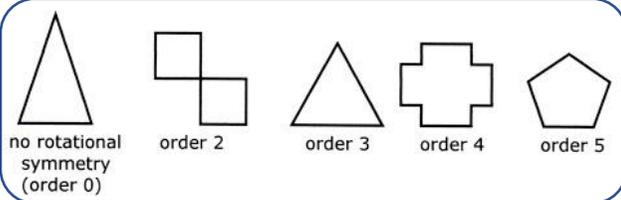


Prior Knowledge

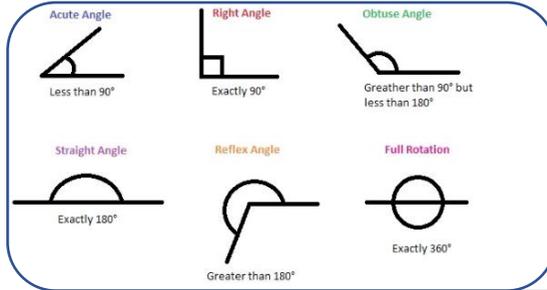
An object's degree of **rotational symmetry** is the number of distinct orientations in which it looks exactly the same for each **rotation**.



Number of Sides	Polygon Name
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
12	dodecagon
n	n-gon

An **Interior Angle** is an angle inside a shape.

The **Exterior Angle** is the angle between any side of a shape, and a line extended from the next side.



Acute Triangle All three angles are acute (less than 90°). 	Equilateral Triangle All three sides are congruent (same size).
Right Triangle One of the angles is a right angle (90°). 	Isosceles Triangle Two sides are congruent (same size).
Obtuse Triangle One of the angles is an obtuse angle (180°). 	Scalene Triangle No sides are congruent (same size).

Types of Quadrilateral

square 4 right angles 4 equal sides Opposite sides are parallel All sides the same length	rhombus 0 right angles 4 equal sides Opposite sides are parallel All sides the same length	kite 0 right angles 2 sets of equal sides No sides are parallel 2 pairs of sides the same length
rectangle 4 right angles 4 equal sides Opposite sides are parallel Opposite sides the same length	parallelogram 0 right angles 2 sets of equal sides Opposite sides are parallel Opposite sides the same length	trapezium 0 right angles 2 sets of equal sides 1 set of sides are parallel sides can be any length

www.lms2learn.co.uk

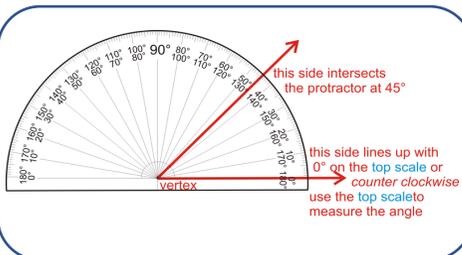
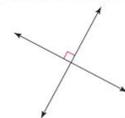
Angles in a triangle add to 180°.

Angles in a quadrilateral add to 360°.

Parallel lines are lines in the same plane that never intersect. They are always the same distance apart.



Perpendicular lines are lines that meet at a right angle, that is, at an angle that measures 90°.



Foundation – Unit 6 - Angles

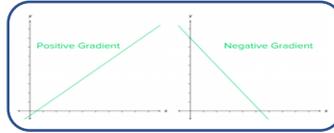


Congruent Shapes	Exact same shape and size, but reflected, rotated or translated.	SIMILAR VS CONGRUENT
Similar Shapes	Same shape but enlarged (bigger or smaller). Sides are in the same ratios.	
Polygon	2-dimensional shape bound by straight sides.	Examples: poly-gon many - corners Non-examples:
Regular Polygon	All equal side lengths and all equal angles.	
Irregular Polygon	Unequal side lengths and unequal angles.	
Tessellation	Shapes fitting together. For shapes to tessellate, all angles at the point where the shapes meet must add to 360°.	
Angle sum	Sum of the interior angles of a polygon.	Sum = (sides – 2) x 180
Interior Angle	An Interior Angle is an angle inside a shape.	
Exterior Angle	The Exterior Angle is the angle between any side of a shape, and a line extended from the next side.	
Straight Line	Angles on a straight line add up to 180°.	Angles add up to 180°: Angles don't add up to 180°:

Prior Knowledge

Midpoint of two numbers: add the two values and divide the result by 2.

$$M = \frac{x_1 + x_2}{2}$$



Mode The mode is the value that appears most often in a set of data.

The mean is the total of all the values, divided by the number of values.

Mean

Median The median is the middle number in a list of numbers ordered from lowest to highest.

The range is the difference between the lowest value and the highest value.

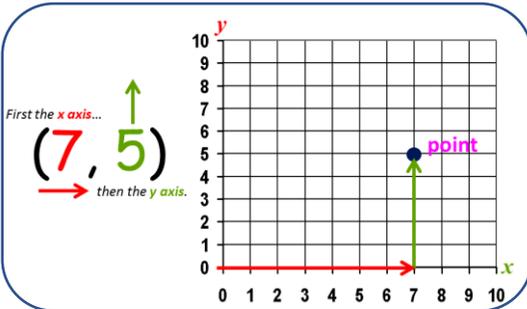
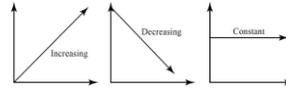
Range

A tally chart should have titles on columns and clearly drawn tallies.

A year – contains 12 months
A quarter – refers to a 3 month period.

Increase – the values are going up.
Decrease – the values are going down.
Constant rate – going up or down by the same value each time.

Categories	Tallies	Total
Walk		7
Bike		3
Car		4
Bus		12



Greater than $>$ Greater than or equal to \geq
Less than $<$ Less than or equal to \leq
Not equal to \neq

Frequency – The amount of times something occurs

Stem and Leaf Diagram – Splits values by place value. Shows spread. Needs a key.

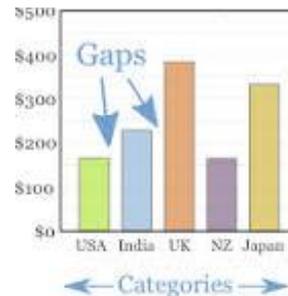
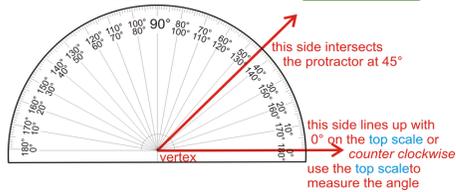
A bar chart should have a title, titles on both axes, equal scale on the y axis and gaps between the bars.

15, 16, 21, 23, 23, 26, 26, 30, 32, 41

Stem	Leaf
1	5 6
2	1 3 3 6 6
3	0 2
4	1

how to place "32"

Key
1 | 2 = 12



Key Concepts

Foundation – Unit 7 – Averages and Range

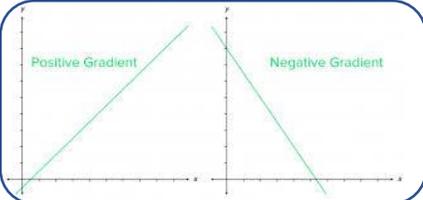
Mean	Total of the values divided by the number of values.	<p>Mean Add all the numbers then divide by the amount of numbers 9, 3, 1, 8, 3, 6 $9 + 3 + 1 + 8 + 3 + 6 = 30$ $30 \div 6 = 5$ The mean is 5</p>																		
Frequency	The total number of values.	<table border="1"> <thead> <tr> <th>Club</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Hockey</td> <td> </td> <td>5</td> </tr> <tr> <td>Badminton</td> <td> </td> <td>7</td> </tr> <tr> <td>Football</td> <td> </td> <td>5</td> </tr> </tbody> </table>	Club	Tally	Frequency	Hockey		5	Badminton		7	Football		5						
Club	Tally	Frequency																		
Hockey		5																		
Badminton		7																		
Football		5																		
Median	Middle value when the data is written in order. When n data values are written in order, the median is $(n+1)/2$ th value.	<p>Median Order the set of numbers, the median is the middle number 9, 3, 1, 8, 3, 6 1, 3, 3, 6, 8, 9 The median is 4.5</p>																		
Outlier	An extreme value that doesn't fit the overall pattern.																			
Modal class	Class with the highest frequency.	<p>Mode The most common number 9, 3, 1, 8, 3, 6 The mode is 3</p>																		
Mode	Data value with the highest frequency.	<p>Population</p>																		
Sample	A selection taken from a larger group that will, hopefully, let you find out things about the larger group.	<p>Are the Samples Biased or Unbiased? Improve the football stadium or buy band instruments?</p> <table border="1"> <thead> <tr> <th>SAMPLE A</th> <th>SAMPLE B</th> </tr> </thead> <tbody> <tr> <td>Members of the cheerleading team (BIASED)</td> <td>Two students from each table at lunchtime (UNBIASED)</td> </tr> </tbody> </table>	SAMPLE A	SAMPLE B	Members of the cheerleading team (BIASED)	Two students from each table at lunchtime (UNBIASED)														
SAMPLE A	SAMPLE B																			
Members of the cheerleading team (BIASED)	Two students from each table at lunchtime (UNBIASED)																			
Population	The whole group that is being studied.																			
Bias	A sample is biased if individuals or groups from the population are not represented in the sample.																			
Ratings	Number of people who watched a programme.	<table border="1"> <thead> <tr> <th>Series One</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>Ratings (millions)</td> <td>6.3</td> <td>5.9</td> <td>5.6</td> <td>5.7</td> <td>5.5</td> </tr> <tr> <td>Appreciation figure (%)</td> <td>74</td> <td>76</td> <td>74</td> <td>74</td> <td>73</td> </tr> </tbody> </table>	Series One	1	2	3	4	5	Ratings (millions)	6.3	5.9	5.6	5.7	5.5	Appreciation figure (%)	74	76	74	74	73
Series One	1	2	3	4	5															
Ratings (millions)	6.3	5.9	5.6	5.7	5.5															
Appreciation figure (%)	74	76	74	74	73															
Appreciation Figure	The percentage of viewers who describe it as "good" or "excellent".	<p>Range The difference between the highest number and lowest number 9, 3, 1, 8, 3, 6 $9 - 1 = 8$ The range is 8</p>																		
Range	Shows the spread of the data. The difference between the largest and smallest value.																			

Prior Knowledge

The equation of a straight line is given by $y=mx+c$.

Horizontal lines have the equation $y=$ ___
Vertical lines have the equation $x=$ ___

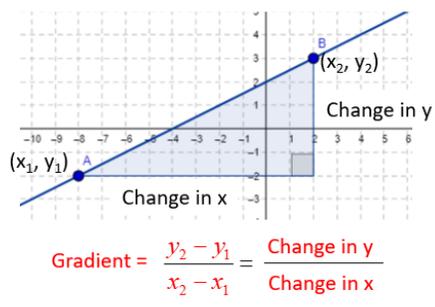
$y = mx + c$
gradient y-intersect



Speed Distance Time

Speed = $\frac{\text{Distance}}{\text{Time}}$
Distance = Speed \times Time
Time = $\frac{\text{Distance}}{\text{Speed}}$

Gradient of a Straight Line



Parallel lines are lines in the same plane that never intersect. They are always the same distance apart.

Perpendicular lines are lines that meet at a right angle, that is, at an angle that measures 90°.

A quadratic expression is an **expression** that has a variable that's squared and no variables with powers higher than 2 in any of the terms.

