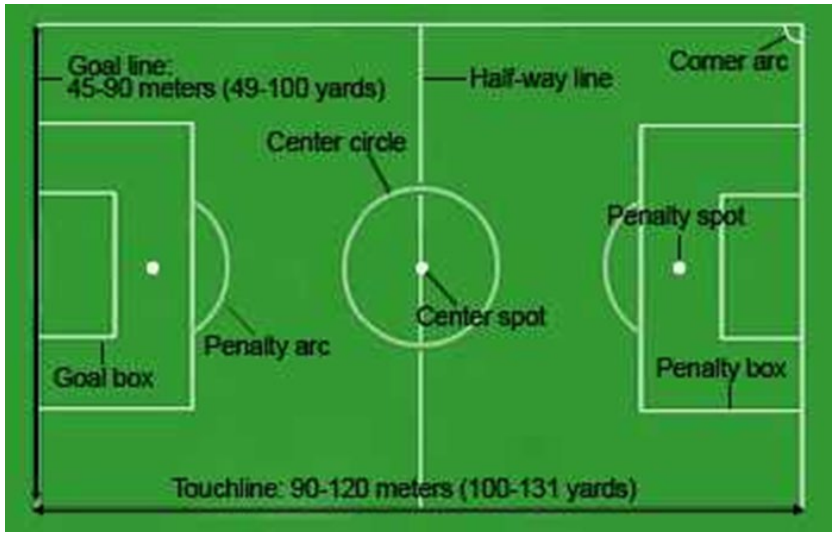
Rules

- A senior football match consists of two 45-minute halves and must have a 15-minute break in the middle.
- A team can start with a maximum of 11 players, of which one is the designated goalkeeper.
- To continue a match, a team must have a minimum of 7 players on the field.
- A team is able to make substitutions at any time of the match and are able to make a maximum of three changes.
- A competitive game must be officiated by a referee and two assistant referees, also known as linesmen.
- The whole ball must cross the goal line for it to constitute a goal.
- A referee may award a foul if they believe an unfair act is committed by a player. A foul contravenes the laws of the game and can be given for a range of offences (for example, kicking the player, pushing, handball etc).
- Fouls are punished by the award of a free kick (direct or indirect, depending on the offence) or penalty kick to the opposing team if it is committed in the penalty box.
- In cases of foul play, a referee can penalise players with either a yellow or red card. A yellow card gives a player a warning about their conduct and a red card requires them to leave the pitch.
- In the event that a player receives two yellow cards, the referee will automatically show a red card.
- A throw-in is awarded to a team if the opposition kicks the ball over the side-lines.
- A corner kick is awarded to a team if the opposition kicks the ball over the goal line and either side of the goal posts.
- A player is deemed offside if they are in front of the last defender when a teammate passes the ball through to them.

Player Positions



Pitch Dimensions



https://www.bbc.com/bitesize/guides/zwfnycw/revision/1

Subject Knowledge Organiser
Football – Short/Long Pass, Control, Block Tackle, Throw In & Heading

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 contact 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 importing 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.

Subject Knowledge Organiser
Netball – Rules, Officials, Scoring, Player Positions & Court Dimensions

Rules

- ❑ Players are not allowed to travel with the ball.
- ❑ A team can have up to 12 players but only seven are allowed to play on court.
- ❑ Defending players are unable to snatch or hit the ball out of another player's hands.
- ❑ A defending player is only allowed to stand beside the player with the ball until it has left their hands.
- ❑ A defending player must stand three feet away from the person with the ball.
- ❑ An attacking player is unable to hold the ball for more than three seconds.
- ❑ Players must remain within their designated zones.
- ❑ The team retaining possession after the ball goes out of play have three seconds at the side-line to get the ball back into play.

Officials

During a competitive game of netball there are two referees and up to two scorekeepers and timekeepers officiating.

