

Saffir - Simpson hurricane scale

	Category 1 • Winds 74-95 mph (119-153 km/h) • Some damage and power cuts
	Category 2 • Winds 96-110 mph (154-177 km/h) • Extensive damage
	Category 3 • Winds 111-129 mph (178-208 km/h) • Well-built homes suffer major damage
	Category 4 • Winds 130-156 mph (209-251 km/h) • Severe damage to well-built homes, trees blown over
	Category 5 • Winds 157+ mph (252+ km/h) • Many buildings destroyed, major roads cut off

Key Words

Hurricane—a tropical cyclone with winds of 74 miles (119 kilometres per hour or greater that occurs especially in the western Atlantic, that is usually accompanied by rain, thunder, and lightning.

Tornado—violent windstorm that spirals around the vortex (a rotating column of air, occurs on land.

Eye—calm area at the centre of a tropical storm.

Air pressure—high and low—atmospheric pressure is measured in millibars and is the pressure of the air pressing down on the earth. Wind is caused by air moving from high atmospheric pressure to low atmospheric pressure.

Coriolis effect—the rotation of the earth causes wind to be pushed either right or left.

Path—the direction on which a hurricane will take.

Storm surge—the force of the wind can create large waves which flood the land and cause a great deal of damage.

Enhanced Fujita Scale for Tornadoes

The Enhanced Fujita Scale (EF), introduced in 2007, provides estimates of tornado strength based on damage surveys. The original scale was developed by Dr. Theodore Fujita and implemented in 1971.

Wind Speed	EF Scale	Typical Damage
65-85 mph	0	Peels surface off some roofs, some damage to gutters or siding
86-110 mph	1	Roof severely stripped, mobile homes overturned or badly damaged, loss of exterior doors, windows and other glass broken
111-135 mph	2	Roofs torn off well-constructed homes; foundations of frame homes shifted; mobile homes completely destroyed
136-165 mph	3	Entire stories of well-constructed homes destroyed; severe damage to large buildings such as shopping malls
166-200 mph	4	Well-constructed houses and whole-frame homes completely leveled
200+ mph	5	Strong frame houses leveled off foundations and swept away; high-rise buildings have significant structural deformation

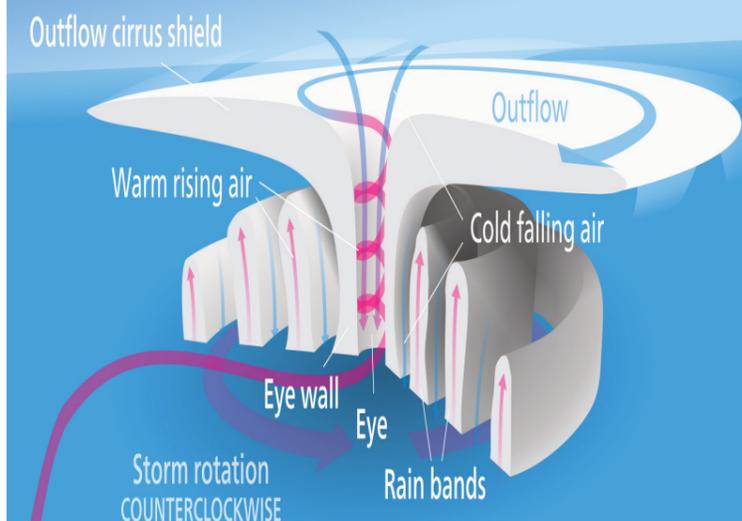
Source: Weather Underground (www.wunderground.com/resources/severe/fujita_scale.asp)



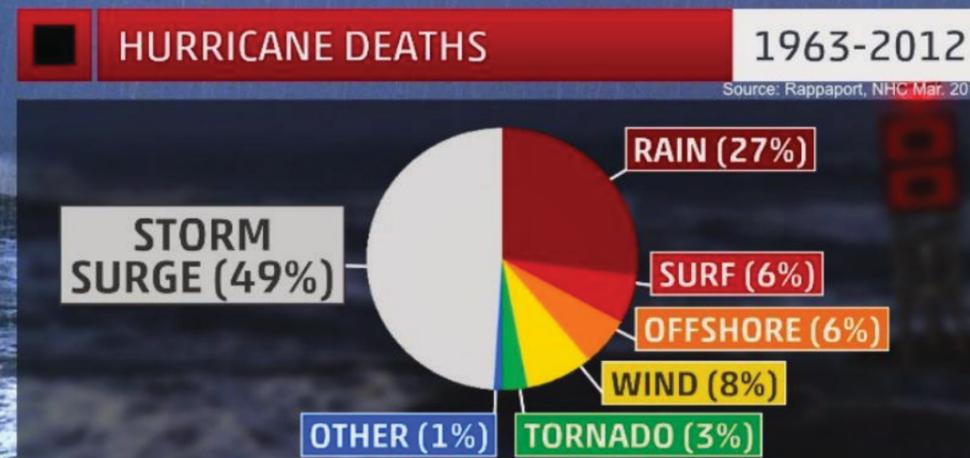
Measuring hurricane size

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage

HURRICANE STRUCTURE IN THE NORTHERN HEMISPHERE



Geography Knowledge organiser Weather Hazards



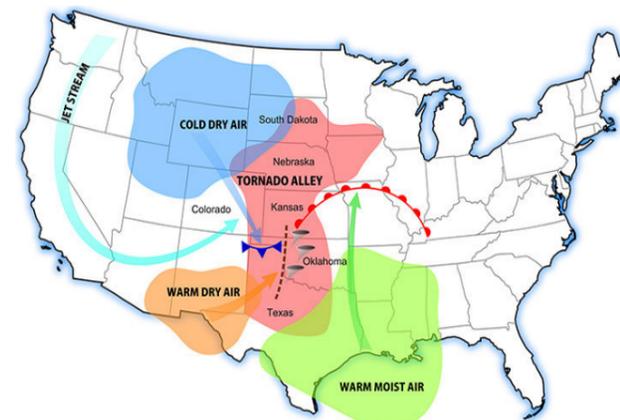
Key Words

Evacuation– emergency movement of people away from danger zones.

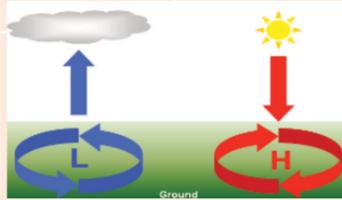
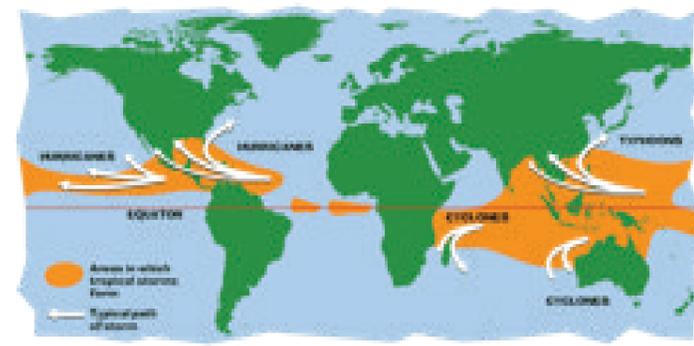
Primary effects– events caused immediately by the storm eg deaths.

Secondary effects– happen over a longer period of time as a direct result of primary effects eg job losses.

Levees– artificial barriers to prevent floods.



Distribution of Tropical Storms.	High and Low Pressure	
They are known by many names, including hurricanes (North America), cyclones (India) and typhoons (Japan and East Asia). They all occur in a band that lies roughly 5–15° either side of the Equator.	Low Pressure	High Pressure
	Caused by hot air rising. Causes stormy, cloudy weather.	Caused by cold air sinking. Causes clear and calm weather.



Formation of tornadoes

- Heat of the sun warms up the air.
- Moist air heats and starts to rise
- Warm moist air meets cold dry air.
- Explodes upwards creating thunder, rain and lightning.
- Low pressure brings in wind from the surrounding area.
- Winds from different directions cause it to rotate.
- Funnel drops from the sky.

Primary Effects of Tropical Storms

- The intense winds of tropical storms can destroy whole communities, buildings and communication networks.
- As well as their own destructive energy, the winds can generate abnormally high waves called storm surges.
- Sometimes the most destructive elements of a storm are these subsequent high seas and flooding they cause to coastal areas.

Secondary Effects of Tropical Storms

- People are **left homeless**, which can cause distress, poverty and ill health due to lack of shelter.
- **Shortage of clean water** and **lack of proper sanitation** makes it easier for diseases to spread.
- **Businesses are damaged** or destroyed causing unemployment.
- Shortage of food as **crops are damaged**.

Formation of Tropical Storms

1	The sun's rays heats large areas of ocean in the summer and autumn. This causes warm, moist air to rise over the particular spots
2	Once the temperature is 27° , the rising warm moist air leads to a low pressure . This eventually turns into a thunderstorm. This causes air to be sucked in from the trade winds .
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to spin .
4	When the storm begins to spin faster than 74mph , a tropical storm (such as a hurricane) is officially born.
5	With the tropical storm growing in power, more cool air sinks in the centre of the storm, creating calm, clear condition called the eye of the storm .
6	When the tropical storm hits land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Case Study: Super Outbreak of Tornadoes 2011

Social Effects
 324 deaths
 Thousands left homeless
 Transport disrupted as cars were destroyed
 Community centres and places of worship shut down.



Economic Effects Hundreds of businesses destroyed Total damage \$11 billion People went for days without electricity \$7.7 billion of insurance claims	Environmental Effects Trees and crops destroyed Ground scouring in Mississippi Concrete steps and house foundations torn apart. Habitats destroyed Dust clouds led to breathing problems and polluted water supplies
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Case Study: Kirkby Tornado 2018

Social Effects
 84 years old woman taken to hospital with cuts and bruises
 Peter Atkinson had soil blown into his eyes
 Nobody seriously hurt

Economic Effects One family had to have their roof repaired Garden furniture was blown around and some was broken Police and fire service attended the scene to ensure everyone was ok	Environmental Effects Trees blown over Tiles fell from roof in Tower Hill Farmers fields sustained some crop damage.
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Case Study: Typhoon Haiyan 2013 LIC



Causes
 Started as a tropical depression on **2nd November 2013** and gained strength. Became a Category 5 "**super typhoon**" and made landfall on the Pacific islands of the Philippines.

Effects

- Almost **6,500 deaths**.
- **130,000 homes destroyed**.
- Water and sewage systems destroyed had caused **diseases**.
- **Emotional grief** for dead.

Management

- The UN raised **£190m in aid**.
- USA & UK sent **helicopter carrier ships** deliver aid remote areas.
- **Education** on typhoon preparedness.