Triangle
Area = $\frac{1}{2} \times b \times h$
b = base
h = vertical height

Rectangle
Area = $w \times h$
w = width
h = height

A table of values is used to calculate the y value by substituting the x value into the equation.

x	$y = 2x+3$	y	(x,y)
-3	$y = 2(-3)+3$	-3	(-3,-3)
-2	$y = 2(-2)+3$	-1	(-2,-1)
-1	$y = 2(-1)+3$	1	(-1,1)
0	$y = 2(0)+3$	3	(0,3)
1	$y = 2(1)+3$	5	(1,5)
2	$y = 2(2)+3$	7	(2,7)
3	$y = 2(3)+3$	9	(3,9)

Types of Graphs

Key Concepts

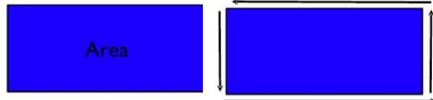
Higher – Unit 6 – Graphs

Linear Equation	Generates a straight-line (linear) graph. The equation for a straight line graph is written as $y=mx+c$.	$y = mx + c$ gradient y-intersect
Linear Function	Has a graph that is a straight line,	
Velocity	Speed in a particular direction.	Velocity "speed in a given direction"
Velocity-Time Graph	Shows how velocity changes over time.	
Line Segment	Section of a line.	 $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$
Midpoint of a line segment	The point exactly in the middle.	
Perpendicular	Lines which cross at 90° The product of the two gradients is -1. When a graph has gradient m, the perpendicular gradient is $-1/m$	
Quadratic Equation	Contains a term in x^2 but no higher or negative power of x. The graph is a curve called a parabola .	$ax^2 + bx + c = 0$ A General Quadratic Equation
Quadratic Function	Has a graph which is a parabola.	
Minimum / maximum point	A quadratic graph has a point where the graph turns.	
Solutions	A quadratic equation can have 0, 1 or 2 solutions. A cubic equation can have 1, 2 or 3 solutions.	
Cubic Function	Contains a term in x^3 but no higher power of x. It can also have terms in x^2 and x, and number terms.	 $2x^3 + x^2 - 13x + 6 = 0$
Reciprocal Function	In the form k/x (where k is a number). The x and y axes are asymptotes to the curve.	 $f(x) = \frac{1}{x}$
Asymptote	A line that the graph gets very close to but never actually touches.	
Equation of a circle	With a centre (0,0) and radius r, the equation of a circle is $x^2 + y^2 = r^2$	 $x^2 + y^2 = r^2$

Prior Knowledge

Area is the amount of space an object takes up

Perimeter is the distance around an object



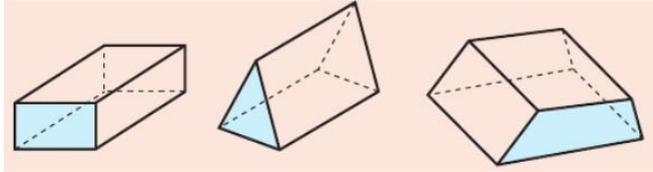
Volume of Cube

Volume of cube with side lengths s
 $V = s \times s \times s = s^3$

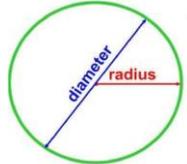
	length \times width
	$\frac{1}{2}$ base \times perpendicular height
	base \times perpendicular height

A prism is a 3D solid that has the same cross-section all through its length.

Volume is measured in mm^3 , cm^3 or m^3 .
 Volume of a prism = area of cross-section \times length.



Greater than $>$ Greater than or equal to \geq
 Less than $<$ Less than or equal to \leq
 Not equal to \neq



Area of a circle = $\pi \times \text{radius}^2$
 Circumference of a circle = $\pi \times \text{diameter}$
 remember that the **diameter = 2 x radius**

The **circumference** of a circle is its perimeter.

Angles around a point add up to 360°.

Converting AREA Units

AREA consists of Square Units, so we need to **SQUARE** all our Lengths.

$\times 1000^2$	$\times 100^2$	$\times 10^2$	
km^2	m^2	cm^2	mm^2
$\div 1000^2$	$\div 100^2$	$\div 10^2$	

$5\text{km}^2 = ? \text{m}^2$ Need to $\times 1000^2$ $5 \times 1000 \times 1000 = 5\,000\,000 \text{m}^2$ ✓
 $1200\text{cm}^2 = ? \text{m}^2$ Need to $\div 100^2$ $1200 \div 100 \div 100 = 0.12 \text{m}^2$ ✓

Converting Metric Lengths

$\text{km} \xrightarrow{\times 1000} \text{m} \xrightarrow{\times 100} \text{cm} \xrightarrow{\times 10} \text{mm}$
 $\text{mm} \xrightarrow{\div 10} \text{cm} \xrightarrow{\div 100} \text{m} \xrightarrow{\div 1000} \text{km}$

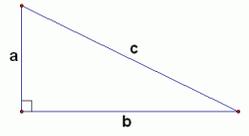
The net of a cylinder is made up of 2 circles and a rectangle.

$A = \pi r^2$

$A = L \times W$
 = height \times circumference

$A = \pi r^2$

Pythagoras' Theorem:
 $a^2 + b^2 = c^2$ where c is the longest side in a right-angled triangle.



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.

Key Concepts

Higher – Unit 7 – Area and Volume

1 Hectare	The area of a square 100m by 100m. $1 \text{ ha} = 100\text{m} \times 100\text{m} = 10000\text{m}^2$ Areas of land are measured in hectares.	
Truncate	To truncate, remove the other digits without rounding.	5.694 truncated to 1 digit is 5.
Error Interval	A measurement could be 10% larger or smaller than the one given.	
Dimensions	Length, width, height. Measurements of the object.	<p>Length 1 dimension</p> <p>Length, Width 2 dimensions</p> <p>Length, width, height 3 dimensions</p>
Surface area	The total area of all the faces of a 3D solid.	
Capacity	The amount of liquid 3D object can hold. Measure in millilitres and litres.	$1 \text{ cm}^3 = 1 \text{ ml}$ $1000 \text{ cm}^3 = 1 \text{ litre}$
Arc	Part of the circumference of a circle.	
Sector	A slice of a circle, between an arc and two radii.	
Area conversion	$1\text{m} = 100 \text{ cm}$ $1\text{m} \times 1\text{m} = 1\text{m}^2$ $100\text{cm} \times 100 \text{ cm} = 10000\text{cm}^2$ To convert cm^2 to m^2 , divide by 10000.	
Isosceles Trapezium	A trapezium in which the non-parallel sides are equal in measure. The bases are parallel and the non-parallel sides are equal in length.	
Spheres	Volume of a sphere = $\frac{4}{3} \pi r^3$	



CHARACTERS

Ebenezer Scrooge	The misery protagonist, who seeks money above love and shows no concern for others, especially the poor and needy. Sceptical towards the supernatural, his haunting by the visiting spirits eventually leads to his redemption.
Bob Cratchit	Scrooge's long suffering, good-natured clerk, father of a large family who cherish one another despite facing extreme hardship.
Fred	Scrooge's warm-hearted, charitable nephew, never gives up on his uncle, despite facing constant rejection.
Mr Fezziwig	A kind-hearted, jovial old merchant for whom Scrooge apprenticed as an ambitious, young man.
Ghost of Jacob Marley	The spectral form of Scrooge's seven years dead, business partner, forced to wander the earth in heavy chains as punishment for his past sins, warns Scrooge of his fate.
Ghost of Christmas Past	A strange, fluctuating spirit who shows Scrooge his past, a representation of both memory and goodness, strangely both gentle and commanding.
Ghost of Christmas Present	A large, jovial, welcoming spirit who represents goodwill and charity, shows Scrooge how all of London, the Cratchits, Fred and others celebrate Christmas.
Ghost of Christmas Yet To Come	A dark, frightening Spectre, personifies death, shows Scrooge his impending doom, the final warning needed to transform Scrooge.
Belle	Scrooge's former fiancé, chooses happiness rather than riches; she is noble and strong-willed.
Fan	Scrooge's beloved little sister who fetches him home from school one Christmas; she is mother to Fred, Scrooge's only nephew.

THEMES Tick them off when you have seen them in the play.

- Isolation
- Christmas
- Charity
- Social injustice
- Ghosts / supernatural
- Family
- Poverty
- Death
- Redemption

MOTIFS

Write down key quotes that match the motifs.

- Fire
- Hands
- Cold / ice
- Chains
- Light
- Dark
- Children
- Time
- Food
- Music

PLOT

Stave 1	It's Christmas Eve in Victorian London. We meet Ebenezer Scrooge, the money lender, and his clerk, Bob Cratchit. Scrooge rejects his nephew's invitation to Christmas dinner and won't give to charity. After returning to his lodgings, Scrooge is visited by Marley's Ghost who warns him that he will be visited by three ghosts.
Stave 2	Scrooge is awoken by The Ghost of Christmas Past, who takes Scrooge is taken on a journey to his past which Scrooge is forced to watch. For the first time, we see Scrooge's warm emotion.
Stave 3	Scrooge discovers The Ghost of Christmas Present in his living room. Scrooge visits the streets of London where everyone is celebrating Christmas; he visits the Cratchits and sees how they make the most of all they have and he watches Fred's party games and is overjoyed. Finally, he meets two ragged children, before the spirit vanishes, replaced by an approaching dark Phantom.
Stave 4	The Ghost of Christmas Yet To Come never speaks and is dressed in black. Scrooge listens to a group of business men discussing a man's death and visits a seedy part of London where some disreputable characters sell off items stolen from a dead man. Scrooge sees the very different effects of two characters' deaths. Finally, Scrooge realises his awful fate. Scrooge promises to change as the Phantom collapses.
Stave 5	Returned to the present Christmas day and his own room, Scrooge awakes a completely changed man. He sets about amending for his previous sins and celebrates Christmas and all that it stands for.

CONTEXT

Published	In December, 1843, just in time for Christmas: the novella proved to be extremely popular.
Hungry Forties	In the early 1840s Britain experienced an economic depression, causing much misery among the poor. There was a big divide between the classes and crime rates were high.
Poor Law Amendment Act 1834	Aimed to reduce the cost of looking after the poor and remove beggars from the streets. Those who were desperate could enter a workhouse and receive food, shelter and clothing; children were given some schooling. However, the conditions were deliberately harsh: families were split up, working hours were long and gruelling; many would rather stay on the streets than suffer such treatment.
Thomas Malthus	His theory that population growth will always tend to outrun the food supply and that betterment of humankind is impossible without stern limits on reproduction. This thinking is commonly referred to as Malthusianism.
Christmas	During the Victorian times, people began to celebrate Christmas as we do today, with Christmas trees and Christmas crackers and the giving of Christmas cards.
Ghost Stories	The Victorians enjoyed telling ghost stories on Christmas Eve.

KEY QUOTES

Selfish	"Oh! But he was a tight-fisted hand at the grindstone, Scrooge!"
Isolated	"Self-contained, and solitary as an oyster"
Uncharitable (misanthropic)	"Are there no prisons?" [Scrooge questions the charity collectors].
Regret	"Mankind was my business." [Jacob Marley's Ghost tells Scrooge]
Greed (avarice)	"There was an eager, greedy, restless motion in the eye" [Scrooge as a young man]
Poverty	"Yellow, meagre, ragged, scowling, wolfish" [Ignorance and Want]
Structure – Scrooge's transformation	"I am as light as a feather, I am as merry as a schoolboy" [Scrooge's in Stave 5]
Generosity (philanthropic)	"I am about to raise your salary!" [Scrooge says to Bob in Stave 5]
Joy	"His own heart laughed..." [Scrooge – Stave 5]



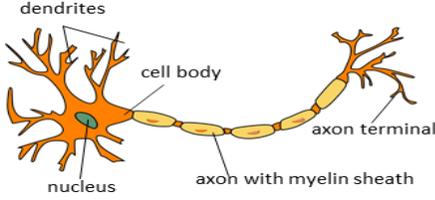
Science

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	Cytokinesi	Cell surface membrane forms to separate the cells (+new cell wall in plants).
Human Embryonic stem cells	<i>Can be cloned and made to differentiate into any cell type.</i>	
Adult stem cells	<i>Can form into surrounding human cells e.g. blood cells.</i>	
Meristems (plants)	<i>Can differentiate into any plant cell type throughout the life of the plant.</i>	

Information from receptors passes along cells (neurones) as electrical impulses to the central nervous system (CNS)	
<i>The CNS is the brain and the spinal cord.</i>	
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

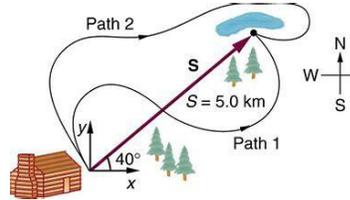


Therapeutic cloning of stem cells to produce new tissue uses same genes so the body does not reject the tissue. Can be a risk of infection.
Tissue made from adult stem cells is matched to avoid rejection, risk of infection. Only a few types of cells can be formed.
Used to produce clones quickly and economically, e.g. rare species, crop plants with pest /disease resistance.



Todmorden High Science Y10 Physics CP2 Motion and Forces.

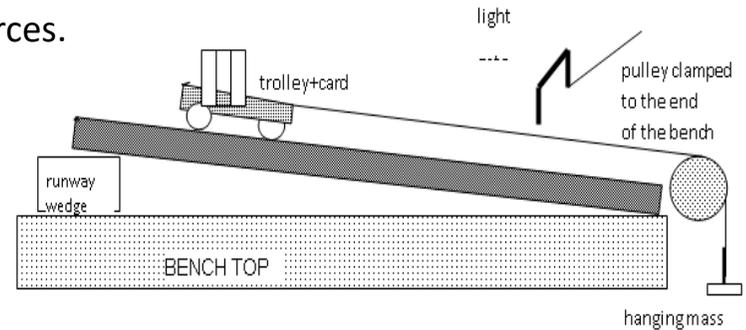
Key Term	Definition
Vector quantities	Have magnitude and direction e.g. force, velocity, displacement, momentum, weight.
Scalar quantities	Have magnitude only e.g. distance, speed mass, energy.
velocity	Speed in a stated direction. (m/s).
Resultant force	The overall force acting on an object, i.e. the vector sum of all the forces acting on an object.
Inertial mass	A measure of how difficult it is to change the velocity (speed or direction) of an object, i.e. the ratio of F/a. $m = \frac{F}{a}$.
Acceleration	$a = \frac{v - u}{t}$ a, acceleration (m/s ²) v, final velocity (m/s) u initial velocity (m/s) t, time taken (s).
Weight	$W = mg$ (g is 10N/kg on Earth) W, weight (N) m, mass (kg) g, gravitational field strength (N/kg).
Average speed	Speed = distance travelled / time taken.
Suvat equation	$v^2 - u^2 = 2ax$ X is the displacement of the object. NB this equation only apply for constant acceleration.
Resultant force	$F = ma$ F, force (N) M, mass (kg) a, acceleration (m/s ²)



The distance of path 1 is a scalar. S 5.0km at 40° is a vector.
Vectors can be combined to find the resultant.