Scoring

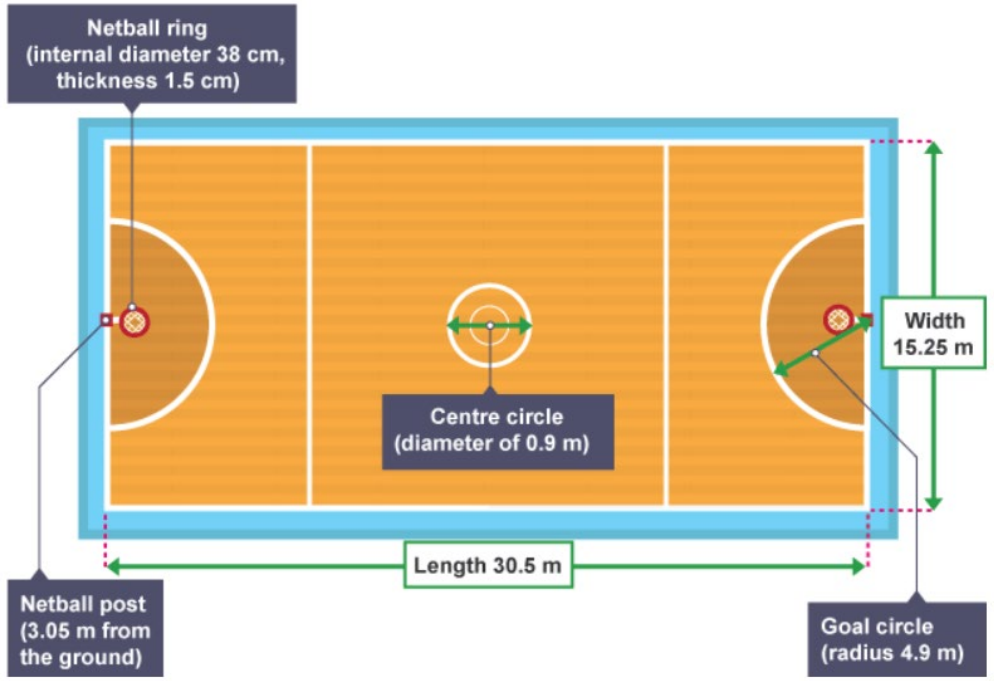
In a game of netball there are two clear ways to score points:

1. In open play, if a shot is successfully scored from inside the goal circle, the team gains one point.
2. If the team is awarded a technical foul then they will receive a free shot at the net. A successful shot will be awarded with one point.

Player Positions

GS	Goal shooter	GA	Goal attack	WA	Wing attack
C	Centre	WD	Wing defence	GD	Goal defence
GK	Goal keeper				

Court Dimensions



Subject Knowledge Organiser
Netball – Bounce Pass, Chest Pass, Shoulder Pass & Pivoting

Bounce Pass

A bounce pass is a short pass that enables the player to find a teammate in a crowded area. The height of the ball makes it difficult for the opposition to reach and intercept.

Stage one
Feet shoulder-width apart in opposition, with knees bent. Place hands each side and slightly behind the ball, with the fingers comfortably spread. Hold the ball at waist level, with elbows tucked in.

Stage two
Step in the direction of the pass, through extending your legs, back and arms. The wrist and fingers should be forced through the ball releasing it off the first and second fingers of both hands. Follow through with the arms fully extended, fingers pointing at the target and thumbs pointing to the floor.

Chest Pass

A chest pass is a very fast and flat pass which enables a team to move quickly up a court in a precise and accurate fashion.

Stage one
Stand with feet shoulder width apart and on the balls of your feet, with back straight and knees slightly bent. Place hands on the sides of the ball with the thumbs directly behind the ball and fingers comfortably spread.

Stage two
The ball should be held in front of the chest with the elbows tucked in. Step in the direction of the pass, by extending their legs, back, and arms. Push the ball from the chest with both arms (not from one shoulder). Fingers are rotated behind the ball and the thumbs are turned down.

Stage three
The back of the hands face one another with the thumbs straight down. Make sure the ball is released off the first and second fingers of both hands. Follow through to finish up with the arms fully extended, fingers pointing at the target and thumbs pointing to the floor.

Shoulder Pass

A shoulder pass is a very dynamic, fast and long pass which enables a team to switch positions on court very quickly to either find a player in space or break defensive screens.