Case Study: Hurricane Katrina 2005 USA HIC

Causes
 Started as a tropical depression but strengthened as it moved over the deep warm waters of the Gulf of Mexico and moved towards New Orleans in Louisiana USA, becoming category 5 storm

Effects
 Almost **2,000 dead**
 20 foot storm surge moved 6 miles inland.
 80% New Orleans flooded.
 \$160 billion damage.
 1.2 million people evacuated

Management
 Federal aid of \$62 billion.
 American Red Cross donations of \$62million.
 34 states took in 1000's of evacuees.



History Knowledge Organiser 1, Section A: The campaign for suffrage

Key Terms / Events	
1. Suffrage	The right to vote in political elections.
2. Electoral reform	Changes to the system of voting (elections).
3. Parliament	Responsible for making laws.
4. House of Commons	One of the houses of Parliament in the United Kingdom. MPs debate and vote here.
5. Chartism	A working-class movement active between 1838 and 1857 which aimed to get political rights for the working class.
6. Legislation	Another name for a law.
7. Peterloo Massacre, August 1819	Cavalry charged into a crowd of people who had gathered in Manchester to demand better political rights. 15 people were killed and hundreds were injured.
8. Demonstration	Action by a large group or groups protesting against something or demanding something.
9. Suffragists	National Union of Women's Suffrage Societies (NUWSS). A group formed in 1897 (led by Millicent Fawcett) who campaigned for the right to vote for women in a peaceful way.
10. Suffragettes	The Women's Social and Political Union. Formed in 1903 (led by Emmeline Pankhurst) who campaigned for the right to vote for women in a militant and more violent manner.
11. Militant	Favouring confrontational or violent methods in support of a political cause. E.g. the Suffragettes were a militant group.
12. Petition	A request – usually written – that is signed by many people to demonstrate their support for a particular cause.
13. Arson	The act of deliberately setting fire to property. A tactic used by the Suffragettes.
14. Hunger strike	A tactic used by many Suffragettes when in prison. They would refuse to eat.
15. Force feeding	Suffragettes who refused to eat were force fed in order to ensure that they remained alive.
16. 'Cat and Mouse' Act	Passed by the government in 1913. Hunger-striking Suffragettes were released from prison when they appeared weak or ill. However, once they recovered they could be re-arrested.
17. Representation of the People Act, 1918	Gave the right to some women (aged 30 and over who owned property or their husbands did). Also extended the right to vote to men aged 21 and over.

Key People	
18. William Lovett	Wrote the People's Charter which set out the six main aims of the Chartist movement.
19. Millicent Fawcett	Leader of the peaceful Suffragists.
20. Emmeline Pankhurst	Leader of the militant Suffragettes.
21. Emily Davison	Suffragette who was knocked over and killed by the King's horse at Epsom in 1913.

22. August 1819 – Peterloo Massacre.
15 people were killed and hundreds injured during a gathering in Manchester

23. 1832 – Great Reform Act
Increased number of voters. Mainly helped the middle class.

25. 1867 – Representation of the People Act
Gave more working class men the right to vote.

26. 1872
Secret ballots introduced so voting was done privately.

27. 1897
Suffragists formed.

28. 1903
Suffragettes formed.

29. 1913
Emily Davison was killed by the King's Horse at Epsom.

30. 1918 – Representation of the People Act
All men over 21 given the right to vote, and some women over the age of 30.

31. 1928 – Equal Franchise Act
Women were given the right to vote on equal terms to men.

History: Knowledge Organiser 1, Section B: World War One

Key Terms / Events	
1. Imperialism	Increasing a country's power by taking over other territories. Building up an empire.
2. Militarism	The belief that a country should have a strong military and be prepared to use it.
3. Alliances	An agreement between countries to work together/co-operate with each other.
4. Nationalism	Patriotism. The belief in the strength of your country. Specifically, believing that your country is better than others.
5. Triple Entente	An alliance between Britain, France, and Russia. This friendship agreement was signed in 1907.
6. Triple Alliance	An alliance between Germany, Austria-Hungary, and Italy, formed in 1882.
7. Schlieffen Plan	Germany's plan to go through Belgium to defeat France quickly, followed by sending German troops to face Russia in the East.
8. Treaty of London, 1839	Treaty through which Britain promised to protect Belgium's independence. This brought Britain into WWI when Germany invaded Belgium.
9. Propaganda	Information (often exaggerated or misleading) that is used to persuade you to believe or do something. See Image 1.
10. Western Front	The main location of fighting during WWI. Predominantly located in France and Belgium.
11. Trenches	The majority of the First World War was fought in trenches. They were dug into the ground in order to protect soldiers from enemy fire.
12. No man's land	The area between the two opposing front line trenches
13. Stalemate	A situation war where neither side can win a clear victory. When in stalemate, the war becomes long and slow. WWI is an example of this.
14. Battle of the Somme	A battle of the First World War fought between the armies of Britain and France against Germany. It took place between 1 st July and the 18 th November 1916.
15. Casualties	A person that is killed or injured in war.
16. Armistice	Signed on the 11 th November 1918. It ended the fighting in WWI – Germany surrendered.
17. Treaty of Versailles	The treaty that decided the punishments that Germany faced at the end of the First World War. Germany had to: accept blame for starting the war, pay reparations, had land taken off them, and had their military weakened.

Key People	
18. Archduke Franz Ferdinand	Heir to the Austrian throne in 1914. Assassinated on 28 th June 1914.
19. Gavrilo Princip	The man who killed Archduke Franz Ferdinand.
20. Lord Kitchener	Secretary of State for War. Responsible for organising the huge volunteer army.
21. General Douglas Haig	Commander of British Forces (BEF) on the Western Front.

Image 1. Recruitment poster



22. 28th June 1914

Archduke Franz Ferdinand assassinated in Sarajevo.

23. July-August 1914

The 'July Crisis'. The chain of events that led to the outbreak of the First World War.

24. September-November 1914

Germany tried to take Paris and the North Sea ports. By the end of 1914, fighting reached a **stalemate**.

25. 1916

The Battle of Verdun and the Battle of the Somme. Huge losses were suffered by both sides.

26. 1917

Russia surrendered, but the USA entered the war on the side of Britain and France.

27. 1918

The Germans launched a massive attack on the Western Front in March. The Allies counter-attacked in August. By October, the Germans were in full retreat.

28. 11th

November 1918
The Armistice was signed. Germany surrendered.

English Language Paper 2 Knowledge Organiser – Writing

ALWAYS PLAN YOUR WRITING!

One writing task, linked by a theme to the reading extract. Make sure in the exam you understand the **PAF** (Purpose, Audience and Format).

Different text types and features (AO5)

Structuring Your Argument (AO5)

Punctuation (AO6)