Newton's 1st Law, every body shall continue at rest or move at a steady speed in a straight line unless a resultant force acts upon it.
Newton's 2nd Law, the rate of change of momentum is directly proportional to the resultant force applied so **F = ma**.
Newton's 3rd Law. If body A exerts a force on body B, then body B exerts an equal and opposite (reaction) force on body A

Newton's Laws Decision matrix	Already stopped	Already moving
Zero resultant force $F = 0$	Stays stopped.	Moves at a steady speed in a straight line.
Some resultant force $F \neq 0$	Accelerates. (F=ma)	Accelerates. (F=ma)



Core Practical

Investigate the relationship between F and a for a constant mass.

Vary the force on the trolley by adding known weights to the hanging mass.

Use 5 different weights, 1N to 5N.

Control the total mass of the system by having the slotted weight stored on the trolley and transfer these to the hanger when needed. Keep the angle of the ramp constant.

Measure the acceleration of the trolley using the light gates and data-logger as shown.

Accuracy – use a friction compensated ramp, set the ramp at an angle so that if the trolley is nudged it will roll at a steady speed. Lubricate the axles to reduce friction.

Repeat the measurements and take an average value of acceleration.

Plot a graph of a on the y axis against F on the X axis. Theory predicts this will be a straight line because F=ma.

Overall stopping distance is equal to thinking distance + braking distance

Thinking distance	Braking distance
-------------------	------------------

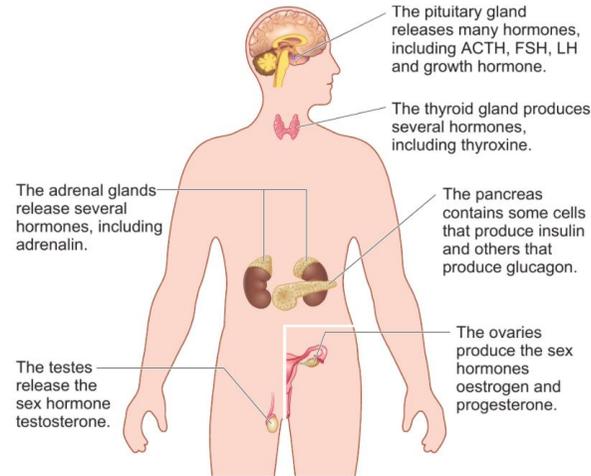


CB7 Animal Coordination, Control and Homeostasis.

Key Terms / Words	Definition
Hormone	Chemical messenger that is released into the blood from an endocrine gland and causes target cells to change how they work.
Endocrine Gland	An organ that makes and releases hormones into the blood.
Target Organ	An organ on which a hormone has an effect.
Homeostasis	Controlling the internal environment of the body at stable levels.
Negative Feedback	A control mechanism in which a change in a condition, such as temperature, causes the opposite change to happen and so brings the condition back to a normal level.
Oestrogen	A hormone produced by the ovaries which is important in the menstrual cycle.
Progesterone	One of the hormones released by the ovaries.
Contraceptive	The prevention of pregnancy.
Ovulation	The release of an egg from an ovary.
Period	The 'bleed' that occurs during menstruation.
Insulin	A hormone that decreases blood glucose concentration by causing cells to take in glucose. It is used in the treatment of type 1 diabetes.
Diabetes	A disease in which the body cannot control blood glucose concentration at the correct level.
Pituitary Gland	An organ just below the brain that controls many activities of the body (e.g. metabolic rate and the menstrual cycle) by the release of hormones into the blood. It can be referred to as the pituitary.
Pancreas	Organ in the body that produces some digestive enzymes, as well as the hormones insulin and glucagon.

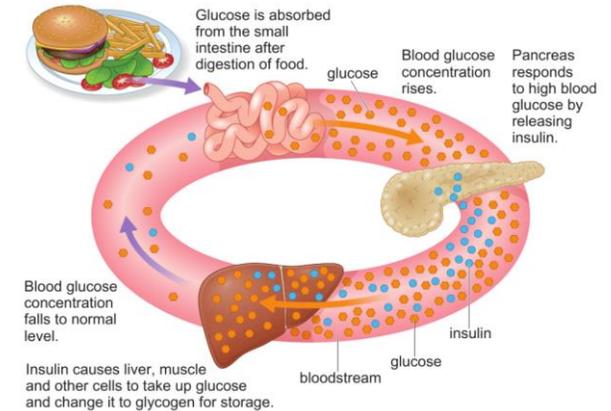
Endocrine Glands

The hormonal system uses chemical messengers called hormones, which are carried by the blood. It is a much slower system than the nervous system.



Blood Glucose Concentration

Insulin is released from the pancreas in response to an increase in blood glucose levels.



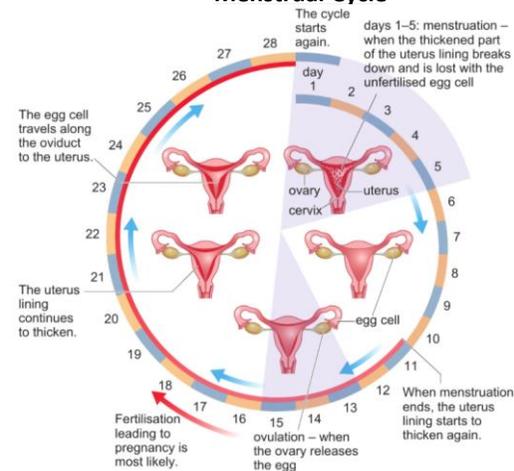
Diabetes

<i>Type 1</i>	<i>Type 2</i>
Pancreas fails to produce sufficient insulin leading to uncontrolled blood glucose levels. Normally treated by insulin injection.	Obesity is a risk factor. Body cells no longer respond to insulin. Common treatments include changing by diet and increasing exercise.

Scientists have found a correlation between type 2 diabetes and high body mass and believe an increase in body fat increases the risk of developing type 2 diabetes. Scientists can check someone's risk by working out the following:

Body Mass Index (BMI)	Waist:Hip Ratio
$BMI = \frac{\text{mass (kg)}}{\text{height (m)}^2}$	

Menstrual Cycle





GCSE CB5 Health and Disease

Key Terms / Words	Definition
Pathogen	A microorganism that causes disease – fungi, bacteria, virus, protist.
Communicable disease	A disease that can be spread from person to person e.g. ebola, flu, HIV.
Non-communicable disease	A disease that cannot be spread from person to person, is non-infectious e.g. heart disease, diabetes, cancer.
BMI	Body Mass Index – a number that determines obesity. $\text{mass} \div \text{height}$.
Aseptic	A sterile technique that prevents contamination, used during testing of antibiotic effectiveness.
B-Lymphocytes	Type of specific white blood cell involved in the immune system that produces antibodies.
Immune system	The body's second line of defence against pathogens. Involves white blood cells.
Lytic cycle	One of the life cycles of a virus when they invade body cells.
Lysogenic cycle	Another type of virus life cycle when they are present in cells but remain dormant.
antibiotics	A type of medication that can be used to treat bacterial infections only.
Cardiovascular disease	Diseases of the heart and circulation system.

Communicable diseases

Disease	Pathogen	Symptoms	Spread
Cholera	Bacteria	Diarrhoea	Water
Tuberculosis	Bacteria	Lung damage	Airborne
HIV (STI)	Virus	Destroys white blood cells	Body fluids, sexual intercourse
Malaria	Protist	Damage to blood and liver	Mosquito (vector)
Chalara ash dieback	Plant fungi	Damage to plant leaves.	Airborne

Non-communicable diseases

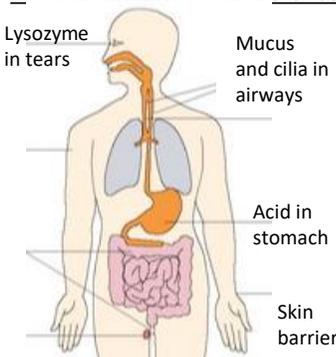
Risks factors for non-communicable diseases such as diabetes, some cancers and cardiovascular disease include obesity, smoking, lack of exercise.

Obesity can be calculated using BMI index and waist:hip ratio.

Cardiovascular disease can be treated in 3 ways:

- Surgically – stent or bypass surgery
- Use of long term medications such as statins.
- A change in lifestyle that involves healthy diet, exercise and not smoking.

Physical and Chemical defences

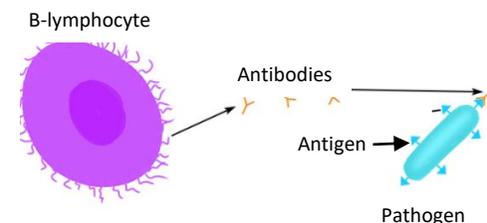


Plant defences

Bark - Many plants are covered with a thick bark, which forms a physical barrier against infection
Thorns and hairs - Plants like roses have evolved large thorns to avoid being eaten.
Antibacterial chemicals - Produced by some plants such as mint and witch hazel produce. These kill **bacteria** that were not stopped by physical defences.

Immune System

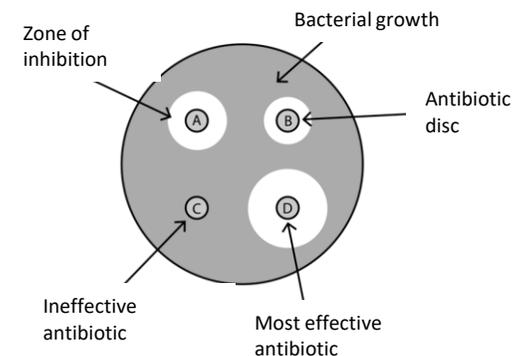
Body produces many B-lymphocytes that produce antibodies that fit onto antigen from pathogen. This destroys pathogen.



Vaccinations

Vaccines allow a dead or altered form of the disease causing pathogen to be introduced into the body, which contain a specific **antigen**. This causes the immune system, specifically the **white blood cells**, to produce complementary **antibodies**, which target and attach to the antigen, this destroys the pathogen.

Required Practical – Aseptic Techniques



Investigation into the effect of antiseptics, antibiotics or plant extracts on microbial cultures
 The effectiveness of antibiotics or antiseptics can be tested experimentally using agar plates covered with a lawn of known bacteria.

The effectiveness of the chosen antibiotic or antiseptic can be measured numerically by using the formula πr^2 , where r is the radius of the zone of inhibition.



Todmorden High Science K.O.

Combined Science CC5-7 Bonding and Types of Substance



Key term	Definition
anion	Negatively charged ion. E.g. Cl ⁻ .
bond	A force that holds some atoms tightly together.
cation	Positively charged ion e.g. Na ⁺ .
electrostatic force	Force of attraction between oppositely charged particles, and force of repulsion between particles with the same charge.
ion	Atom or group of atoms with an electrical charge. Atoms become positively charged ions if they lose electrons and negatively charged if they gain electrons.
ionic bond	Strong electrostatic force of attraction between oppositely charged ions.
lattice structure	Regular grid-like repeating arrangement of particles such as atoms, molecules or ions.
covalent bond	The bond formed when a pair of electrons is shared between two atoms.
molecule	A group of two or more atoms joined together by covalent bonds.
intermolecular force	A weak force of attraction between molecules.
delocalised electron	An electron that is free to move and can carry an electrical current.
metallic bonding	The type of bonding found in metals. We can think of it as positively charged ions in a 'sea' of negatively charged electrons.

The Big Ideas and Must Know Facts

Ionic Bonding

Atoms are more stable if they have an outer electron shell that is full, like a noble gas. This can happen by the transfer of electrons between atoms, forming charged particles called **ions**.

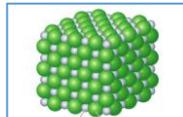
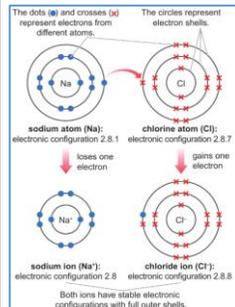
Ionic

Where found: in most compounds containing metal and non-metal atoms.
Bonding: ionic bonds formed by the loss and gain of electrons to produce oppositely charged ions that attract one another.

Structure: billions of ions held together in a lattice structure.