Stage one
Player's feet should be shoulder width apart in opposition. Opposite foot forward to throwing arm. Stand on balls of feet with toes pointing toward target, and knees slightly bent. Hold the ball at head height, slightly behind your head. Elbow should be at a 90° angle. Fingers spread behind the ball.

Stage two
Step in the direction of the pass by transferring your body weight from back foot to front foot. Pull the arm through with the elbow leading. To follow through, fully extend your arm and wrist. Point your fingers in the same direction as the pass, with palms facing down.

Pivoting

The pivoting action is a swivel movement that allows the player to move on a fixed axis to either pass or shoot.

Stage one
Run towards the ball and jump by extending the legs and ankles. Keep your eyes firmly fixed on the ball. Bring your hands out in front of your body at chest height with fingers spread open and pointing up.

Stage two
In the air catch the ball with thumbs an inch or two apart making a ‘W’ shape. Land on the ball of one foot on the ground. Flex your knee and ankle as your foot hits the floor.

Stage three
Stand with knees slightly bent and your feet shoulder width apart. Bring the ball into your body to protect it. Pivot by rotating yourself on the ball of your landing foot. Keep your upper body straight and head up. Make sure the hip of your pivoting leg is pointing in the direction you are aiming to pass the ball in. You can move or step with the other foot any number of times. You are not allowed to lift the foot you are pivoting on before you release the ball.

Year 9 Spanish – Half Term 1a

La comida y la bebida - Food and drink

Todmorden High School

¿Qué te gusta comer y beber? -

What do you like to eat and drink?

Me encanta(n) – I love
Me gusta(n) – I like
No me gusta(n) – I don't like
Odio - I hate
Me mola(n) – I really like
Me flipa(n) – I'm crazy about
No soporto – I can't stand
Me da(n) asco - …repulses me

Me gusta* comer… - I like eating…

Me gusta* tomar … - I like having…

Me gusta* beber… - I like drinking…

¡OJO!
Change the opinion phrase (do not use the 'n' ending) to express alternative opinions.

los mariscos – seafood
las verduras - vegetables
el pollo – chicken
las salchichas – sausages
el pescado – fish
la fruta – fruit
el queso – cheese
la carne – meat
los perritos calientes – hot dogs
el jamón – ham
los bocadillos – sandwiches
los espaguetis – spaghetti
la hamburguesa – hamburger
el zumo (de naranja) *– orange* juice
la Coca Cola – coca cola
la naranjada – orangeade
el agua mineral – mineral wáter
los caramelos - sweets
el chocolate - chocolate

la ensalada - salad
la sopa - soup
el arroz - rice
los huevos - eggs
las tartas - cakes
el helado – ice cream
el yogur - yoghurt
las chuletas - chops
las gambas - prawns
el pan - bread
la pizza – pizza
las patatas fritas - chips
la limonada - lemonade

porque - because

dado que – as/given that

ya que- because /as

es - it is

son - they are

muy – very

bastante – quite

extremamente- extremely

un poco - a little

sano/a(s) – healthy
malsano/a(s) - unhealthy
delicioso/a(s) - delicious
rico/a(s) – tasty/rich
grasiento/a(s) – greasy/fatty
salado/a(s) - salty
nutritivo/a(s) - nutritious
sabroso/a(s) - tasty
picante(s) - spicy
dulce(s) – sweet
asqueroso/a (s) - disgusting
repugante(s) – repugnant

¡OJO!
Change the name of the fruit to change the juice.

SCAN ME

¡ESCUCHA! – SCAN ME FOR PRONUNCIATION.

¿Cuál es tu comida preferida? / ¿Cuál es tu comida favorita? –

What is your favourite food?

Mi comida preferida es…/
Mi comida favorita es…
My favourite food is…

Prefiero comer…
I prefer eating…

la comida rápida – fast food
la comida italiana – Italian food
la comida india – Indian food
la comida mexicana – Mexican food
la comida caribeña – Carribbean food
la comida china – Chinese food
la comida vegetariana – vegetarian food
la comida inglesa – English food
la comida española – Spanish food

¿Qué comes y bebes normalmente?