<p>1. Informal letters: a letter that is written to a friend or a member of your family.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Address and date in the top right of the page <input type="checkbox"/> Greeting: e.g. Hi, Hello, Dear ... <input type="checkbox"/> Use of contractions: e.g. don't, can't ... <input type="checkbox"/> Short introductory paragraph <input type="checkbox"/> 3/4 middle paragraphs <input type="checkbox"/> Closing paragraph to round off the purpose of the letter <input type="checkbox"/> Chatty style: shown through language and punctuation. 		<p>4. Articles for newspapers and magazines: written to inform, persuade and entertain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Main heading <input type="checkbox"/> Introduction that draws the reader's attention <input type="checkbox"/> three to four central paragraphs <input type="checkbox"/> a short but effective conclusion <input type="checkbox"/> Lively style <input type="checkbox"/> Include facts and opinions <input type="checkbox"/> Newspaper: Who, what, why, where, when and how at the start. 		<p>1. Introducing Your Argument</p> <p>I think that... It is obvious that... I strongly believe that... It is clear that... It is undeniable that... The fact is that... I ask you to consider... In my opinion,...</p>		<p>1. Exclamation marks!</p> <p>An exclamation mark is used after interjections, humorous sentences or to show surprise and excitement.</p>	
<p>2. Formal letters: a letter written to a person you may not know or who you may know in a more formal way.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Address and date in the top right of the page <input type="checkbox"/> Address of the person you are writing to on the left. <input type="checkbox"/> Greeting : e.g. Dear Mrs Fletcher, or Dear Sir/Madam. <input type="checkbox"/> Short introductory paragraph <input type="checkbox"/> 3/4 middle paragraphs <input type="checkbox"/> Closing paragraph to round off the letter <input type="checkbox"/> No contradictions: e.g. do not, cannot. <input type="checkbox"/> Formal style 		<p>5. Leaflets: written to inform, advise and persuade.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Present information so it is easy to find. <input type="checkbox"/> Heading <input type="checkbox"/> Sub-headings <input type="checkbox"/> Bullet points <input type="checkbox"/> Pictures (though in your exam you are given credit For what you write, not your ability as an artist!) <input type="checkbox"/> Depending on the audience, the tone can be informal or formal. 		<p>2. Developing Your Argument</p> <p>Furthermore,... In addition to... Likewise,... Moreover,... Firstly,... Again,... Next,... The most compelling reason is... Without doubt,...</p>		<p>2. Question marks?</p> <p>Question marks are used in both formal and non-formal writing and in cases where direct and indirect questions are being asked.</p>	
<p>3. Speech: to persuade, inform and entertain</p> <ul style="list-style-type: none"> <input type="checkbox"/> a clear address to an audience <input type="checkbox"/> effective/fluent linked sections to indicate sequence <input type="checkbox"/> rhetorical indicators that an audience is being addressed throughout <input type="checkbox"/> a clear sign off e.g. 'Thank you for listening'. 		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>3. Admitting Counter-Arguments</p> <p>Although it is true that... Admittedly... While some people may think that... Unfortunately, it may be the case that... I acknowledge that... I can understand that... I appreciate that... It is unfortunately true that... I concede that ...</p>		<p>3. (Brackets)</p> <p>Brackets are used to add extra information, asides or more detail.</p>	
<p>4. Hypophora</p> <p>A writer raises a question and then immediately provides an answer to that question.</p>		<p>4. Countering</p> <p>However,... Nevertheless,... Even so,... Whereas,... Nonetheless,... Despite... But... In fact,... Conversely,...</p>		<p>5. Colons:</p> <p>A colon is used to inform the reader that what follows the mark proves, explains, or lists further information.</p>			
<p>5. Parallelism</p> <p>Using elements in sentences that are grammatically similar or identical in structure, sound, meaning, or meter. This technique adds symmetry, effectiveness and balance to the written piece. 'Blessed are the...' 'Ask not what your country can do for but what you can do for your country.'</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>7. Comma</p> <p>Commas are used to separate lists, introductory words and clauses.</p>			
<p>6. Ethos</p> <p>Getting the audience to believe you are writing with good intentions and have a strong understanding of the topic you are talking about. This will get them on your side and make your argument more believable. 'Many of you know me, I am a long-standing member of this community.'</p>		<p>3. Admitting Counter-Arguments</p> <p>Although it is true that... Admittedly... While some people may think that... Unfortunately, it may be the case that... I acknowledge that... I can understand that... I appreciate that... It is unfortunately true that... I concede that ...</p>		<p>8. Apostrophe</p> <p>Apostrophes are used to show possession or omission.</p>			
<p>7. Logos</p> <p>Using rationality and logic to persuade the audience to your point of view. 'In the thousands of years that humans have been on the earth, there have been no recorded sightings of a flying pig. Therefore, it stands to reason that they do not exist.'</p>		<p>4. Countering</p> <p>However,... Nevertheless,... Even so,... Whereas,... Nonetheless,... Despite... But... In fact,... Conversely,...</p>		<p>Persuasive Devices (AO5)</p>			
<p>8. Pathos</p> <p>An appeal to the audience's emotions, usually using emotive language. The opposite of logos as there is no reason involved. 'Thousands of animals die in agony each year, just so we can have the perfect shade of lipstick. Is this fair or right?'</p>		<p>5. Conclusion</p> <p>In summary,... To conclude,... Finally,... In conclusion,... For these reasons... All in all,... In short,... Ultimately,...</p>		<p>1. Adverb of Affirmation</p> <p>An adverb that is used in a sentence to affirm it as true. 'She positively identified her attacker'</p>			
<p>9. Other persuasive features include...</p> <ul style="list-style-type: none"> <input type="checkbox"/> rhetorical questions, personal pronouns <input type="checkbox"/> Triples, alliteration <input type="checkbox"/> Statistics, facts and opinions <input type="checkbox"/> Anecdote, short sentences 		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>2. Anaphora</p> <p>The repetition of a phrase at the start of successive clauses, sentences or paragraphs.</p>			
<p>1 - ing</p> <p>You could start your sentence with an 'ing' word. For example: Unlocking the door, she left the room.</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>3. Modal Verbs</p> <p>The use of words like 'could', 'should' and 'might' to make suggestions to the audience. Modal verbs make your writing sound more collegiate and inclusive, and less demanding.</p>			
<p>2 – adverb</p> <p>You could start your sentence with an adverb. For example: Lovingly, he stared into her beautiful green eyes.</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>4. Hypophora</p> <p>A writer raises a question and then immediately provides an answer to that question.</p>			
<p>3 - simile</p> <p>You could start your sentence with a simile. For example: As brave as a lion, he slayed the evil monster.</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>5. Parallelism</p> <p>Using elements in sentences that are grammatically similar or identical in structure, sound, meaning, or meter. This technique adds symmetry, effectiveness and balance to the written piece. 'Blessed are the...' 'Ask not what your country can do for but what you can do for your country.'</p>			
<p>4 – preposition</p> <p>You could start your sentence with a preposition. For example: On the top of the hill, there stood an old castle.</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>6. Ethos</p> <p>Getting the audience to believe you are writing with good intentions and have a strong understanding of the topic you are talking about. This will get them on your side and make your argument more believable. 'Many of you know me, I am a long-standing member of this community.'</p>			
<p>5 – connective</p> <p>You could start your sentence with a connective. For example: Although he was hurt, he continued on his quest!</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>7. Logos</p> <p>Using rationality and logic to persuade the audience to your point of view. 'In the thousands of years that humans have been on the earth, there have been no recorded sightings of a flying pig. Therefore, it stands to reason that they do not exist.'</p>			
<p>6 – drop in clause</p> <p>You could add a drop in clause to your sentence. For example: Michelle, who was very clumsy, always fell over her own laces.</p>		<p>6. Essay: usually written to argue or explain.</p> <ul style="list-style-type: none"> <input type="checkbox"/> an effective introduction and convincing conclusion <input type="checkbox"/> effectively/fluent linked paragraphs to sequence a range of ideas. 		<p>8. Pathos</p> <p>An appeal to the audience's emotions, usually using emotive language. The opposite of logos as there is no reason involved. 'Thousands of animals die in agony each year, just so we can have the perfect shade of lipstick. Is this fair or right?'</p>			

Assessment Objectives	
AO1 (1a-1d)	1a – Identify explicit information 1b – Identify explicit ideas 1c – Interpret implicit information 1d – Interpret implicit ideas
AO1 (2a & 2b)	2a – Select evidence from different texts 2b – Synthesise evidence from different texts
AO2 1a 1b 1c 1d	1a – Comment on, explain and analyse how writers use language, using relevant subject terminology to support their views 1b – Comment on, explain and analyse how writers use structure, using relevant subject terminology to support their views 1c – Comment on, explain and analyse how writers achieve effects, using relevant subject terminology to support their views 1d – Comment on, explain and analyse how writers influence readers, using relevant subject terminology to support their views
AO3 1a 1b 1c	1a – Compare writers' ideas across two or more texts 1b – Compare writers' perspectives across two or more texts 1c – Compare writers' ideas, as well as how these are conveyed, across two or more texts 1d – Compare writers' perspectives, as well as how these are conveyed, across two or more texts
AO4	Evaluate texts critically and support this with appropriate textual references

Component 2 Section A English Language Knowledge Organiser	
Q1 – 3 marks	<i>Find the word(s), number(s) or statistics you are asked to find from the question. Write these out only – NO FULL SENTENCES!</i>
Q2 – 10 marks	<i>Use PEE by tracking inferences through the extract. Provide between 8 and 13 embedded quotes. Refer to language and use relevant terminology at least 3 times. Link analytical comments back to the question.</i>
Q3 – 3 marks	<i>Identify obvious and/or less obvious inferences and quote from the text in support – short answers.</i>
Q4 – 10 marks	<i>Use PEE by tracking through extract. Provide between 8 and 13 embedded quotes. Link analytical comments back to question.</i>
Q5 – 4 marks	<i>Make a point from text 1 using a quote in support and make a similar point and quote from text 2. Repeat process and make a linking comment.</i>
Q6 – 10 marks	<i>Use PEE 3 or 4 times from text 1, tracking through the extract. Track through text 2 making comparison PEE points.</i>

19 th Century Context
The Industrial Revolution – population moves from country to towns. More people now in employment than farm land etc. Mass production due to new machinery and inventions.
Poverty and The Poor Laws – poverty exasperated by poor living conditions caused by over-population in towns and cities. Poor Laws created to 'solve' problem. Poor Houses. Mortality rate increases
Education – for middle and upper classes only. Board schools set up by philanthropists but generally for boys only. Children expected to work from about age 5.
Entertainment – Gin palaces, pubs, Musical Hall, Freak shows, circus, 'sing-along'
Social Class – class system replaces rank system ☹️ social mobility possible for first time. Invention of the 'middle' class
Hobbies and Past-times - hoop and stick, hop scotch, etc.

Terminology
Infer
Inference
Writer
Suggests
Explains
Surmise
word(s)
Phrases
Noun verb
Adjective
Paragraph
Section
Illustrates
Comparison
Similarity
Difference
However
Moreover
Simile
Metaphor
Presented
Language
Tone
Structure
Highlights
Portrays
Emphasises
Rhetoric



KEY
FORMULAE

$$A = bh$$

$$A = bh$$

$$A = \frac{bh}{2}$$

$$A = \frac{1}{2}(a + b)h$$

Key Vocabulary

Area = Measurement of a surface

Perimeter = The continuous line forming the boundary of a closed shape

Volume = The amount of space that an object occupies

Times Tables Practice

- $1 \times 1 = 1$
- $2 \times 1 = 2$
- $3 \times 1 = 3$
- $4 \times 1 = 4$
- $5 \times 1 = 5$
- $6 \times 1 = 6$
- $7 \times 1 = 7$
- $8 \times 1 = 8$
- $9 \times 1 = 9$
- $10 \times 1 = 10$

- $1 \times 2 = 2$
- $2 \times 2 = 4$
- $3 \times 2 = 6$
- $4 \times 2 = 8$
- $5 \times 2 = 10$
- $6 \times 2 = 12$
- $7 \times 2 = 14$
- $8 \times 2 = 16$
- $9 \times 2 = 18$
- $10 \times 2 = 20$

- $1 \times 3 = 3$
- $2 \times 3 = 6$
- $3 \times 3 = 9$
- $4 \times 3 = 12$
- $5 \times 3 = 15$
- $6 \times 3 = 18$
- $7 \times 3 = 21$
- $8 \times 3 = 24$
- $9 \times 3 = 27$
- $10 \times 3 = 30$

Key Conversions

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%



KEY
FORMULAE

$$A = \pi r^2$$

$$A = bh$$

$$C = \pi d$$

$$A = \frac{3}{4} (\pi r^2)$$

Key Vocabulary

Radius = A straight line from the centre to circumference of a circle

Diameter = A straight line passing from side to side through the centre of a circle

Circumference = Enclosing boundary of a curved shape

Times Tables Practice

$$\begin{aligned} 1 \times 4 &= 4 \\ 2 \times 4 &= 8 \\ 3 \times 4 &= 12 \\ 4 \times 4 &= 16 \\ 5 \times 4 &= 20 \\ 6 \times 4 &= 24 \\ 7 \times 4 &= 28 \\ 8 \times 4 &= 32 \\ 9 \times 4 &= 36 \\ 10 \times 4 &= 40 \end{aligned}$$

$$\begin{aligned} 1 \times 5 &= 5 \\ 2 \times 5 &= 10 \\ 3 \times 5 &= 15 \\ 4 \times 5 &= 20 \\ 5 \times 5 &= 25 \\ 6 \times 5 &= 30 \\ 7 \times 5 &= 35 \\ 8 \times 5 &= 40 \\ 9 \times 5 &= 45 \\ 10 \times 5 &= 50 \end{aligned}$$

$$\begin{aligned} 1 \times 6 &= 6 \\ 2 \times 6 &= 12 \\ 3 \times 6 &= 18 \\ 4 \times 6 &= 24 \\ 5 \times 6 &= 30 \\ 6 \times 6 &= 36 \\ 7 \times 6 &= 42 \\ 8 \times 6 &= 48 \\ 9 \times 6 &= 54 \\ 10 \times 6 &= 60 \end{aligned}$$