Properties:

- high melting/boiling points
- many are soluble in water
- conduct electricity when liquid or in solution but do not when solid.



	Group 1	Group 2	Group 6	Group 7
outer electrons	1	2	6	7
electrons lost or gained	1 lost	2 lost	2 gained	1 gained
charge on ion	1+	2+	2-	1-
example	Li ⁺	Ca ²⁺	S ²⁻	F ⁻

D formation of ions by elements in groups 1, 2, 6 and 7

Melting points and boiling points

The electrostatic forces of attraction between oppositely charged ions are strong. A lot of energy is needed to overcome these forces in order to separate the ions and cause the substance to melt. This is why ionic compounds must be heated to high temperatures before they change state. They have high melting points and boiling points.

Some ions have more than one charge (such as Mg²⁺ and O²⁻). These highly charged ions will attract other ions more strongly than ions with one charge. More energy will be needed to overcome the electrostatic forces of attraction and so the melting points will be higher.

Electrical conductivity

Ionic compounds conduct electricity when they are molten or dissolved in water. They do not conduct electricity when they are in the solid state.

Two conditions must be met for a substance to conduct electricity:

- it must contain charged particles
- these particles must be free to move.

Covalent Bonding

Covalent bonds are usually formed between non-metal atoms and are produced by sharing pairs of electrons. By forming the bond the atoms become more stable, because they can use the shared electrons to complete their **outer electron shells**. The reason why noble gases are so stable is because they have full outer electron shells.

Melting and boiling points

The covalent bonds in a water molecule are strong forces of attraction. However, there are also weak forces of attraction between molecules – **intermolecular forces**. These intermolecular forces hold water molecules together and must be overcome when turning liquid water into a gas. Small, simple molecules such as water often have low melting and boiling points, because it doesn't take much energy to overcome the weak intermolecular forces.

Required Practical - None

Simple molecular (covalent)

Where found: in most non-metal elements and compounds.

Bonding: covalent bonds formed when atoms share pairs of electrons.

Structure: small, distinct groups of atoms.

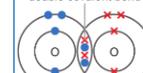
Properties:

- low melting/boiling points
- a few are soluble in water
- most do not conduct electricity.

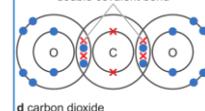
single covalent bond



double covalent bond



double covalent bond



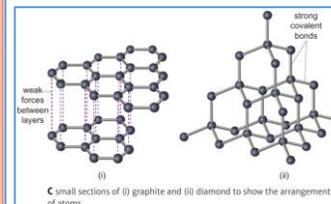
Giant covalent

Where found: in a few non-metal elements and some compounds of non-metals.

Bonding: covalent bonds formed when atoms share pairs of electrons.
Structure: billions of atoms held together in a lattice structure.

Properties:

- high melting/boiling points
- insoluble in water
- most do not conduct electricity (except in carbon as graphite).



Metallic bonding is the electrostatic attraction between the positive metal ions and the negative delocalised electrons. This attraction is strong, so metals have high melting and boiling points.

Metallic

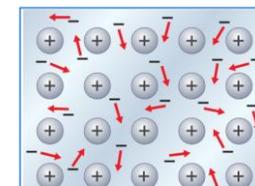
Where found: in all metals.

Bonding: metallic bonds are the electrostatic attraction between positive metal ions and negative delocalised electrons.

Structure: billions of ions held together in a giant lattice structure of positive ions in a 'sea' of negative delocalised electrons.

Properties:

- high melting/boiling points
- insoluble in water
- conduct electricity when solid or liquid.



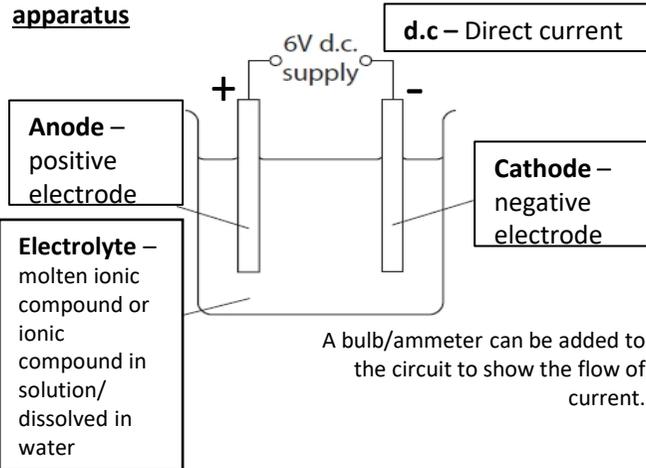
B Metals consist of stacked layers of ions in a 'sea' of delocalised ('free') electrons.



Year 10 – Separate Chemistry- CC10 Electrolytic processes

Word	Meaning
electrolysis	The process in which energy transferred by a direct electrical current decomposes electrolytes.
anion	A negatively charged ion, formed by gaining electrons (usually a non-metal ion). Move to the anode.
anode	Positive electrode.
cathode	Negative electrode.
cation	A positively charged ion formed by losing electrons. Move towards the cathode
electrode	A rod made of a metal or graphite that carries the current into or out of the electrolyte.
electrolyte	A liquid containing charge particles or ions that can move through it carrying current. They are either molten ionic compounds or ionic compounds in solution.
half equation	An ionic equation showing the electrons gained or lost in oxidation or reduction reactions.
oxidation	Is loss of electrons – occurs at the anode OIL
reduction	Is gaining electrons – occurs at the cathode RIG
discharged	In electrolysis, an ion is discharged when it gains or loses electrons to form an atom or molecule.
Inert electrode	An electrode that is unreactive, such as graphite or platinum.

Standard electrolysis set-up (electrolytic cell) and apparatus



The electrolysis of molten ionic compounds or dissolved ionic compounds in solution is carried out using inert (unreactive) electrodes (graphite or platinum). Ions are discharged at the electrodes to form atoms or molecules.

Electrolysis of molten ionic compounds

Molten ionic compounds decompose into their elements.

- The metal ions move to the cathode and are discharged to form metal atoms.
- The negative ions move to the anode and are discharged to form non-metal atoms/molecules.

Molten Lead Bromide (PbBr₂)

Ions	Pb ²⁺	Br ⁻
Electrode	Cathode	Anode
Explanation	Pb ²⁺ ions move to cathode and are reduced to form Pb atoms. (grey liquid).	Br ⁻ ions move to the anode and are oxidized to form Br ₂ molecules (brown gas).
Half equations	Pb ²⁺ (l) + 2e → Pb(l)	2Br ⁻ (l) → Br ₂ (g) + 2e

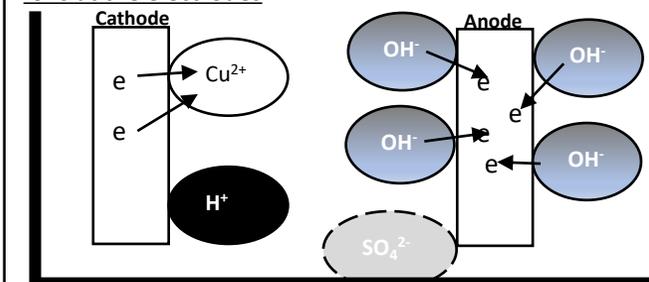
Electrolysis of ionic compounds in solution

An ionic compound in solution will contain four types of ion. There will be two types of ions from the ionic compound along with Hydrogen ions (H⁺) and Hydroxide ions (OH⁻) from water. You need to be familiar with electrolysis of the following solutions: Copper Chloride, Sodium Sulphate, Sodium Chloride and acidified water.

Core practical: Electrolysis of Copper Sulphate solution (CuSO₄) with inert electrodes

Ions	H ⁺ and Cu ²⁺	OH ⁻ and SO ₄ ²⁻
Electrode	Cathode	Anode
Explanation	H ⁺ and Cu ²⁺ are attracted to the cathode. Copper ions are discharged more easily. A brown solid of Copper atoms forms	OH ⁻ and SO ₄ ²⁻ are attracted to the anode. Hydroxide ions are discharged more readily to form Oxygen gas (and water)
½ equations	Cu ²⁺ (aq) + 2e → Cu(s)	4OH ⁻ (aq) → 2H ₂ O(l) + O ₂ (g) + 4e

Ions at the electrodes



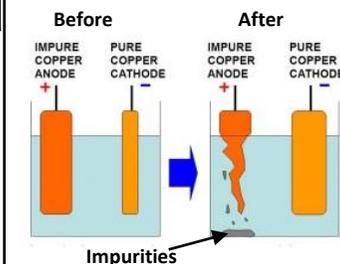
Core practical: Electrolysis of Copper Sulphate solution (CuSO₄) with copper electrodes

Copper is purified by **electrolysis**. Electricity is passed through solutions containing copper compounds. The **anode** is made from **impure copper** and the **cathode** is made from **pure copper**.

During electrolysis, the anode loses mass as copper dissolves, and the cathode gains mass as copper is deposited.

These are the half-equations:

- anode: Cu → Cu²⁺ + 2e (oxidation)
- cathode: Cu²⁺ + 2e → Cu (reduction)

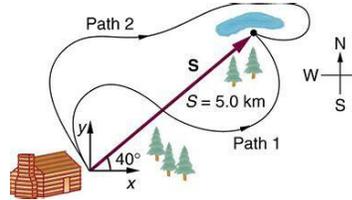


- The electrodes should be cleaned with emery paper prior to use so that the copper atoms can adhere to the surface of the cathode.
- The mass increase of the cathode may not be the same as the mass lost by the anode due to some copper atoms not adhering to the cathode.



Todmorden High Science Y9 Physics CP2 Motion and Forces.

Key Term	Definition
Vector quantities	Have magnitude and direction e.g. force, velocity, displacement, momentum, weight.
Scalar quantities	Have magnitude only e.g. distance, speed mass, energy.
velocity	Speed in a stated direction. (m/s)
Resultant force	The overall force acting on an object, i.e. the vector sum of all the forces acting on an object.
Inertial mass	A measure of how difficult it is to change the velocity (speed or direction) of an object, i.e. the ratio of F/a. $m = \frac{F}{a}$.
Acceleration	$a = \frac{v - u}{t}$ a, acceleration (m/s ²) v, final velocity (m/s) u initial velocity (m/s) t, time taken (s).
Weight	$W = mg$ (g is 10N/kg on Earth) W, weight (N) m, mass (kg) g, gravitational field strength (N/kg).
Average speed	Speed = distance travelled / time taken.
Suvat equation	$v^2 - u^2 = 2 a x$ X is the displacement of the object. NB this equation only apply for constant acceleration.
Resultant force	$F = ma$ F, force (N) M, mass (kg) a, acceleration (m/s ²)

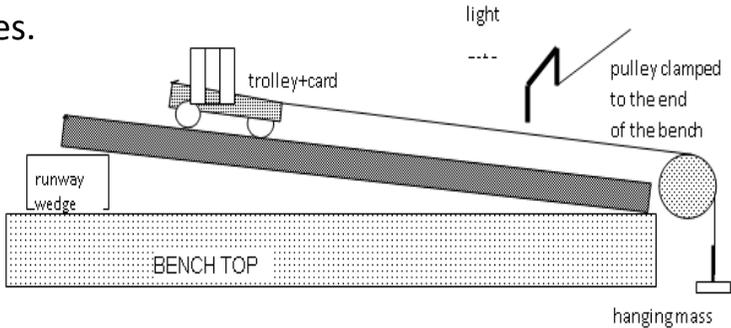


The distance of path 1 is a scalar. S 5.0km at 40° is a vector.

Vectors can be combined to find the resultant.

Newton's 1st Law, every body shall continue at rest or move at a steady speed in a straight line unless a resultant force acts upon it.
Newton's 2nd Law, the rate of change of momentum is directly proportional to the resultant force applied so **F = ma**.
Newton's 3rd Law. If body A exerts a force on body B, then body B exerts an equal and opposite (reaction) force on body A

Newton's Laws Decision matrix	Already stopped	Already moving
Zero resultant force $F = 0$	Stays stopped.	Moves at a steady speed in a straight line.
Some resultant force $F \neq 0$	Accelerates. ($F=ma$)	Accelerates. ($F=ma$)



Core Practical
Investigate the relationship between F and a for a constant mass.

Vary the force on the trolley by adding known weights to the hanging mass.

Use 5 different weights, 1N to 5N.

Control the total mass of the system by having the slotted weight stored on the trolley and transfer these to the hanger when needed. Keep the angle of the ramp constant.

Measure the acceleration of the trolley using the light gates and data-logger as shown.

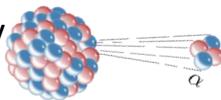
Accuracy – use a friction compensated ramp, set the ramp at an angle so that if the trolley is nudged it will roll at a steady speed. Lubricate the axles to reduce friction.

Repeat the measurements and take an average value of acceleration. Plot a graph of a on the y axis against F on the X axis. Theory predicts this will be a straight line because $F=ma$.