What do you normally eat and drink?

Normalmente – Normally
Todos los días- Every day
Siempre - Always
Nunca – Never
A veces - Sometimes
Raramente - Rarely
A menudo - Often

desayuno - I have for breakfast
tomo - I have
ceno - I have for dinner
almuerzo - I have for lunch
como – I eat
bebo – I drink
meriendo – I have for a snack

+ Any food item(s)

¡OJO!
You do not need to use the articles (el, la, los, las) when saying what you eat and drink, you only need them for opinions.

Los conectivos - Connectives

y – and
con - with
también - also
además - moreover
sin embargo - however
no obstante - nonetheless

La comida y la bebida - Food and drink

¿Qué comiste y bebiste ayer?

What did you eat and drink yesterday?

Ayer - Yesterday
Anoche – Last night
Esta mañana – This morning

para el desayuno… - for breakfast…
para la comida… - for lunch…
para la cena… - for dinner…

desayuné - I had for breakfast
tomé - I had
cené - I had for dinner
almorcé - I had for lunch
comé – I ate
bebé – I drank
merendé – I had for a snack

¿Qué vas a tomar mañana?

What are you going to have tomorrow?

Mañana - Tomorrow
Mañana por la mañana – Tomorrow morning
Mañana por la tarde – Tomorrow afternoon

voy a + desayunar/ tomar/ cenar/ almorzar/ comer/beber/ merendar

I am going to eat for breakfast/ have/ have for dinner/have for lunch/ eat/ drink/ have for a snack

+ Any food item(s)

¡OJO!
You do not need to use the articles (el, la, los, las) when saying what you eat and drink, you only need them for opinions.

Las frutas y las verduras – Fruit and vegetables

las fresas – strawberries
la piña - pineapple
las manzanas - apples
las peras - pears
el limón - lemon
las judías verdes - green beans
la lechuga – lettuce
los plátanos - bananas
el melon - melon
el melocotón - peach
las naranjas - oranges
las cebollas - onions
el pepino - cucumber
las zanahorías - carrots

¿Qué desea?

What would you like?

En el supermercado

In the supermarket

Déme… – Give me..

Quisiera… - I would like…

¿Cuánto cuesta…?
How much does… cost?

¿Cuánto es…?
How much is…?

un kilo de… -a kilo of…
quinientos gramos de…- 500g of …
una taza de…- a cup of…
una lata de…- a tin of…/a can of…
una caja de…- a box of…
un litro de… - a litre of…
una botella de…- a bottle of…
una barra de…- a bar of/a stick of…
un cartón de… – a carton of…
una docena de… - a dozen…
un paquete de… – a packet of…

+ Any food item(s)

¡OJO!
You do not need to use the articles (el, la, los, las) when saying what you are buying.

Vocabulario útil – Useful vocabulary

la cuenta – bill
una cuchara - spoon
un cuchillo – knife
un tenedor – fork
de primero - for the first course
de segundo – for the second course
de postre - for dessert
el sal - salt
la pimienta - pepper

¿Qué va a tomar?

What are you going to have?

En el restaurante

In the restaurant

El/La camarero/a – Waiter/Waitress

¿Qué desea? - What would you like?
¿Y para beber? - And to drink?
¿ Y para comer? - And to eat?
Vale. - OK
En seguida. - Straight away!
¡Qué aproveche! - Enjoy your meal!
¡Aquí tiene! - Here you go!
¿Algo más? - Anything else?

El/La cliente/a - Customer

Para mí /él/ella… – For me/him/her…

Quisiera… – I would like…

¿Me trae…? Can I have…?

un bocadillo de chorizo - a chorizo sandwich
una ración de tortilla - a portion of tortilla
las patatas bravas - fried potato wedges
las aceitunas - olives
un café con leche - a coffee with milk
un vaso de vino tinto - a glass of red wine
una cerveza - a beer
un agua mineral con gas - fizzy water
un agua mineral sin gas - still water