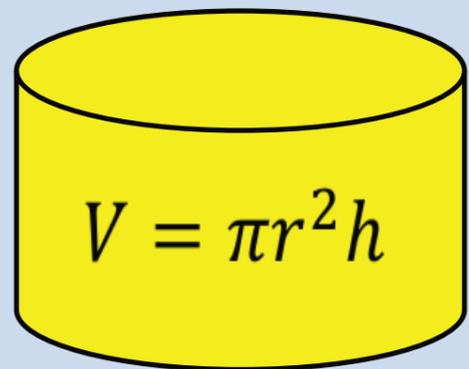
Key Conversions

Fraction	Decimal	Percentage
$\frac{1}{10}$	0.1	10%
$\frac{1}{100}$	0.01	1%
$\frac{1}{1000}$	0.001	0.1%

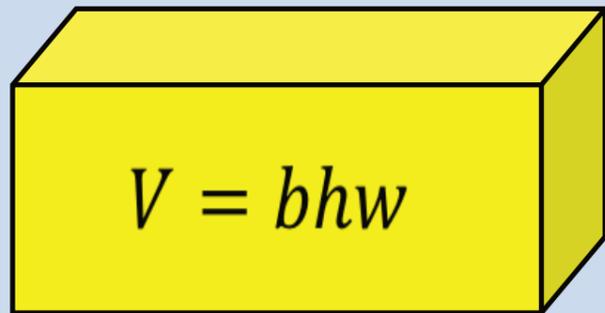


Year 8 Knowledge Organiser - Maths

3

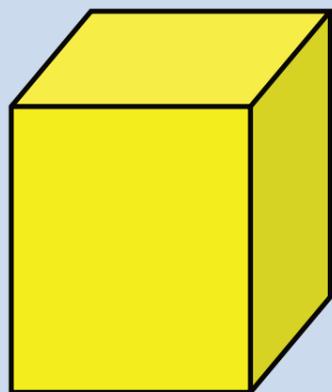


$$V = \pi r^2 h$$



$$V = bhw$$

KEY FORMULAE



$$V = bhw$$

Key Vocabulary

Cross Section = A surface exposed by making a straight cut through a 3D Shape

Surface = The upmost layer of something

Dimension = A measurable extent of a particular kind

Times Tables Practice

$$\begin{aligned} 1 \times 7 &= 7 \\ 2 \times 7 &= 14 \\ 3 \times 7 &= 21 \\ 4 \times 7 &= 28 \\ 5 \times 7 &= 35 \\ 6 \times 7 &= 42 \\ 7 \times 7 &= 49 \\ 8 \times 7 &= 56 \\ 9 \times 7 &= 63 \\ 10 \times 7 &= 70 \end{aligned}$$

$$\begin{aligned} 1 \times 8 &= 8 \\ 2 \times 8 &= 16 \\ 3 \times 8 &= 24 \\ 4 \times 8 &= 32 \\ 5 \times 8 &= 40 \\ 6 \times 8 &= 48 \\ 7 \times 8 &= 56 \\ 8 \times 8 &= 64 \\ 9 \times 8 &= 72 \\ 10 \times 8 &= 80 \end{aligned}$$

$$\begin{aligned} 1 \times 9 &= 9 \\ 2 \times 9 &= 18 \\ 3 \times 9 &= 27 \\ 4 \times 9 &= 36 \\ 5 \times 9 &= 45 \\ 6 \times 9 &= 54 \\ 7 \times 9 &= 63 \\ 8 \times 9 &= 72 \\ 9 \times 9 &= 81 \\ 10 \times 9 &= 90 \end{aligned}$$

Key Conversions

Fraction	Decimal	Percentage
$\frac{1}{5}$	0.2	20%
$\frac{2}{5}$	0.4	40%
$\frac{3}{5}$	0.6	60%



Year 8 Knowledge Organiser - Maths

4

Times Tables Practice

$1 \times 10 = 10$

$2 \times 10 = 20$

$3 \times 10 = 30$

$4 \times 10 = 40$

$5 \times 10 = 50$

$6 \times 10 = 60$

$7 \times 10 = 70$

$8 \times 10 = 80$

$9 \times 10 = 90$

$10 \times 10 = 100$

$1 \times 11 = 11$

$2 \times 11 = 22$

$3 \times 11 = 33$

$4 \times 11 = 44$

$5 \times 11 = 55$

$6 \times 11 = 66$

$7 \times 11 = 77$

$8 \times 11 = 88$

$9 \times 11 = 99$

$10 \times 11 = 110$

$1 \times 12 = 12$

$2 \times 12 = 24$

$3 \times 12 = 36$

$4 \times 12 = 48$

$5 \times 12 = 60$

$6 \times 12 = 72$

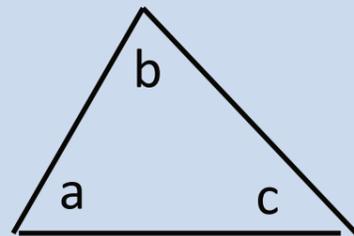
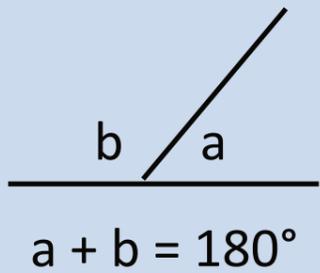
$7 \times 12 = 84$

$8 \times 12 = 96$

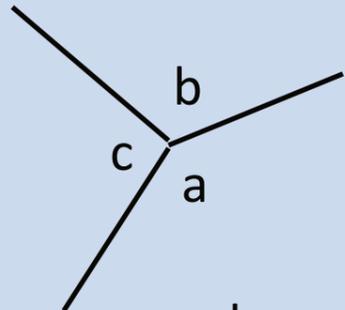
$9 \times 12 = 108$

$10 \times 12 = 120$

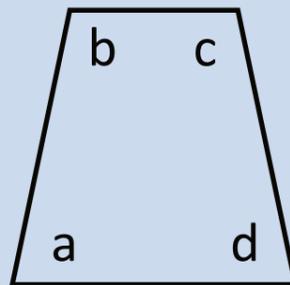
KEY ANGLE FACTS



$a + b + c = 180^\circ$



$a + b + c = 360^\circ$



$a + b + c + d = 360^\circ$

Key Vocabulary

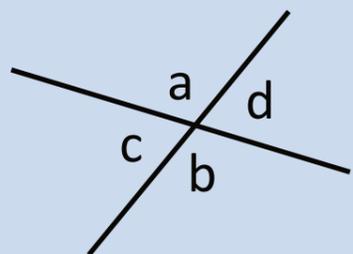
Acute Angle = An angle less than 90°

Right Angle = An angle measuring exactly 90°

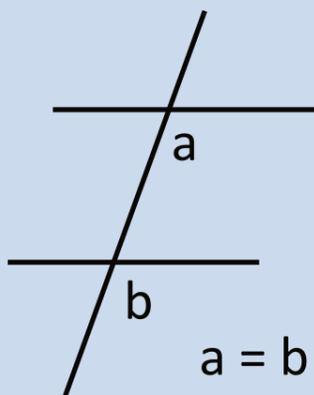
Obtuse Angle = An angle measuring greater than 90°
but less than 180°

Key Conversions

Fraction	Decimal	Percentage
$\frac{1}{8}$	0.125	12.5%
$\frac{3}{8}$	0.375	37.5%
$\frac{5}{8}$	0.625	62.5%

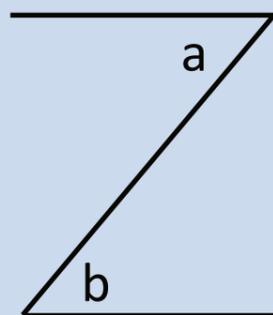


$a = b$
 $c = d$



$a = b$
Because
corresponding
angles are equal

KEY
ANGLE
FACTS



$a = b$
Because
alternate
angles are
equal

Key Vocabulary

Straight Line Angle = An angle measuring exactly 180°

Reflex Angle = An angle greater than 180° but less than 360°

Full Turn Angle = An angle that is exactly 360°

Times Tables Practice

- $1 \times 6 = 6$
- $2 \times 6 = 12$
- $3 \times 6 = 18$
- $4 \times 6 = 24$
- $5 \times 6 = 30$
- $6 \times 6 = 36$
- $7 \times 6 = 42$
- $8 \times 6 = 48$
- $9 \times 6 = 54$
- $10 \times 6 = 60$

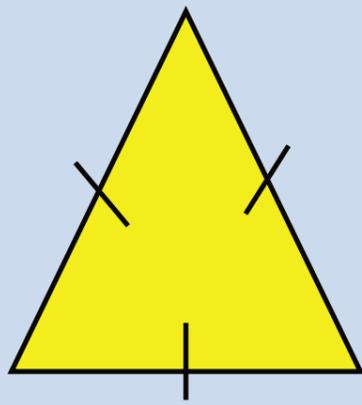
- $1 \times 8 = 8$
- $2 \times 8 = 16$
- $3 \times 8 = 24$
- $4 \times 8 = 32$
- $5 \times 8 = 40$
- $6 \times 8 = 48$
- $7 \times 8 = 56$
- $8 \times 8 = 64$
- $9 \times 8 = 72$
- $10 \times 8 = 80$

- $1 \times 9 = 9$
- $2 \times 9 = 18$
- $3 \times 9 = 27$
- $4 \times 9 = 36$
- $5 \times 9 = 45$
- $6 \times 9 = 54$
- $7 \times 9 = 63$
- $8 \times 9 = 72$
- $9 \times 9 = 81$
- $10 \times 9 = 90$

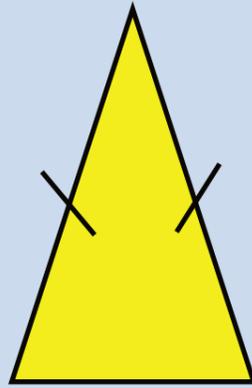
Key Conversions

- 1 foot = 12 inches
- 1 inch = 2.54cm
- 1 tonne = 1000kg
- 1kg = 2.2pounds
- 1 yard = 0.9144m
- 1 foot = 0.3048m
- 1 stone = 6.35

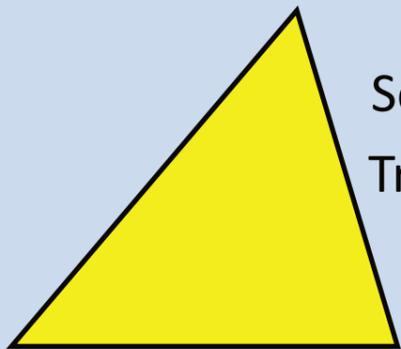
- Average Height of a Man = 1.76m
- Average Height of a Female = 1.61m
- Height of Radio City Tower = 138m
- Height of a Liver Bird = 5.5m
- Height of Door = 2m