Overall stopping distance is equal to thinking distance + braking distance	
Thinking distance	Braking distance



Todmorden High Science Y10 Physics P6 Radioactivity

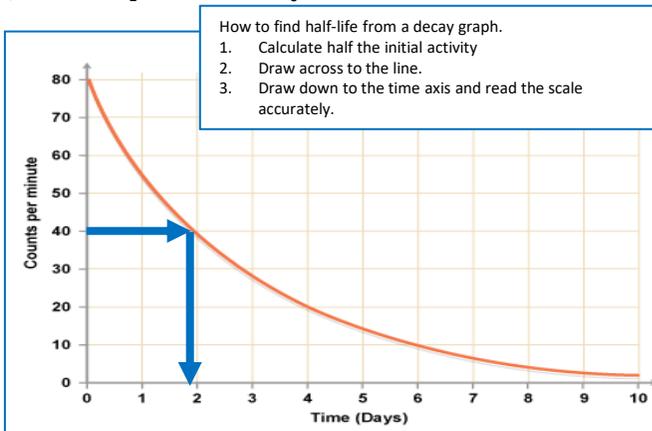


- Safety Precautions.**
1. Limit time exposure.
 2. Limit the distance,.
 3. Stay behind a shield / use protective handling equipment.

Key Term	Definition
Isotope	Atoms of the same element, with the same number of protons, but a different number of neutrons, in their nuclei.
Activity	The number of decays per second from a radioactive source.
Background radiation	Ionising radiation from the environment, food and drink, Earth, space, and man-made sources e.g. medical uses.
becquerel (Bq)	The unit for activity 1Bq is 1 decay per second.
Contamination (vs irradiation)	Unwanted radioactive isotopes are on or in a material or living organism (e.g. person). Irradiation is when the radiation from a radioactive isotope is absorbed by a material. Note that the radioactive isotope does not come into contact or contaminate the material for irradiation to happen.
decay	The release of energy in the form of nuclear radiation from the nucleus of an atom that changes the nucleus making it more stable. eg. beta ⁻ decay of C-14. $^{14}_6\text{C} \rightarrow ^{0}_{-1}\text{B}^- + ^{14}_7\text{N}$.
Geiger-Muller tube	A device to count the radiations from any source.
Half-life (definition 1)	The time taken for the activity of a source to half.
Half-life (definition 2)	The time it takes for half the radioactive nuclei in a sample to decay.
Random decay	It is not possible to predict which nuclei in a radioactive isotope will decay or when they will decay. The half-life of a radioactive isotope cannot be increased or decreased e.g. by heating or chemical reactions.

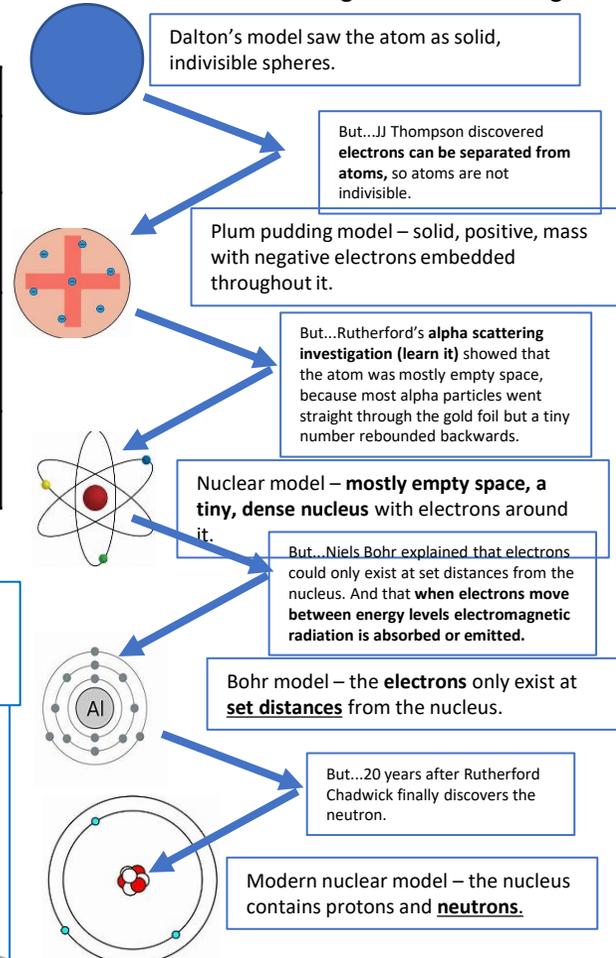
Properties of radiation				
Type	Description	Ionising ability	Range in air	Stopped by
Alpha $^4_2\alpha^{2+}$	helium nucleus, (2 protons and 2 neutrons)	highly ionising	A few cm	Paper or skin
Beta ⁻ $^0_{-1}\text{B}^-$	high speed electron from the nucleus	moderately ionising	A few metres (typically 1 m)	A few (3) mm of aluminium
Gamma $^0_0\gamma^0$	electromagnetic wave (like visible light)	weakly ionising	A few km.	Thick lead or concrete

Other nuclide notations needed for balanced nuclear equations.
positron $^0_1\text{B}^+$ neutron $^1_0\text{n}^0$



History of the Model of the Atom.

When the evidence changes the model changes.



Year 10 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.

Scale - the use of symbols to represent ideas or qualities.

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

Contextual Information

Michelangelo was an Italian sculptor, painter, architect and poet of the High Renaissance, born in the Republic of Florence, who exerted an unparalleled influence on the development of Western art. A number of Michelangelo's works of painting, sculpture and architecture rank among the most famous in existence. He sculpted two of his best-known works, the *Pietà* and *David*, before the age of 30. He created beautiful anatomically correct paintings, drawings and sculptures and in his lifetime, Michelangelo was often called *Il Divino* ("the divine one").



Overview

During this project students will be studying the work of Michelangelo and learning how to create accurate observations of facial features and portraits.

Students will begin this project by researching into Michelangelo and developing their accuracy and tonal skills by replicating two pieces of his work in both pencil and ink (AO2). Concentrating on accuracy of drawing in regards to the shape of the face and placement and scale of facial features. Students will also develop an understanding of how to apply a variety of shading techniques and the effect this can have on a piece of work. During this project, students will discuss the role of portraiture throughout the ages and why it is still so popular in modern society. Students will evaluate and analyse their own work and the work of other artists in order to deepen their understanding and knowledge on the topic (AO3).

After the initial artist study (AO1), students will develop this project by then taking a selection of photographs based on the theme of portraiture (AO2). This will show students how the skills learned during the Michelangelo study can be applied to a more contemporary subject matter and also embed the idea of using more personalised subject matter during their GCSE projects. With these photographs students will create a number accurate drawings, continuing with skills learned about accuracy of outline and features. This will help to embed the knowledge and understanding of how to create an effective portrait. As a final piece (AO4) the students will decide on a specific photograph that they want to use as inspiration and also which material they are the most confident in. They will create an A4 sized portrait of that photograph showing their understanding of portraiture and shading techniques.

How To Create An Accurate Portrait

1. Lightly sketch out the face shape – paying close attention to the jaw size.
2. Add in one horizontal and vertical line over the centre of the face shape.
3. Lightly sketch the size and placement of all the features – check image.
4. Sketch in the outlines of all the features.
5. Refine outlines of all features and face shape.
6. Add in all smaller details like lashes and eyebrows.
7. Tonally shade areas of the face, starting with darkest areas first.
8. Refine drawing.

Starting a new business

Three main questions;
Why?
Who?
How?

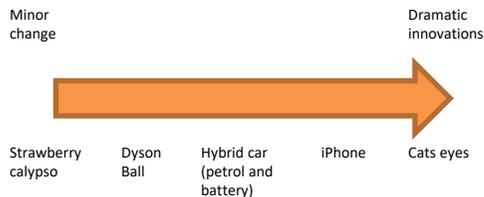
Why new business ideas come about

Changes in what customers want.
Products and services becoming obsolete.

Changes in technology.

New technology	New products/uses
GPS (Global positioning system)	<ul style="list-style-type: none"> Sat Nav. Pet monitoring collar. Self driving cars.
3D Printing	<ul style="list-style-type: none"> Made to measure printed shoes. One off prototypes to test new product ideas.

How new ideas come about



New ideas and competitive advantage

Competitive advantage is a term given to any factors that help a business to succeed when competing against direct rivals.

Adapting existing products and services

The overwhelming majority of new products launches are derived from an existing product's success.

Key words

Dynamic nature of business

The idea that business is ever changing because of external factors, such as technology, are always changing.

Venture capital

Risk capital provided by an investor willing to take a risk in return for a share in any later profits; the venture capital provider will take share stake in the business.

Demand

The number of units that customers want – and can afford – to buy.

Entrepreneurs

Business people who see opportunities and are willing to take risks in making them happen.

Obsolete

A product or service with sales that have declined or come to an end as customers find something new.

Adapting existing products

Finding new products based on the original one, such as Walls White Chocolate magnum.

Competitive advantage

A feature of a business that helps it to succeed against rivals.

Original ideas

Ideas that have not been done before.

Business failure

The collapse of a business probably leading to closure.

Independence

The need by many business owners to make their decisions and be their own boss.

Lack of financial security

Uncertainty for the business owner about day to day family income and assets.

Risk and reward

The balance between the worst that can happen and the best that can happen.

Customer needs

The product or services people need to make life comfortable.

Customer wants

What people choose to spend their money on, once weekly bills have been paid.

Goods

Products that may be fresh, such as apples or manufactured, such as Heinz baked beans.

Services

Providing useful ways to help people live their lives for example shops, restaurants and hospitals.

Branding

Giving a product or service 'personality' with a name and logo that makes it stand out.

Unique selling point (USP)

An original feature of a product that rivals aren't offering.

Value Added

The difference between the selling price and the cost of bought in goods and services (the difference that creates the possibility of profit).

Business decisions

Choices that have to be made, usually within a short period of time.

Human resources

The term used by organisations that simply means employees.

Resources

Things or people that can be used to help build and run a business.

Risk taking

Making decisions where unknown factors or chances of failure loom large in the decision-makers minds.

Risk and Reward

Risk is about chance. What is the chance that a particular outcome will occur? Large firms know that over the years only one in five new products are a success so the chance of failure is four out of five. Does that mean firms should never launch new products?

Risk can mean business failure, financial loss or lack of security. Whereas reward can mean business success, profit and wealth and independence

'With great risk comes great reward' Thomas Jefferson, former US president.

Adding value

Many shops sell Walkers crisps at 50p per pack. The pack weighs 35g which is about 2p of potatoes. Oil, salt and flavouring are also used, but even adding in the packaging, the total cost per unit is only 4p. So turning potatoes into crisps is adding value.

Chicken curry and rice	Price per person
Cook your own	£2.00
Add Sherwood's bottled sauce to chicken	£2.50
Buy supermarket ready meal	£2.75
Buy a takeaway	£4.75
Go to a restaurant	£7.75

The role of entrepreneurship

An entrepreneur is a risk taker who wants to create an organisation that makes a difference. That difference may be for a social reason, such as the bottled water brand One founded by Duncan Goose to generate profit for a social purpose, funding water charities in Africa, or it may be because the entrepreneur wants to become very rich.

An entrepreneur;

Takes risks.
Makes business decisions.
Organises recourses.

The role of business enterprise

What is business for? While the individual entrepreneur may want to be a boss and to make money, the only way to do these things is to produce goods or services that people want to buy or to meet customer needs or wants in such a way that adds value.

Age Groups



0-18 months



18 months-3 years



3-5 years

Measuring Growth in Children

- Length/Height (cm)
- Weight (kg/lb.oz)
- Head circumference (cm)



Think: What can you see this baby is doing?

Key terminology

Growth

An increase in size that can be measured. It is plotted on growth charts by midwives, doctors and health visitors.

Development

An increase in knowledge and skills over time. Development is tracked to make sure children make progress.

Milestones

A stage or event in a process. These are tracked using the EYFS framework and are what is considered 'normal' development for children based on the mean age in a study.

EYFS

Early Years and Foundation Stage. Learning and development from Birth to 5 years old.

Reflexes

Primitive reflexes are the things a newborn baby can do. They are not learned. They include sucking and palmar grasp.

Cause and effect

A child learning that when they do something a different thing happens. e.g. kicking their legs and a dangling toy moves.

Physical Development

Having control over your body, muscles, balance and co-ordination. This is a combination of gross motor skills and fine motor skills.

Cognitive and Intellectual Development

How our brain grows to gain knowledge and understanding.

Communication and Language Development

The development of how children get messages across to adults; including crying, facial expressions, gestures, and learning to talk.

Social Development

How babies and children interact with other humans.

Emotional Development

How babies and children develop bonds and trust with different people; sometimes called attachment.

Holistic development

Children's development does not happen in one area alone. Often the areas of development are linked and children make 'leaps' in their behaviours as they develop.