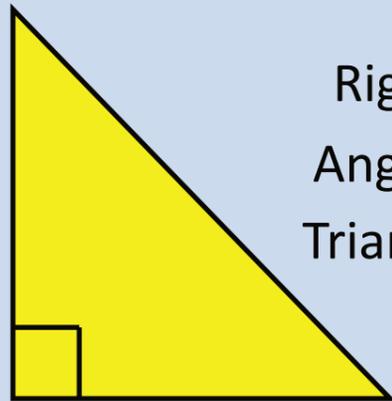
Equilateral Triangle



Isosceles Triangle



Scalene
Triangle



Right
Angled
Triangle

Types of Triangle

Key Vocabulary

Equilateral Triangle = A triangle with 3 equal sides and 3 equal angles

Isosceles Triangle = A triangle with 2 equal sides and 2 equal angles

Scalene Triangle = A triangle with 3 unequal sides and 3 unequal angles

Times Tables Practice

$$\begin{aligned} 1 \times 4 &= 4 \\ 2 \times 4 &= 8 \\ 3 \times 4 &= 12 \\ 4 \times 4 &= 16 \\ 5 \times 4 &= 20 \\ 6 \times 4 &= 24 \\ 7 \times 4 &= 28 \\ 8 \times 4 &= 32 \\ 9 \times 4 &= 36 \\ 10 \times 4 &= 40 \end{aligned}$$

$$\begin{aligned} 1 \times 7 &= 7 \\ 2 \times 7 &= 14 \\ 3 \times 7 &= 21 \\ 4 \times 7 &= 28 \\ 5 \times 7 &= 35 \\ 6 \times 7 &= 42 \\ 7 \times 7 &= 49 \\ 8 \times 7 &= 56 \\ 9 \times 7 &= 63 \\ 10 \times 7 &= 70 \end{aligned}$$

$$\begin{aligned} 1 \times 12 &= 12 \\ 2 \times 12 &= 24 \\ 3 \times 12 &= 36 \\ 4 \times 12 &= 48 \\ 5 \times 12 &= 60 \\ 6 \times 12 &= 72 \\ 7 \times 12 &= 84 \\ 8 \times 12 &= 96 \\ 9 \times 12 &= 108 \\ 10 \times 12 &= 120 \end{aligned}$$

Key Conversions

$$\begin{aligned} 1000\text{g} &= 1\text{kg} \\ 1000\text{m} &= 1\text{km} \\ 1000\text{ml} &= 1\text{l} \\ 5\text{miles} &= 8\text{km} \\ 10\text{mm} &= 1\text{cm} \\ 100\text{cm} &= 1\text{m} \\ 100\text{cl} &= 1\text{l} \end{aligned}$$

Units for Distance

Metres, Miles, Inches, Yards, Feet

Units for Weight

Grams, Ounce, Stone, Pound

Units for Volume

Litres, cm^3 , Gallon, Pint, Fluid Ounce

1 | AEROBIC RESPIRATION

Energy is needed for life processes such as:

- growth and repair
- movement
- control of body temperature in mammals

Respiration is a chemical reaction that happens in all living cells, including plant cells and animal cells.

Aerobic respiration

- Glucose and oxygen react together in cells to produce carbon dioxide and water and releases energy.
- The reaction is called **aerobic respiration** because oxygen from the air is needed for it to work.

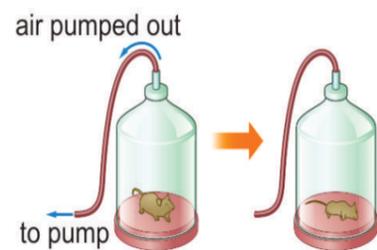
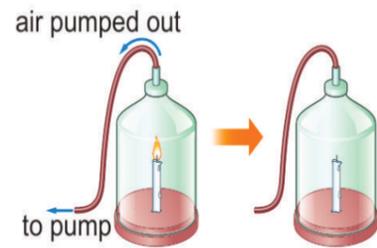
Here is the word equation for aerobic respiration:



- Energy is released in the reaction.
- The **mitochondria**, found in the cell cytoplasm, are where respiration happens.

Discovering oxygen

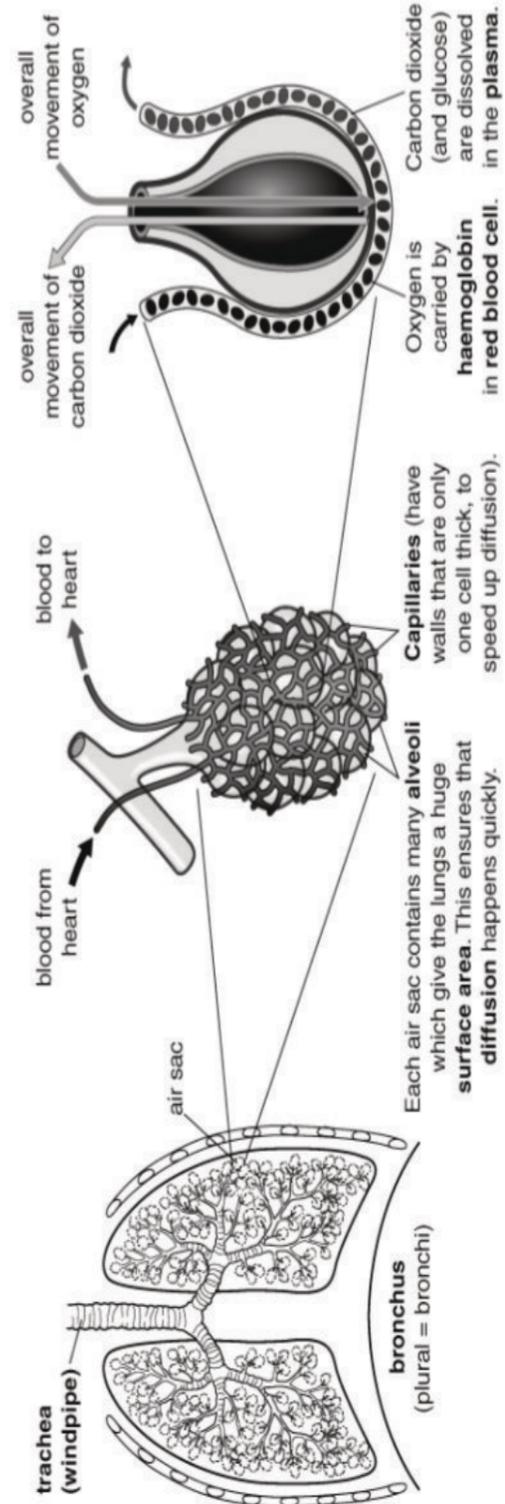
- In 1660 Robert Boyle, placed a burning candle in a jar and he sucked out the air, the diagram show the results.
- The experiment had discovered oxygen, which is 21% of air



C | Boyle's experiment

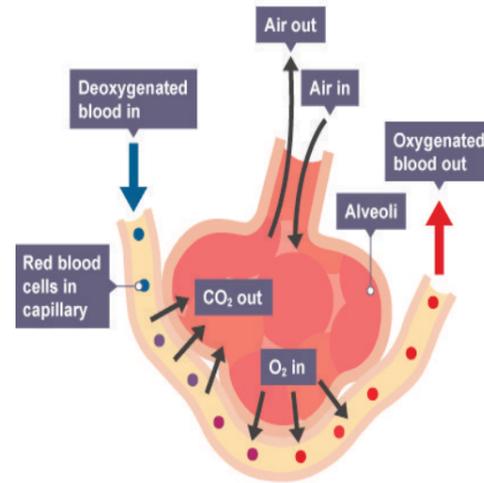
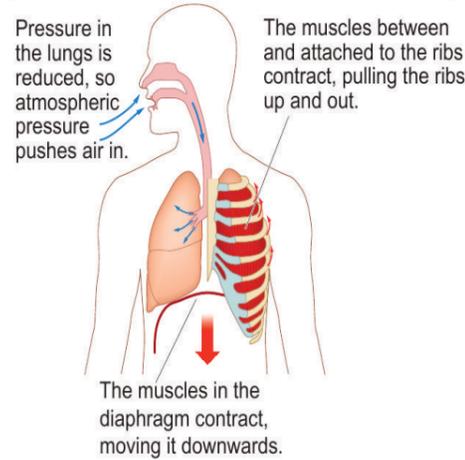
2 | GAS EXCHANGE SYSTEM

- The swapping of oxygen and carbon dioxide in the lungs is **called gas exchange**
- The process happens by **diffusion**



3 | GAS EXCHANGE

B | inhalation (breathing in)



Features of the alveoli

The **alveoli** are adapted to make gas exchange in lungs happen easily and efficiently

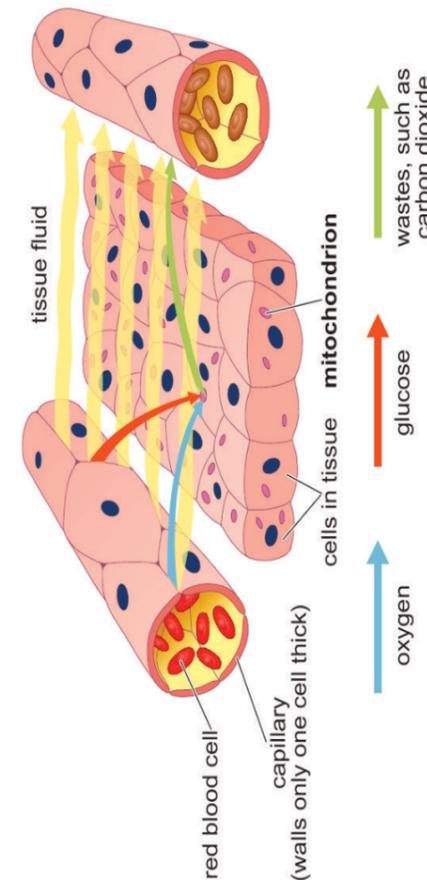
- they give the lungs a really big surface area
- they have moist, thin walls (just one cell thick)
- they have a lot of tiny blood vessels called **capillaries**

The gases move by **diffusion** from where they have a high concentration to where they have a low concentration:

- oxygen diffuses from the air in the alveoli into the blood
- carbon dioxide diffuses from the blood into the air in the alveoli

4 | GETTING OXYGEN

- In the capillaries, oxygen moves from the red blood cells to the plasma.
- The plasma also has glucose dissolved in it.
- The oxygen and glucose are transported to the cells.
- This passes into the tissues to become Tissue fluid.
- Carbon dioxide and other waste products from cells dissolve into the Tissue fluid and return to other capillaries



Your cells will not get enough oxygen if:

- Blood cells narrow
- Poisons
- Poor gas exchange in the lungs

5 | ANAEROBIC RESPIRATION

When your cells do not have enough oxygen then aerobic respiration is replaced with **anaerobic respiration**.

- This does not need oxygen for it to happen.
- The word equation for anaerobic respiration **glucose → lactic acid**
- Anaerobic respiration produces much less energy than aerobic respiration.
- The waste product, **lactic acid**, builds up in the muscles causing pain and tiredness. This leads to cramp.
- Lactic acid is only broken down when you start aerobic respiration again.

Anaerobic respiration happens in microorganisms such as bacteria because they need to release energy from glucose too.

Yeast, which are **unicellular** fungi, can carry out an anaerobic process called **fermentation**.

the word equation for fermentation:



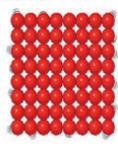
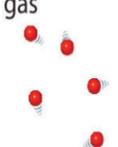
- The ethanol (alcohol) is useful for brewers and wine-makers.
- the carbon dioxide is useful to bakers because it helps their bread rise.

Science Respiration Knowledge Organiser



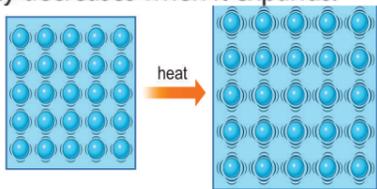
1 THE PARTICLE MODEL

Materials can exist as either solids liquids or gases

State	Forces	Spacing	Movement
solid 	strong	close	vibrate in fixed positions
liquid 	fairly strong	close	move around within the liquid
gas 	weak	far apart	move about fast in all directions

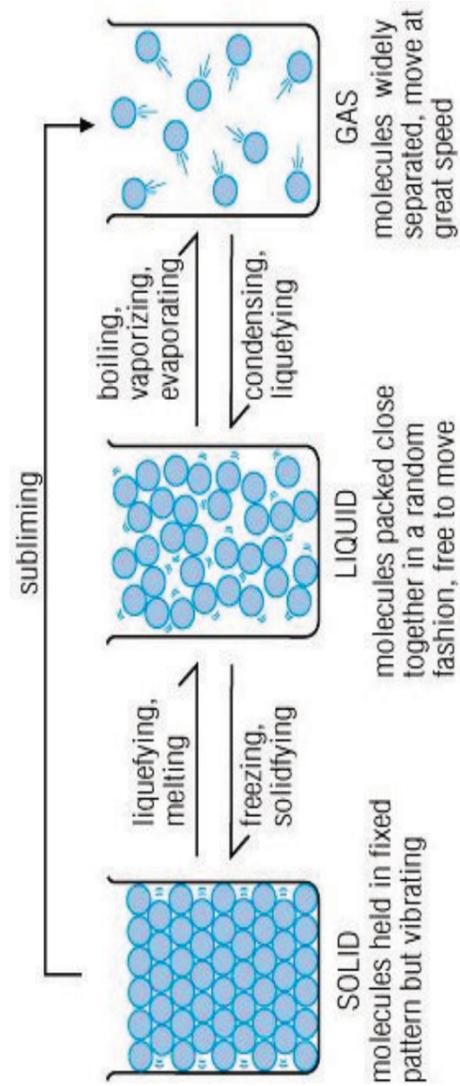
Scientists think the particle model is correct because it explains many observations.

- **Diffusion:** gases or liquids mix without anything moving them because the particles are moving around all the time.
- **Brownian motion:** tiny specks of dust in air or water can be seen jiggling around as they are hit by the moving air or water particles.
- **Expanding and contracting:** materials expand when heated and contract (get smaller) when cooled. This is because the particles in hotter materials move faster and so take up more space.
- **Density changes:** density is the **mass** of a certain **volume** of a material. When a material contracts, its density increases, because the same mass of particles takes up a smaller volume. A material's density decreases when it expands.



C | When a solid is heated the particles vibrate further about their fixed positions. The particles themselves do *not* change size.

2 CHANGING STATE



- **Pure** substances change state at an exact temperature as the substance is made up of the same atoms/ molecules
- **Mixtures** melt over a range of temperatures as the substance is made up of a mixture of atoms/ molecules.

3 PRESSURE IN FLUIDS

Gas **pressure** is caused when gas particles hit the walls of their container.

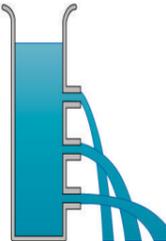
- The force of particles hitting things causes pressure.

How to increase pressure

- Decrease the **volume** of the container. Smaller volume means particles have a greater chance of colliding with the walls of the container meaning greater pressure.
- The higher the **temperature**, the more energy gas particles have the faster the gas particles move, the greater the chance particles have colliding with the walls of the container meaning greater pressure.
- Increase in the number of gas **molecules** in the same volume container, increases the the chance particles have colliding with the walls of the
- **Pressure is measured in pascals (Pa)**

Pressure in a **fluid** increases as:

- weight of fluid increases and as depth increases.
- This diagram shows there is a greater pressure at the bottom.
- There is a greater force coming from the weight of the particles above it.



The further down into the ocean you go the greater the pressure as there are more water particles above you.

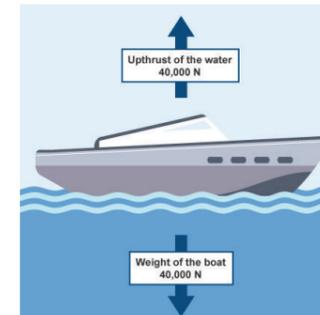
The higher up the mountain we go the less air/gas particles above us and so the less the pressure gets.

4 FLOATING AND SINKING

Up-thrust—a force that pushes things up in liquids and gases.

Weight—the amount of force with which gravity pulls things. It is measured in **Newtons (N)**. Your weight would change if you went into space or to another planet.

- Objects float in water when their weight is balanced by the up-thrust from the water.
- The object will sink until the weight of the water it pushes out of the way is the same as the weight of the object.



The **weight** of the boat is balanced by the **up-thrust** from the water.



- There is always up-thrust on an object in a fluid (even if the up-thrust is not large enough to make the object float).
- We can measure up-thrust using a force meter.



- When a gas is heated it will expand making it less dense.
- Hot air balloons fly because the overall density is less than the air around it.

5 DRAG

Drag—another name for air resistance or water resistance.

- Any object moving through water or air will have resistance force on it that will slow it down.
- Drag is caused by particles in the fluid hitting the moving object, and by the force needed for the object to push the fluid out of the way.
- The particles transfer energy to the object, which is why objects moving through air can get hot.

Reduce drag:

- Make the surface smoother,
- Give the object a smooth shape.
- Reduce the area of the object that faces the oncoming fluid.

Reducing air resistance

We can design the shape of an object, for example a car, so that it will pass through the air with little air resistance. This is called **streamlining**.



Science Fluids

Knowledge Organiser



Passover: Introduction

Passover (Pesach in Hebrew) is one of the most important festivals in the Jewish year.

At this time Jewish people remember how the children of Israel left slavery behind them when they were led out of Egypt by **Moses** over 3000 years ago. The story can be found in the Book of Exodus, Chapter 12.

The story of the Passover

Moses went to see Pharaoh many times. Each time Pharaoh refused to release the Israelites. Moses warned Pharaoh that God would send terrible plagues on Egypt if Pharaoh did not let them go. The ten plagues were: blood, frogs, gnats, flies, blight of the livestock, boils, hail, locusts, darkness and the death of the first born

The final plague was the death of the first born. God told Moses that the Israelites should mark their doorposts with lamb's blood so that God could 'pass over' their houses and spare them from this plague. This is why the festival is called Passover. Eventually Pharaoh gave in and told Moses and the Israelites to go at once. They left in such a rush that their bread did not have time to rise. This is why, during Passover, Jewish people eat unleavened bread called **Matzah**. It looks a bit like crisp bread.

Key Vocabulary	Definition
BAR MITZVAH	The inií aÍ on ceremony of a Jewish boy who has reached the age of 13 and is regarded as ready to observe religious precepts and eligible to take part in public worship.
KOSHER	Food, or premises in which food is sold, cooked, or eaten satisfying the requirements of Jewish law.
MENORAH	A sacred candelabrum with seven branches used in the ancient temple in Jerusalem.
SYNAGOGUE	A building in which Jews meet for religious worship or instruction.
TORAH	The law of God as revealed to Moses and recorded in the first five books of the Hebrew scriptures (the Pentateuch).
BRIT MILAH	A Jewish religious male circumcision ceremony performed by a mohel on the eighth day of the infant's life.
MEZUZAH	A parchment inscribed with religious texts and attached in a case to the doorpost of a Jewish house as a sign of faith.
SHABBAT	The Sabbath.
BAT MITZVAH	A religious inií aÍ on ceremony for a Jewish girl aged twelve years and one day, regarded as the age of religious maturity.
RABBI	A Jewish scholar or teacher, especially one who studies or teaches Jewish law.



RE: Judaism Knowledge Organiser

Judaism.

- **Judaism** has about 13 million followers throughout the world, mostly in USA and Israel. Approximately 270,100 people in the UK said that their religious identity was Jewish (2011 census).
- Judaism originated in the Middle East over 3500 years ago.
- **Moses** was the main founder of Judaism, but Jews can trace their history back as far as Abraham.
- 6 million Jews were murdered in the Holocaust in an attempt to wipe out Judaism.

Beliefs

- Jews believe that there is only one God (monotheism).
- Jews believe they have a **covenant** with God. In exchange for all the good that God has done for them, Jewish people keep God's laws and try to bring holiness into every aspect of their lives.
- Judaism is a faith of action and Jews believe people should be judged not so much on what they believe as on the way they live their faith - by how much they contribute to the overall holiness of the world.
- **Holy Books**
- The most holy Jewish book is the **Torah** (the first five books of the Hebrew Bible) which was revealed by God to **Moses** on Mount Sinai over 3,000 years ago.
- The Torah, together with the Talmud (commentary on the Torah), give the Jewish people rules for everyday life. Observing these rules is central to the Jewish religion.

Worship

- Jews worship in a **synagogue**.
- A Jewish Religious leader is called a **Rabbi** ('teacher')

Shabbat (The Sabbath)

- The family and community are very important within Jewish life.
- The most important day of the week is Shabbat (the Sabbath). It is the day on which Jews remember the seventh day of creation on which God rested. On Shabbat Jews stop working and make time for God and family life.
- Shabbat starts on Friday evening and ends at sunset on Saturday.
- Shabbat begins with the family sharing a meal.
- During Shabbat, services are held at the synagogue, often led by a Rabbi.