Skill

Smiling at a familiar face

Banging a drum

Area of development

Communication and language: the smile is a form of non-verbal communication that means 'hello'.

Social development: the child is making a connection with someone they want to engage with.

Emotional development: the smile says 'I am happy to see you!'

Physical development: the child needs to move their hands to bang on the drum, so there is purpose in their movement.

Cognitive and intellectual development: the child understands cause and effect: banging on the drum makes a noise.

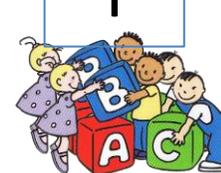
PD



C&L



C&I



SD



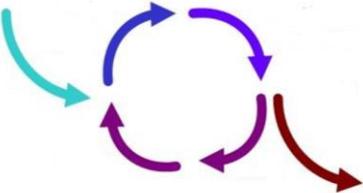
ED



Design Technology – Year 10

Design Strategies

Design Strategies are used to solve **Design Fixation**, and help develop creative design ideas.



Iterative Design

- A proposal is made.
- It is then planned and developed to meet the brief.
 - It is analysed and refined.
 - It is then tested and modelled.
- It is then evaluated against the brief - many versions fail but that then informs development to make the idea better.
- The cycle then repeats and, if the product is successful, it is then made and sold on the market.

Iterative Design	
Advantages	Disadvantages
<ul style="list-style-type: none"> • Consistent testing helps solve problems earlier. <ul style="list-style-type: none"> • Constant feedback. • Easy evidence of progress. 	<ul style="list-style-type: none"> • Designers can lose sight of "the big picture". <ul style="list-style-type: none"> • Time -consuming.

User-Centred Design

- This is when designs are based on fulfilling the needs and wants of the users/ clients at every stage of the design process.
- Questioning and testing is ongoing and is often found through interviews, questionnaires, surveys, etc.

User-Centred	
Advantages	Disadvantages
<ul style="list-style-type: none"> • User feels listened to. • Makes sure the product meets their needs. 	<ul style="list-style-type: none"> • Requires extra time to get customer feedback. • If focused on just one person, it can limit appeal to others.

Systems Approach

- Usually used for electronic products.
 - Often uses diagrams to show systems in a visual way.
- Planning the layout for the correct sequences e.g. inputs, outputs, timings, etc.
- Electronics and mechanical systems need an ordered and logical approach.

Systems Approach	
Advantages	Disadvantages
<ul style="list-style-type: none"> • Does not need specialist knowledge. • Easy to communicate stages. <ul style="list-style-type: none"> • Easy to find errors. 	<ul style="list-style-type: none"> • Sometimes over-simplifies stages. • Can lead to unnecessary stages.

Collaborative Approach

- Working with others to share data and solving problems and coming up with design proposals can help with creativity.
- Numerous companies work in teams and it has been shown to improve the range and quality of ideas produced.

Collaborative Approach	
Advantages	Disadvantages
<ul style="list-style-type: none"> • Gets multiple opinions and a range of views. • Working in groups can produce more ideas. 	<ul style="list-style-type: none"> • Can be difficult to design ideas with opposing views. • Can be difficult to find time to communicate with multiple people.



Key terms

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, i.e. 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 whole 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 teachings

The Nativity

This is the birth story of Jesus which is made up of the Prophecy (of Isaiah), the Annunciation (of Gabriel to Mary) and the Incarnation (where Jesus was born).

The Ministry of Jesus

After his baptism in the river Jordan, Jesus did parables to teach people how God wanted them to live and performed miracles as a sign he was part of the Trinity (The Son of God). His teachings and 37 miracles are recorded in the Gospels (Matthew, Mark, Luke & John).

The

Crucifixion Before Pilate and Herod, Jesus was killed on a cross. He died to pay for sin (atonement) and he fixed our relationship with God. This was shown through the Temple Curtain tearing from 'top to bottom' (Gospels). This happened on 'Good Friday.'

The Resurrection

On the 3rd Day of Easter (Easter Sunday), Jesus rose from the dead. Over the next 40 days he appeared to his disciples in different places such as on the Road to Emmaus, at the Tomb and on Lake Tiberius.

The Ascension

On the 40th Day of Easter, Jesus ascended from the Mt. of Olives. He said 'God and make disciples of all nations.' This instruction is called the Great Commission.

Pentecost

On the 50th Day of Easter the Holy Spirit 'came upon' the disciples in the Upper Room like a 'rushing wind.' They gained the ability to speak different languages and perform miracles. They convinced people of Christianity and baptised 3000 people that very day.

Afterlife

Most Christians believe that, on Judgement Day, we will all be judged on our actions and sent to heaven or hell. Catholics also believe in Purgatory which is a temporary state where the individual endures 'purifying fire' (Catechism), pays off their sin and then reaches heaven.

The Nature of God

His nature means 'what he is like.' In Christianity, this includes omniscient, omnipotent, omnibenevolent, transcendent, eternal, 3 in one (Trinity), a just judge, imminent and personal.

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

'Do not lie' Ten Commandments.

Moses saw God as the 'Burning Bush.'

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.'

Geography - Section A: Living World



ECOSYSTEM

Biotic	Living elements of an ecosystem.
Abiotic	Non-living elements of an ecosystem.
Ecosystem	Interactions of all living and non-living elements [UK Hardcastle Craggs].
Producer	Converts sunlight into simple sugar [energy] through photosynthesis [UK oak tree].
Consumer	Feeds on producer or other consumer [UK squirrel].
Decomposer	Breaks down complex organism [UK earthworm].
Food Chain	Energy moving through ecosystem [UK squirrel eats acorn].
Food Web	All different food chains in an ecosystem.
Nutrient cycle	Nutrients moving from dead decomposed animals and plants into soil ready to be used again.
Biodiversity	Number and type of organisms in an ecosystem.



DIFFERENT BIOMES

Biome	Large ecosystem.
Polar Ice	North and South Pole, Extreme cold & little sun therefore few plants and animals.
Tundra	Borders Polar regions, similar climate but slightly less extreme.
Temperate deciduous forest	UK climate with seasons and trees that drop leaves.
Tropical Rainforest	High rainfall and temperature all year therefore huge biodiversity.
Desert	Covers 1/5 of Earth's land, <200mm annual ppt, extreme temps, limited plants and animals.
Temperate grassland	Temperate Grassland, plains of grass that get hot in the summer and cold in the winter.



TROPICAL RAINFOREST

Emergent	Fat growing trees, sit above canopy to maximise sunlight.
Canopy	Top and thick layer of trees.
Flexible leaf base	Can turn to face sun, maximises photosynthesis.
Drip tip	Allows heavy rain to run off, prevents leaf breaking under weight.
Smooth bark	Allows heavy rain to run down stem.
Lianas	Creepers that use other trees to reach sun.
Buttress roots	Thick above ground root to stabilise tall trees in thin soil.
Deforestation	Cutting down trees, usually for economic reasons.



TRF EXAMPLE = MALAYSIA

Malaysia	Once totally forested, now 59%.
Commercial farming	Malaysia is largest global exporter of palm oil, makes huge amount of money for government.
Subsistence farming	1.9 million tons of rice are needed annually to feed Malaysian people.
Logging	Removing trees for roads and wood for manufacture.
Mineral extraction	Gold and iron mined, 31% of global tin comes from Malaysia.
Population pressure	31.7 million population and one of most rapidly growing globally.
Energy	Build dams for HEP involves flooding forest, needed for population increase.



COLD ENVIRONMENT

Physical characteristics	Permafrost – layer of permanently frozen ground beneath the thin soil. Extreme cold and lack of light for months.
Low biodiversity	Due to short growing season and general harsh environment.
Fragile	Any disturbance to these ecosystems is difficult to recover from as everything takes such a long time to grow in the harsh environment.
Svalbard	5 major islands in Arctic Ocean, population 2,700, fishes 150 species, 300 employed in mines, 70,000 annual tourists, dark 4 months, -30°C winter, 1 small airport.

Health and Social Care Knowledge Organiser: Year 10, Term 1

LO2 – Understand the personal qualities that contribute to care.

The qualities that contribute to effective care are:

Willingness (e.g. to support other individuals).

Sense of humour (e.g. when working with young children in a nursery).

Patience (e.g. when dealing with an individual in a wheelchair). Patience - the ability to accept or tolerate delay, problems, or suffering without becoming annoyed or anxious. Patience is a quality for working with the elderly, children, and disabled people. Patience involves providing service users with time to be able to express what they want or must do. For example, a child who requires a wheelchair will need more time to mobilise than one who does not require one. By standing back and allowing the child to go at their own pace will lead to empowerment, rather than rushing or doing jobs for the child.

Understanding (e.g. by giving clear instructions for an activity at a day care centre so that they are understood). Understanding - could be shown by changing the format of the instructions to suit the service users ability for example signing for the deaf, simple words and pictures for children or large font for people with sight problems.

Empathy (e.g. with an individual's circumstances when breaking bad news in a hospital). Empathy is the capacity to understand or feel what another person is experiencing from within their frame of reference, that is, the capacity to place oneself in another's position.

Respect (e.g. an individual's personal religious beliefs about the type of food they can eat in hospital). Respect, also called esteem, is a positive feeling or action shown towards someone or something considered important or held in high esteem or regard. It conveys a sense of admiration for good or valuable qualities.

Cheerfulness (e.g. the way a nursery nurse greets the children). The quality or state of being noticeably happy and optimistic, the way you carry yourself and how happy you are.

LO3 – Be able to communicate effectively within a health, social care and early years setting.

How to plan for a one-to-one and group health, social care or early years interaction, considering:

Time i.e. – ensuring enough time is set-aside

– that all parties involved are aware of the time and how long it will take.

Environmental factors, i.e. – away from the noise of the nursery, in private if necessary

– appropriate lighting and space.

– seating plans (e.g. GP surgery, day care centre seating arrangements).

Activity or topic of conversation, i.e.

– related to the health, social care, or early year setting.

Skills to be used, i.e.

– non-verbal

– verbal.

The reasons why practitioners and individuals who use the service need to communicate clearly:

- to give, obtain and exchange information to meet the individuals, physical, intellectual, language, emotional and social needs.

- To ensure the comfort of the individual.

- To show value and respect for the individual.

How to communicate effectively in a one-to-one and group situation, i.e.:

Active listening, i.e. – concentrate on what is being said

– understand what individuals and key people are trying to express

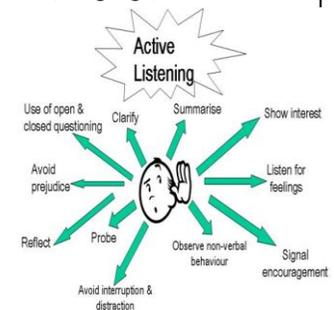
– interpret the information being given, repeat information if necessary

– respond to information appropriately

– actively encourage others to communicate

– appropriate body language,

– maintaining eye contact hand gestures/folded arms/ finger pointing .





Key people

Ancient Greece and Rome

Hippocrates
Created the Theory of the Four Humours and believed in observing the body to get a diagnosis

Galen
Developed the theory of Four Humours. Dissected animals to understand the human body and proved the brain controlled the body. His ideas were favoured by the Medieval Church.

Medieval European

John Arderne
Battlefield surgeon. Believed in the importance of bedside manner and trusting judgement. Relied less on Galen and Hippocrates.. Developed cauterising ointment which improved surgical survival rate to 50%

Roger Bacon
Franciscan monk and lecturer at Oxford University. Arrested around 1277 for spreading anti-Church views after questioning the work of Galen.

Medieval Islamic

Al-Razi (Rhazes)
Stressed the need for careful observation of the patient and distinguished between Smallpox and measles. Followed Galen but believed the student should improve the work of the teacher.

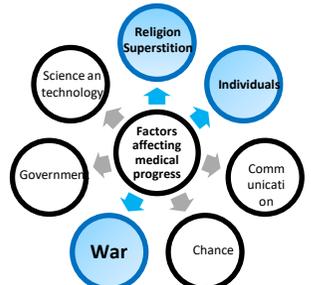
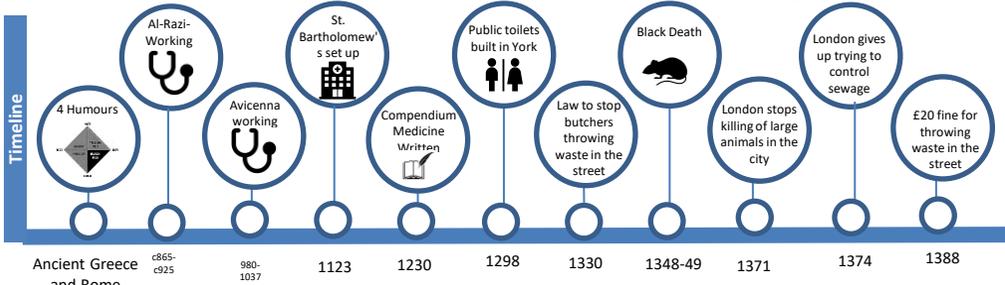
Ibn Sina (Avicenna)
Wrote *Cannon on Medicine*, covered all ancient Greek and Islamic medicine at the time. Over 1 million words long. Contained chapters on anorexia and obesity. Standard medical text book in the west until the 17th century.