¿Adónde fuiste?

el año pasado
Fui a ...
Alemania
Argentina
Cuba
Escocia
España
Francia
Gales
Grecia
India
Inglaterra
Irlanda
Italia
México
Pakistán
Portugal
República Dominicana

Where did you go (to)?

last year
I went to ...
Germany
Argentina
Cuba
Scotland
Spain
France
Wales
Greece
India
England
Ireland
Italy
Mexico
Pakistan
Portugal
the Dominican Republic

¿Cómo fuiste?

How did you get there?

Fui en ...



coche- car



avión - plane



tren - train



autocar - coach

En tren by train
En avión by plane
En barco by boat
En autocar by coach
En bicicleta by bicycle
En coche by car
A pie on foot
En moto by motorbike
En autobús by bus
En taxi by taxi
En tranvía by tram
En aerodeslizador by hovercraft
En helicóptero by helicopter

¿Con quién fuiste?

Who with?

Fui con ...



mis padres- my parents



mi familia - my family



mis amigos/as
my friends

Fui para .../ I went for....

1 week
una semana

1 weekend
un fin de semana

10 days
diez días

1 month
un mes

2 weeks
quince días

¿Cómo fue?

Fue ...

estupendo



genial



guay



aburrido



horrible



un desastre



¿Adónde fuiste de vacaciones?

Where did you go on holiday?

Fui la costa / la ciudad / la sierra.....

¿Cómo fuiste?

How did you travel?

Fui en coche / avión / autocar....

¿Con quién fuiste?

Who did you go with?

Fui con mi familia / mis padres / mis amigos....

¿Cómo fue?

What was it like?

Fue estupendo / genial / guay / aburrido / horrible / un desastre

Year 8 – Design and Technology

Knowledge Organiser

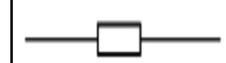
Key Words

Understand and be able to spell the words below.

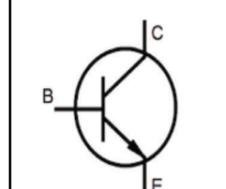
- Thermoplastic
- Thermosetting Plastics
- Polymer
- Finite
- Sustainable
- Biodegradable
- 3D Printing
- Safety
- Computer Numerically Controlled (CNC)
- Computer Aided Design (CAD)
- Computer Aided Manufacture (CAM)
- Sketch
- Isometric
- Engineering Drawing
- Render
- Dimension
- Specification
- Design
- Revolve
- Extrude
- Assemble
- Deform
- Chamfer
- Accuracy
- Modify
- Evaluate



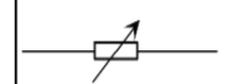
Remember the Safety Rules: Tie back long hair to prevent entanglement. Wear an apron to protect your clothing.
Roll up long sleeves to prevent entanglement.
Stack Chairs to prevent tripping. Wear Goggles on Machines to protect your eyes.
One at a time on machines.



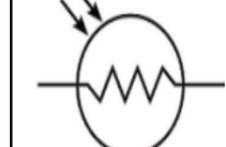
Resistors are used to reduce current flow



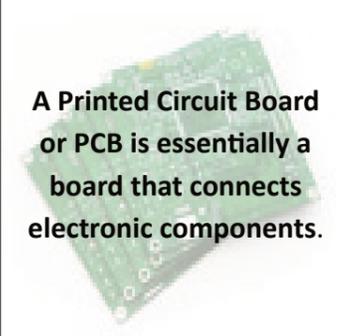
A Transistor works either as an amplifier or a switch



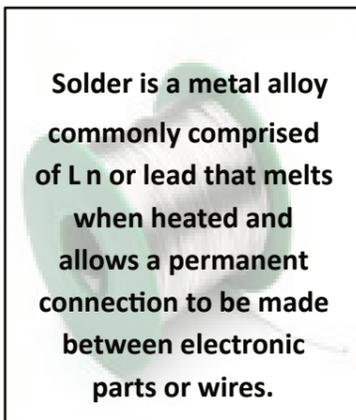
A light-emitting diode (LED) is a special kind of diode that glows when electricity passes through it.



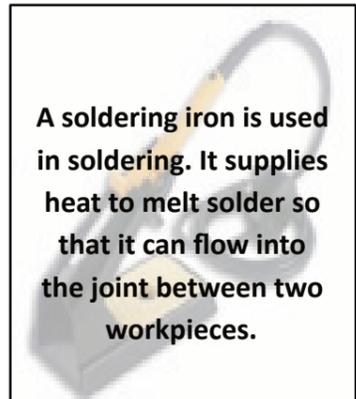
An LDR has a (variable) resistance that changes with the light intensity that falls upon it.



A Printed Circuit Board or PCB is essentially a board that connects electronic components.

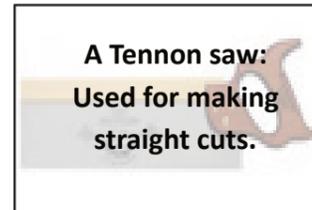
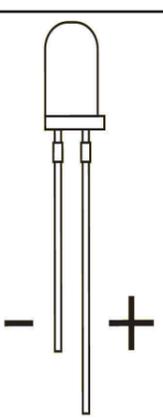


Solder is a metal alloy commonly comprised of Sn or lead that melts when heated and allows a permanent connection to be made between electronic parts or wires.

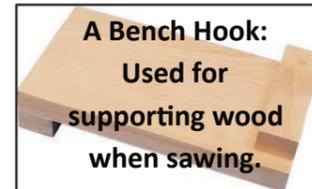


A soldering iron is used in soldering. It supplies heat to melt solder so that it can flow into the joint between two workpieces.

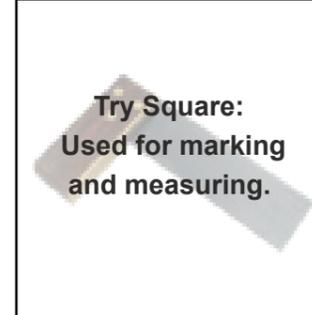
A polarised component can only be connected to a circuit in one direction. A LED is a polarised component. The positive side is called the anode, and the negative one is called the cathode.



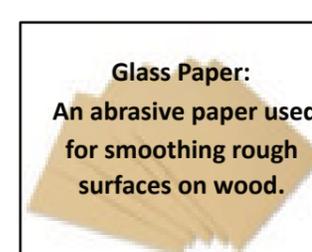
A Tennon saw: Used for making straight cuts.



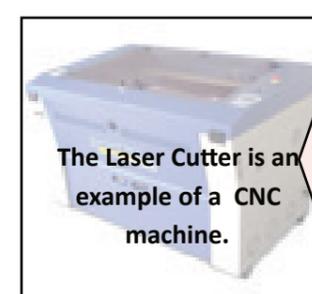
A Bench Hook: Used for supporting wood when sawing.



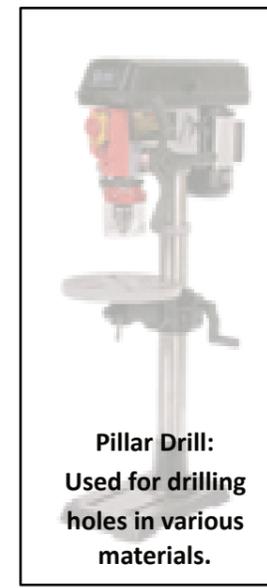
Try Square: Used for marking and measuring.



Glass Paper: An abrasive paper used for smoothing rough surfaces on wood.



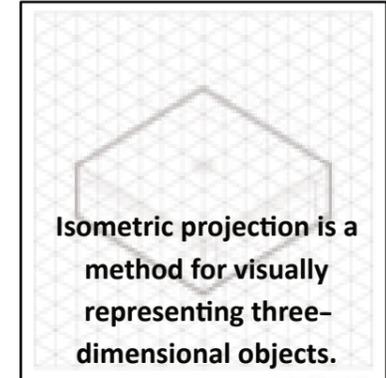
The Laser Cutter is an example of a CNC machine.



Pillar Drill: Used for drilling holes in various materials.



Band Sander: Used for sanding wood.



Isometric projection is a method for visually representing three-dimensional objects.

Computer Aided Design (CAD) is the process of using specialist software to create designs for new products or components.



Red lines or fill areas engrave.

Black lines or fill areas cut.

Computer Aided Manufacture (CAM) uses saved CAD files to make new products or components as prototypes through the use of Computer Numerically Control (CNC) machinery.

Finish: Complete the manufacture of a product by giving it an attractive or protective surface appearance.

Softwood come from coniferous trees which are evergreen, needle-leaved, cone-bearing trees. Examples include pine and spruce.

Hardwoods come from broad-leaved, deciduous trees which tend to lose their leaves in autumn/winter. Examples include, oak and beech.



Year 8 – Design and Technology - CAD

A **design specification** is a document that details the specific requirements of the product to ensure that it is suitable/fit for purpose.

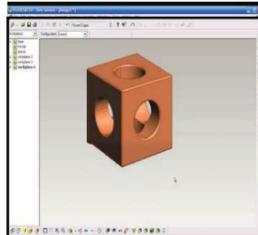
Knowledge Organiser



Key Words

Understand and be able to spell the words below:

- Thermoplastic
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- 3D Printing
- Safety
- Computer Numerically Controlled (CNC)
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Computer Aided Design (CAD) is the process of using specialist software to create designs for new products or components.



Computer Aided Manufacture (CAM) uses saved CAD files to make new products or components as prototypes through the use of Computer Numerically Control (CNC) machinery.

3D Printing

The action or process of making a physical object from a three-dimensional digital model, by laying down many thin layers of a material in succession.

3D printing is used in manufacturing, medicine, architecture, art and design.

Understand and be able to explain the advantages of disadvantages of using CAD/CAM.

CAD Advantages. Can be more accurate than hand-drawn designs - it reduces human error. You can save and edit ideas, which makes it easier and cheaper to modify your design as you go along. You can modify existing ideas, which saves time.

CAM Advantages. Is faster because machining speeds are higher. greater accuracy. greater consistency: every finished product is the same.

Disadvantages of CAD/CAM

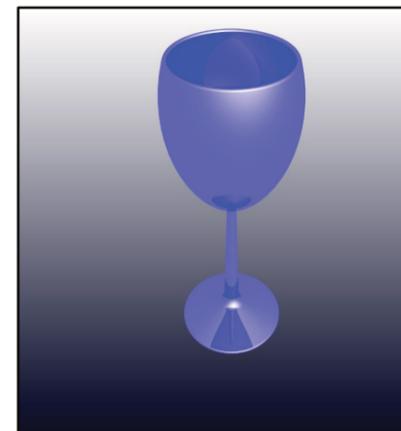
The software/equipment itself is expensive so initial costs are high. Need to be trained how to use the software and machinery.