Key words

- Amulet** A charm that brought protection from disease
- Apothecary** A medieval pharmacist or chemist
- Astrology** Study of the planets and their effect on humans
- Autopsy/Dissection** To cut open a human and examine the insides /look for the cause of death
- Barber Surgeon** Untrained surgeon, but done apprenticeship, who practised basic surgery
- Black Death** A term to describe the bubonic plague
- Cauterise** To burn a wound with a heated instrument or caustic substance to stop bleeding or prevent infection
- Cupping** Using glass cups to draw blood to the surface
- Epidemic** A widespread outbreak of a disease
- Fasting** To avoid eating or drinking
- Leeching** The use of leeches for bloodletting
- Miasma** Bad air which was blamed for spreading disease
- Mortality** Death rate-usually measured per 1,000 of the population
- Physic garden** Garden used solely for growing herbs to treat illness
- Physician** A male medically trained doctor
- Pilgrimage** A journey to a religious shrine to cure an illness
- Purging** To rid the body of an 'excess' like blood or vomit
- Superstition** A belief, not based on knowledge, but on the supernatural. For example witchcraft or astrology
- Trepanning** Cutting a hole in the skull to release pressure
- Urine Chart** Used to examine urine to define an illness
- Vademecum** A medieval medical book carried by doctors
- Wise Woman** A female healer, who used folk medicine and herbal remedies

Key events

- Influence of Hippocrates and Galen**
 - Treatments continued to be a mixture of herbal remedies, bleeding and purging, and supernatural ideas. Most doctors still believed the theory of the 'Four Humours' - phlegm, black bile, yellow bile, blood. During the medieval era dissection of human bodies was banned so doctors didn't properly understand what went on inside the body.
- Causes of disease**
 - Superstition and religion. For example, the will of God, the stars, demons, sin, bad smells, charms and luck, witchcraft or astrology.
 - During epidemics, people would blame witches, nobility or groups who were culturally different such as Jewish people and attack them.
- The Black Death**
 - 1/3 population killed. Supernatural and natural explanations for it, for example, punishment from God, planets misaligned, miasma (foul air).
 - The impact of this epidemic was long lasting. Crops rotted in fields, village animals escaped, the economy crashed. Laws were passed to try and restore order. The Statute of Labourers (1351) put limits on wages to keep the feudal system in order.
 - Landowners switched to sheep farming, further increasing food shortages and reducing the number of jobs available.
- Treatments**
 - Treatments were varied. Some are now seen as successful, those that relied on herbal remedies have now been proved successful. Others were less so, for example;
 - bleeding, applying leeches, smelling strong posies or causing purging or vomiting.
 - cutting open buboes, draining the pus and making the patient hot or cold, e.g. by taking hot baths.
 - Trepanning.
 - praying, or self flagellation.
 - lighting fires in rooms and spreading the smoke.
- Surgery**
 - There was some progress in the area of surgery. The Middle Ages was a time of constant warfare, so surgeons got lots of practice and:
 - realised that wine was a mild **antiseptic**
 - developed a range of painkillers, including opium
 - Medieval surgeons were very good at practical first aid and even attempted some internal surgery. They could:
 - heal wounds with honey and vinegar and mend broken bones
 - carry out external surgery on problems like ulcers and eye cataracts
 - carry out internal surgery such as bladder stones
- Public health**
 - It used to be thought that medieval towns were filthy, without drains, sewers or rubbish collections. Some of this was true as it was a struggle to keep town clean. However, modern historians have found out that:
 - Parliament passed the first law requiring people to keep the streets and rivers clean in 1388.
 - Medieval people washed and exercised. Many towns had bath houses.
 - Towns paid 'gong farmers' to clear out human waste from cesspits.
 - Many towns had quarantine laws, boarded up the houses of plague victims, and isolated people with leprosy in 'lazar houses'.
 - Monasteries had running water and good toilet facilities.
 - Hospitals were built e.g. St Bartholomew's in London in 1123.
 - Nowadays, historians think that medieval towns were not as dirty as industrial towns.



Key terminology

Employee	Someone who works in the industry and has an employment contract.
Employer	Someone who hires staff to work for them.
Worker	Someone who works in the industry but does not have an employment contract.
Covers	Customer orders that are sent to the kitchen.
Workflow	The way food passes through a kitchen from delivery to plate.
HACCP	Hazard Analysis Critical Control Point – safety procedure that identifies hazards and prevents them.
FSA	Food Standards Agency – responsible for enforcing food hygiene and safety laws.
Kitchen Porter	Member of staff responsible for kitchen organisation, supplying the chefs and the stock of the kitchen.
Brigade	Term for a group of chefs in a professional kitchen.

Head Chef Responsibilities

- Making sure food is of the right quality and price and is produced on time.
- Managing stocks of food/meeting suppliers.
- Managing health and hygiene procedures.
- Organising the staff duty rota.
- Overall responsibility for daily operations in the kitchen.
- Deals with customer complaints.

- Employees receive the necessary training.
- The Executive Chef assigns duties to his or her staff.
- Ordering supplies.
- Meal creations/menus/producing menus and new dishes.
- Maintaining or raising the profit margins on food/costings of dishes.
- Staffing: hiring and firing of staff.
- Attending meetings.

EHO Responsibilities

- Carrying out routine or unplanned visits and inspections to ensure compliance with health and safety legislation and taking action to improve conditions.
- Taking video of the area investigating.
- Measuring noise level.
- Providing advice and assistance to householders and businesses.
- Taking photos, producing drawings, removing samples and conducting interviews as part of the inspection process.
- Investigating complaints from the general public.
- Investigating accidents at work and complaints about poor standards of health and safety, as well as identifying areas of negligence.
- Investigating outbreaks of infectious disease and preventing it spreading any further.
- Taking enforcement action, initiating legal proceedings, preparing and giving evidence in court.

The purpose and content of pre-production

Mood Boards	The purpose of a mood board is to assist in the design of a media product by collecting a wide range of materials (images, fonts, colours, etc.) that give an overall feel for what is needed. A mood board, therefore, provides a starting point which can be used for discussion with the client and can also be used to keep the project on track by referring back to it. It is not a representation of what the final product will look like.
Mind Maps/Spider Diagrams	These can be used to quickly generate different ideas or to show links between different concepts. Mind maps will have a central theme with branches springing from it connecting different sub-nodes. They are used at the start of the design process.
Storyboards	Storyboards are used for moving images (animation/film) to help plan what will happen throughout the course of a scene. A storyboard will show images of what is happening in the scene and can also be annotated with a description of the scene and how long it lasts for. Story boards will help people to visualise the camera angles that will be used as well as different aspect of lighting, special effects/sounds and props/costumes. More importantly, a storyboard will show how the different elements of a scene fit together. This can be shared with the client before production begins so that changes can be suggested and agreed. It can also be shared with the cast and crew as a guide to what they should be engaged with at a particular time. Storyboards may also help to build up an idea of the budget that may be required.

Key terms

Script	A written version of a play or movie.
Work plan	A work plan is an important tool that helps a project to assign tasks, manage workflow and track the various components and milestones/deadlines.
Target Audience	A particular group at which a product such as a film or advertisement is aimed.
Resources	The hardware , techniques and software required to complete an activity.
Health and safety	The law based around safe working conditions/practice.
Copyright	Copyright is a legal means of protecting an authors work.
Trademarks	A trademark is a name or symbol that a company uses on its products so that they cannot be used by another company.
File formats	A file format is a standard way that information is encoded for storage in a computer file/ It specifies how bits are used to encode information in a digital storage medium.
Node	A point on the mind ap that has some information or an idea (mind maps).
Branch	A line that joins the node to the sub node (mind maps).
Purpose	Remember that the purpose is what is it going to be used for.
Assets	Images, logo's and text information that is used as part of the graphic.
Resources	The equipment that you will use to create your product (including hardware and software).

The purpose and content of pre-production

Visualization Diagram	Visualization diagrams are used to plan the layout of a static image in a visual manner. This will give an indication to the client of how the final document might look. This will enable them to suggest changes before the image goes into production which will save time in the long run
Scripts	Scripts perform a number of different functions including; identifying the place where an action is to take place, identifying which different characters will be in a particular scene, providing stage directions (movements), and stating what dialogue will be used in a particular scene. Scripts will also contain comments about the particular mood for a scene which the actors can use to take cues from.

File Type	Good Points	Bad Points
JPG	Zooming in is good quality Millions of colours Compresses well	Not good for sharp edges Not great for text Some colour detail is lost when compressed
TIFF	Features millions colours No colours are lost No or little compression	Not compatible with all applications Large file sizes
GIF	Compresses well Very small file size	Only has 256 colours Doesn't show all colours
PNG	Millions of colours Compresses well Sharp edges	Not compatible with all applications Can only use in a few particular places
EPS	Doesn't lose colour or detail Scalable to any size	Does not lose any colour quality Can only open in certain software



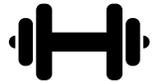
Artistic intention

Context and style



Mentally prepared

Focused and engaged



Physically prepared

Warmed up



Organisation

Equipment and music

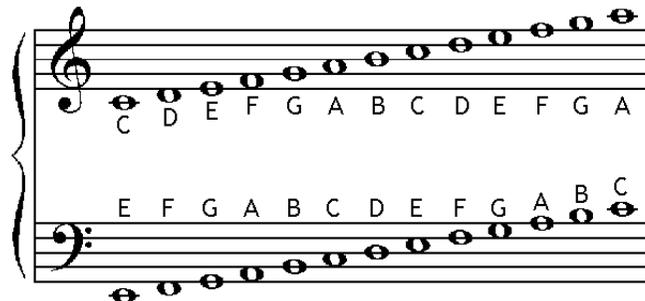


Meet targets

Refer to SMART targets

Musical Elements

- Dynamics** How loud or quiet a sound is.
- Rhythm** The variety of long and short sounds, that create patterns within music.
- Pitch** How high or low a sound is.
- Structure** The layout of the music.
- Melody** The tune.
- Instrumentation** The instruments used.
- Texture** The layers of sound within the music.
- Harmony** How multiple sounds work together.



Terminology

- Bar & bar lines
- Score
- Notation
- Articulation
- Accuracy
- Fluency
- Expression
- Tempo
- Metre
- Tonality
- Timbre
- Style
- Genre
- Ensemble

Key Documents

- Effective practice tasks No.1-20
- SMART targets
- Practice logbook

Performing arts

Job Roles and Responsibilities

Artistic director: Creates a programme for the year of which shows will be performed. May direct in-house performances.

Producer: Responsible for getting the show on stage by finding funding and employing creative staff. Mostly involved at the start of the project.

Director: Has the overall vision for the production. Reads the script. 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. Rehearses performance.

Playwright: Writes the play. Includes characters, plot and stage directions.

Choreographer: Prepares dance routines and movement sequences. Teaches movement.

Musical director: Leads the orchestra. In charge of all music in the production. Rehearses songs with singers and sorts musical arrangements (during rehearsals).

Musician: Rehearses and performs set pieces of music either as a solo or as part of an ensemble. Takes responsibility over their instrument, preparation of music and attends all rehearsals. Works with a range of performers, production crew and designers.

Roadie: Works alongside musicians/performers as an engineer and support before, after and during live shows. Often transports musical equipment to and from various venues. Builds set and staging and rigs all equipment used for amplifying sound.

Performer: Auditions. Learns lines/songs/dances, attends all rehearsals. Performs the show.

Understudy: Learning lines and movement so they can take over the role if there is an unexpected absence. Ready to perform.

Stage manager: Responsible for the smooth running of back stage. Oversees technical elements. In charge of performance space at all times. Organises rehearsal schedule and keeps lists of props and other tech needs, creates prompt book and calling cues.

Assistant Stage Manager: Helps the stage manager with the smooth running of the performance. Stays backstage and duties include prompting actors, general organisation and admin.

Deputy stage manager: Sits in the wings and tells lighting, sound and backstage what to do via in-house radio system known as 'cans'. Follows the script and makes sure that technical cues are in the right place.

Stage crew: Responsible for putting the set up/ taking it down and moving it during performance. Help out backstage. Wear black so they can't be seen.

Call boy: Makes sure everyone gets to the stage on time. Moves around the dressing room giving timed warnings and updates on the performance.

Props master: Responsible for any item that is carried on stage. Makes sure they are in the wings at the right time. Responsible for finding, making and maintaining props.

Year 10 Photography

Key Vocabulary



Rule of thirds - Description: In photography, the rule of thirds is a type of composition in which an image is divided evenly into thirds, both horizontally and vertically, and the subject of the image is placed at the intersection of those dividing lines, or along one of the lines itself.

Leading Lines – Lines that our eyes follow round a composition are called leading lines. They are a useful tool to create a visual flow or to emphasise focal points.

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

Composition - The considered layout of a piece of work.

Contrast - Shade or shadow.

Texture – the feel, appearance, or consistency of a surface or substance.

Scale - the use of symbols to represent ideas or qualities.

Analysis – detailed examination of the elements or structure of something.

Contextual Information

Abba Richman is a photographer, graphic designer and lecturer and consultant in Photography and Graphic Design. He creates photographic collages of the alphabet using everyday items and scenes that show an obvious letter shape. He was born in the UK and has been living in Israel since 1967. He studied Graphic Design and Photography at the Bezalel Academy of Art and Design in Jerusalem. *"I don't photograph glorious sunsets, fantastic landscapes, flowers, animals or beautiful things (or people). I find myself again and again looking at ordinary everyday things, at rubbish, backyards, at the man in the street, looking at things really close up and trying to find beauty in their colour and form."*

Overview

During this project, students will be introduced to the basic elements of composing and editing an effective photograph. Students will be introduced to the work of Abba Richman (AO1) and be asked to create a research page in which they analyse his work. Students will learn how to analyse the work of others in a way that is thorough and personal, so they are able to show how this work will influence their later project (AO3).

Through the work of Abba Richman, students will learn how to view the world in a more creative way, looking for letter shapes in everyday objects and scenes. This will teach students how to visualise an interesting shot and also how to compose an image correctly. Students will be taken outside to various locations in order to find all the letters of the alphabet.

Students will then learn the basics of Photoshop editing tools and how to improve the quality of their images (AO2). They will begin to create work to show the steps of their editing journey for specific photographs and annotate these steps to show their understanding (AO3).

This project will conclude by the students creating a final piece in the style of Abba Richman (AO4). This final piece will be a displayed full alphabet using all their editing alphabet images. Students will need to keep their final pieces refined and precise by making sure the composition shows each image being exactly the same size and that each image is effectively edited.

Each project must have:

- Artist research page.
- Annotated contact sheet.
- Photographs that are sharp and high quality.
- Minimum of 5 annotated editing journeys.
- Final piece as a whole slide.
- Evaluation.

1. **Magic Wand Tool** - helps to highlight areas of an image that are similar.
2. **Lasso Tool** - helps you to manually select a specific area of your photograph.
3. **Unsharp Mask** - helps to increase the sharpness of each pixel as well as make the contrast and colours of the image stand out more.
4. **Hue/Saturation Tool** - changes the vibrancy of the colours as well as the overall tone of the colours.
5. **Gaussian Blur** – can be used to blur selected areas of an image.

Mi familia y yo – My family and I

¡Preséntate!
el

Introduce yourself!



Me llamo... – My name is...
Se llama ... - He/she/ _____ is called -
Se llaman...
They/ _____ are called

Se escribe...
It is spelt...

F (efeh)	M (emeh)	S (esseh)	Y (ee griegah)
G (heh)	N (eneh)	T (teh)	Z (theta)
A (ah)	H (acheh)	U (uuh)	
B (beh)	I (ee)	V (veh)	
C (theh)	J (hota)	W (uuveh dobleh)	
D (deh)	K (kah)	Q (coo)	
E (eh)	L (eleh)	R (ere)	

Mi apellido es...
My surname is...
Su apellido es...
Their surname is...

Soy – I am...
Es – he/she/ _____ is ...
Son – they/ _____ are...

calvo/a(s) – bald
bajo/a(s) – short
delgado/a(s) - slim

alto /a(s)– tall
gordo/a(s) – fat



Tengo – I have
Tiene – he/she/ _____ has
Tienen – they/ _____ have

los ojos - eyes **azules** – blue **marrones** – brown **verdes** – green **castaños** - hazel

el pelo - hair **moreno** – dark brown **rubio** – blonde **castaño** – brown **rojo** – red **pelirrojo** - ginger

rizado – curly **liso** – straight **ondulado** – wavy **corto** – short

largo – long **fino** – fine **de punta** – spiky

a piel blanca/morena – fair/dark skin **los dientes prominentes** – big teeth
pecas – freckles **un tatuaje** – a tattoo

Llevo – I wear/ have
Lleva – he/she/ _____ wears/has
Llevan – they/ _____ wear/have

gafas – glasses
bigote – moustache
barba - beard



Las relaciones - Relationships

¿Te llevas bien con tu familia?

Do you get on well with your family?



Me llevo bien con... - I get on well with ...
Me cae(n) bien... - I get on well with...
Me divierto con... – I have fun with...
Echo de menos a... - I miss...

dado que...
visto que...
ya que...

- as/since/
given that

me apoya(n) – he/she/they support(s) me
me acepta(n) como soy – he/she/they accept(s) me as I am
me hace(n) reír – he/she/they make(s) me laugh
nunca me critica(n) – he/she/they never criticise(s) me
tenemos mucho en común – we have a lot in common
me da(n) consejos – he/she/they give(s) me advice
me dice(n) la verdad – he/she/they tell(s) me the truth



No me llevo bien con... - I don't get on well with
Me peleo con... - I argue with
Estoy harto de... - I am fed up of

me juzga(n) – he/she/they judge(s)
me me trata(n) como un niño/una niña – he/she/they treat(s) me like a child
no me deja(n) salir – he/she/they doesn't/don't let me go out
no me da(n) libertad – he/she/they/they doesn't/don't give me freedom
me critica(n) – he/she/ they criticise(s) me

Mi familia – My family

mi/mis - my (singular/plural)
padre – father
madre – mother
hermano/a – brother/sister
abuelo/a – granddad/
grandma
padrastra – stepdad
madrastra - stepmum
hermanastro/a –
stepbrother/sister
tío – uncle
tía –auntie
primo – cousin (m)
prima – cousin (f)
bisabuelo/a – great-
grandad/great-grandma
sobrino – nephew
sobrina – niece
hijo – son
hija – daughter
nieto – grandson
nieta – granddaughter
novio – boyfriend
novia – girlfriend
marido – husband
mujer – wife
mis parientes – my relatives



SCAN ME

¡ESCUCHA! - SCAN ME FOR PRONUNCIATION.

Mi casa – My house

¿Dónde vives?

Where do you live?



Vivo en... – I live in...
Vive en... – he/she lives in...
Vivimos en... – we live in...
Viven en... – they live in...

una casa – a house
una casa aislada – a detached house
una casa adosada – a semi-detached house
un chalet/chaleté – a bungalow/chalet/villa
un piso/un apartamento – a flat/apartment
un bloque de pisos – a block of flats
una finca/una granja – a farm

que – which
está en... – it's in

el campo – the countryside
la costa – the coast
las montañas/la sierra – the mountains
las afueras – the suburbs/outskirts
un barrio de la ciudad – a district/suburb of the city
el primer/segundo/tercer/cuarto piso de un edificio antiguo – it's on the first/second/third/fourth floor of an old building
el norte – the north
el este – the east
el oeste – the west
el sur – the south



Los muebles – Furniture

una butaca/un sillón – an armchair
una alfombra – a rug
una cama – a bed
un armario – a wardrobe
una luz – a light
calefacción – heating
una librería – a bookcase
una ducha – a shower
un espejo – a mirror
las cortinas – the curtains
una moqueta – a carpet
las paredes – the walls
la escalera – the stairs
un fregadero – a sink
un lavabo – a wash basin
una mesa – a table
unas sillas – some chairs
una lavadora – a washing machine
un lavaplatos – a dishwasher
un microondas – a microwave
un horno – an oven
una nevera/un frigorífico – a fridge
un congelador – a freezer

En la casa (no)hay... - in the house there is(n't)
Tiene... - it has...
Arriba hay – upstairs there is
Abajo hay – downstairs there is
Afuera hay - outside there is

cinco* habitaciones/salas – five rooms
dos* cuartos de baño – two bathrooms
un comedor – a dining room
un salón – a living room
una entrada – an entrance
un garaje – a garage
el césped – the lawn
un sótano – a basement

tres* dormitorios – three bedrooms
una cocina – a kitchen
un estudio/un despacho/una oficina – an office
un aseo – a toilet (room)
una terraza – a terrace/patio
un jardín – a garden
un comedor – a dining room



***¡OJO!**

Change the underlined word for the relevant number each time

Mi casa/piso es... - My house/flat is...

moderno/a – modern **antiguo/a** – old fashioned **pequeño/a** – small **enorme** – enormous **nuevo/a** – new
viejo/a – old **caro/a** – expensive **barato/a** – cheap **hermoso/a** – beautiful
bonito/a – pretty **feo/a** – ugly **cómodo/a** – comfy **cogedor/a** – comfy/cosy
espacioso/a – spacious **lujoso/a** – luxurious
limpio/a – clean **bien equipada** – well equipped

En mi ciudad/pueblo hay... - In my city/town there is...

Mi ciudad/pueblo tiene... - My city/town has...

un ayuntamiento – a town hall
un bar/muchos bares – a bar/lots of bars **un cine** – a cinema
un mercado – a market **una piscina** – a pool
un supermercado – a supermarket **una playa** – a beach
un museo – a museum **una plaza mayor** – a town square
una plaza de toros – a bull ring **un polideportivo** – a sports centre
una oficina de correos – a post office **una bolera** – a bowling alley
un teatro – a theatre **una iglesia** – a church **una biblioteca** – a library
una estación de trenes/autobuses – a train/bus station
un gran almacén – a department store
un centro comercial – a shopping centre

Es una ciudad/un pueblo _____ - It's a _____ city/town

histórico/a – historic **moderno/a** – modern
tranquilo/a – calm/quiet **ruidoso/a** – noisy
animado/a – lively **aburrido/a** – boring
turístico/a – touristy **industrial** – industrial
famoso/a – famous
conocido/a por... - known for...

Lo mejor / Lo peor de vivir en la ciudad/el pueblo es que... - the best/worst thing about living in the city/the town is that...

es tan fácil desplazarse – it's so easy to get around **hay una red de transporte público** – there's a public transport network
hay muchas posibilidades de trabajo – there are lots of job opportunities
hay tantas diversiones – there's so much to do **la vida es más interesante** – life is more interesting
el centro es tan ruidoso – the centre is so noisy **hay tanto tráfico** – there's so much traffic
se lleva una vida tan frenética – life is so hectic **la gente no se conoce** – people don't know each other
hay demasiado contaminación – there's too much pollution

Vocabulario útil – Useful vocab

había - there was/were
era – it was
tenía – it had
si fuera possible – if it were possible (next verb needs to be in the conditional form)

Mi pueblo – My town

¿Cómo es tu pueblo?

What is your town like?



Contemporary Issues in Sport- Learning Outcome 1 Understand the issues which affect participation in Sport

Learning Outcome 1	Key Elements that must be covered	Key Terms	Explanation
<p>Understand the issues which affect participation in sport</p> 	<p>The different user groups who participate in sport.</p>	<p>User Groups</p>	<p>E.g. ethnic minorities. ○ retired people/people over 50. ○ families with young children. ○ single parents. ○ children or teenagers. ○ disabled. ○ unemployed/economically disadvantaged. ○ working singles and couples.</p>
	<p>The possible barriers which affect participation in sport (with reference to the different user groups).</p>	<p>Employment/time. Work restrictions and family commitments.</p> <p>Disposable income. Accessibility of facilities/equipment. Lack of role models. Provision of activities. Awareness of activity provision. Portrayal of gender issues by the media.</p>	<p>Not much free time available. Women still seen as bringing up the family and not being involved in sport. Cannot afford cost of participation. Transport not available, no disabled access. Few ethnic role models, few female role models. Limited activities on offer. What is currently available? Mainly male sports shown on TV.</p>
	<p>The solutions to barriers which affect participation in sport.</p>	<p>Provision. Promotion. Access. Participation. Environment. Spectatorship. Media Coverage. Success for teams and individuals. Role Models. Acceptability.</p>	<p>Programming, providing and planning of times. Targeted promotions, using role models and initiatives. Access to facilities, equipment, sensible pricing. Football has widespread mass participation. Snow sport involve trips away or artificial terrain. Live professional rugby matches readily available. BBC1 sole coverage of Wimbledon – but Ashes not on free to air TV. Sir Hoy's success at the Olympics has increased participation in cycling Lack of role models e.g. lack of Asian footballers. E.g. Opposition to horse racing due to perceived animal cruelty.</p>
	<p>How the factors which can impact upon the popularity of sport in the UK relate to specific sporting trends.</p>	<p>Current trends in the popularity of different sports in the UK. Growth of new/emerging sports in the UK.</p>	<p>Studies and statistics show that fishing, cycling and swimming are the most popular growing sports in the UK. E.g. Ultimate Frisbee is increasing in popularity.</p>