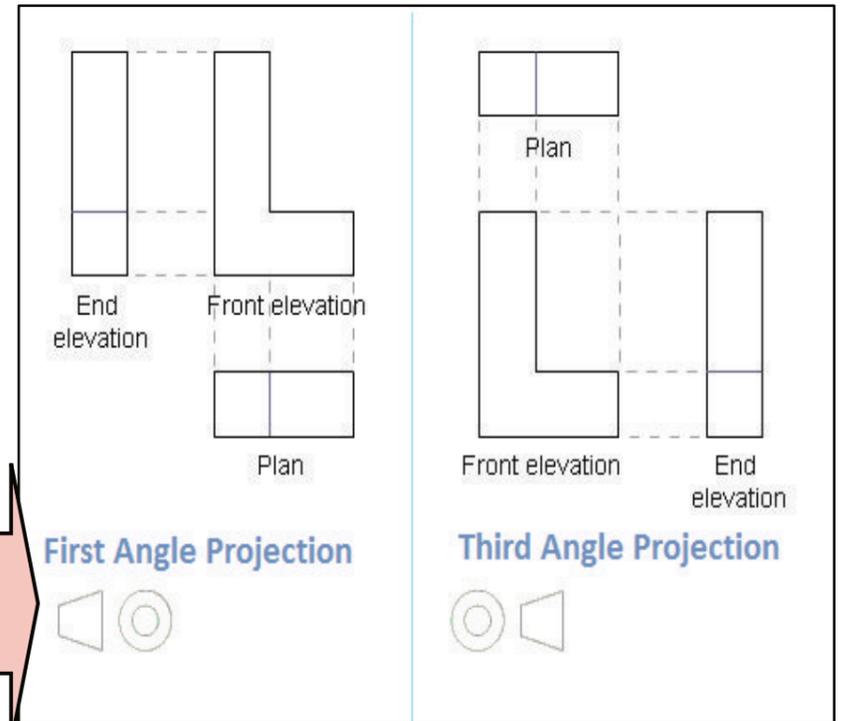
Remember the Pro Desktop icons and drawing tools. Remember to select face, go to work plane and select new sketch when you want to add or remove material to/from your design.

Projection	Symbol
First angle	
Third angle	

An engineering drawing is a type of technical drawing used to define the requirements for engineering products or components. Typically, the purpose of an engineering drawing is to clearly and accurately capture all geometric features of a product or component so that a manufacturer or engineer can produce the required item. It may also describe the process of making the item.

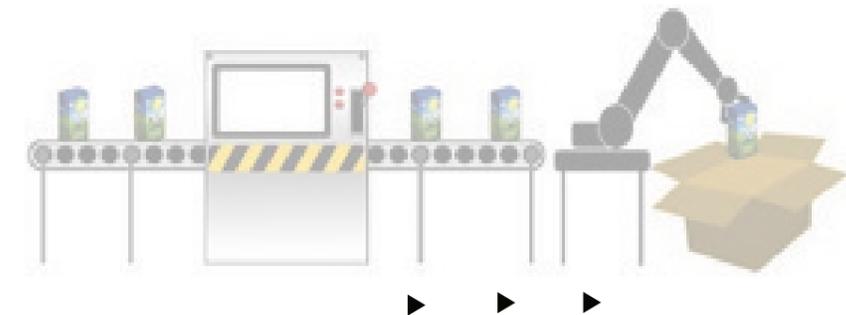
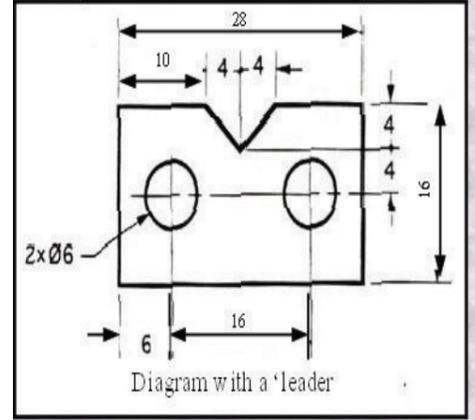


Rendering means the process of adding colour, shading, and texturing to an image. It is used in CAD to make a drawing look realistic.



STL (an abbreviation of "stereolithography") is a file format that allows a CAD drawing to be saved and manufactured using CAM or 3D Printing.

The purpose of dimensioning is to provide a clear and complete description of an object. A complete set of dimensions will permit only one interpretation needed to construct the part.



Year 8 – Design and Technology - Food Knowledge Organiser



Key Words

Understand and be able to spell the words below:

Nutrition
Healthy Eating
Eatwell Guide
Balanced Diet
Cooking
Baking
Chopping
Slicing
Health and Safety
Food Hygiene
Oven
Hob
Designing
Evaluate
Sensory
Analysis
Seasonality
Ingredients
Vegetables
Savory
Food Provenance
Portion Size
Convenience
Foods
Vitamins
Minerals
Technique

Vitamins & Minerals

Vitamins and minerals are considered to be **Essential nutrients**. They perform hundreds of roles in the body. They strengthen bones, heal wounds, and boost the immune system. They also convert food into energy, and repair cellular damage.

Vitamin A: Good eyesight, growth and healthy skin tissue.

Sources: Cheese, carrots, Eggs, fish, sweet potatoes

B Vitamins: B1 release of energy, B2 Tissue repair, B3 Energy release, B9 Baby growth during pregnancy.

Sources: Meat, Fish, Whole grain bread, nuts and pluses

Vitamin C: Protects from infection, heals cuts and helps absorb Calcium and iron.

Sources: Kale, broccoli, citrus fruits, peppers and red berries

Vitamin D: Helps absorb calcium for strong bones and teeth.

Sources: Sunlight, liver, eggs and salmon.

Calcium: Helps form strong bones and teeth

Sources: Dairy foods, kale, nuts and sardines (boney fish)

Iron: Needed to form red blood cells and carry oxygen around the body

Sources: Green vegetables, Nuts, pluses and red meat.

Cooking Techniques:

Rough Puff Pastry



Combining Flavours.



Shaping



Rubbing-in



All-In-One



Eat at least 5 portion of a variety of fruit and vegetables a day

Base meals on potatoes, bread, rice, pasta or other starchy carbohydrates

The Eatwell Guide

The Eatwell plate highlights the different types of food that make up our diet.

Shaping.



Eat some beans, pulses, fish, eggs, meat and other protein



Have some dairy or dairy alternatives (such as soya drinks and yoghurts)

Choose unsaturated oils and spreads, and eat in small amounts

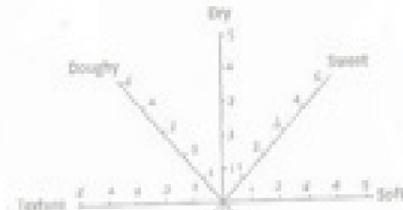


Health and Safety

- Wear a clean apron
- Wash your hands
- Tie back long hair
- Keep food preparation surfaces clean
- Remove nail varnish
- Store food appropriately.
- Do not run
- Wipe up food spills immediately.
- Handle knives and other sharp equipment with care.
- Turn handles of saucepans away from the front of the stove when cooking.
- Wash kitchen and eating utensils after use in hot soapy water.
- Dry equipment properly
- Put away equipment
- Use oven gloves when removing items from the oven



Star Profiling



Sensory Analysis

The scientific way of analysing and measuring human responses to food and drink.

PREVENT CROSS CONTAMINATION
USE CORRECT COLOUR CODED CHOPPING BOARDS & KNIVES

- RAW MEAT
- RAW FISH
- COOKED MEATS
- SALADS & FRUITS
- VEGETABLES
- DAIRY PRODUCTS



Year 8 Art & Design - Knowledge Organiser

A: Key Skills:

- 1: Colour theory
- 2: Technical drawing techniques
- 3: Observation skills
- 4: Colour blending techniques

B: Expressing an opinion: Sentence starters

- I feel/believe that
- In my opinion
- It seems to that
- Based on my experience

1: POP ART:

Pop Art is a visual art movement that emerged in the mid 1950s in Britain, and in the late 1960s in America.

Pop Art is inspired by Mass Culture, such as Advertising, Comic Books, and Everyday Objects.

Pop Art makes use of Minimal Clear images and Bold colours, often with a Thick Black Outline

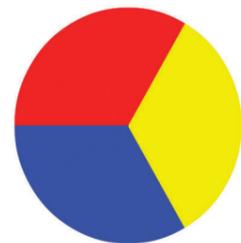
Roy Lichtenstein

Roy Fox Lichtenstein was an American pop artist. During the 1960s, along with Andy Warhol, Jasper Johns, and James Rosenquist among others, he became a leading figure in the new art movement.



Key Words

Composition, Vibrant Refine, Primary, Relevant View, Secondary, Story, Perspective, Comic, Detail, Complementary, Colour, Characteristics,



Primary Colours



Secondary Colours



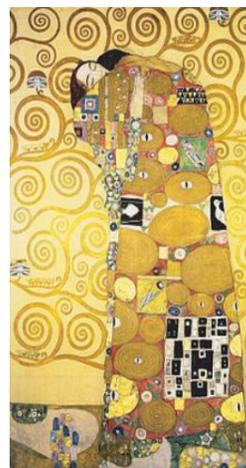
Tertiary Colours

2: GUSTAV KLIMT: Master of shapes & pattern

- klimts work is distinguished by the **elegant gold decoration.**
- He uses **strong bold** colours, and creates rich **textures.**
- His **style** is often described as **eccentric** which is **individual** and unforgeNable.
- He often painted many **delicate** detailed portraits.
- His style was simplified and **decorative** with **natural patterns.**



Warm colour palette



Key Words

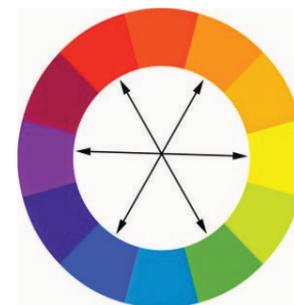
Technique Application Nature Rich Detail Eccentric Warm Shapes Elegant Expressive Pattern

3: HENRI MATISSE:

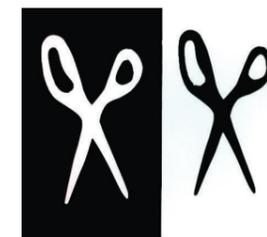
MaTsse was a French artist who created vibrant still life painting. They consisted of pattern and solo colours, with every area of the painting full of imagery and decoration.

In his later years, MaTsse's eye sight started to fail, so he began to create paper cut outs. He produced images using scissors gliding through brightly coloured card acting as a paint brush. The use of complimentary colours were important to his work, as were overlaps.

MaTsse used every piece of paper creating art from both the positive and negative.



Complementary colour palette: Colours opposite each other

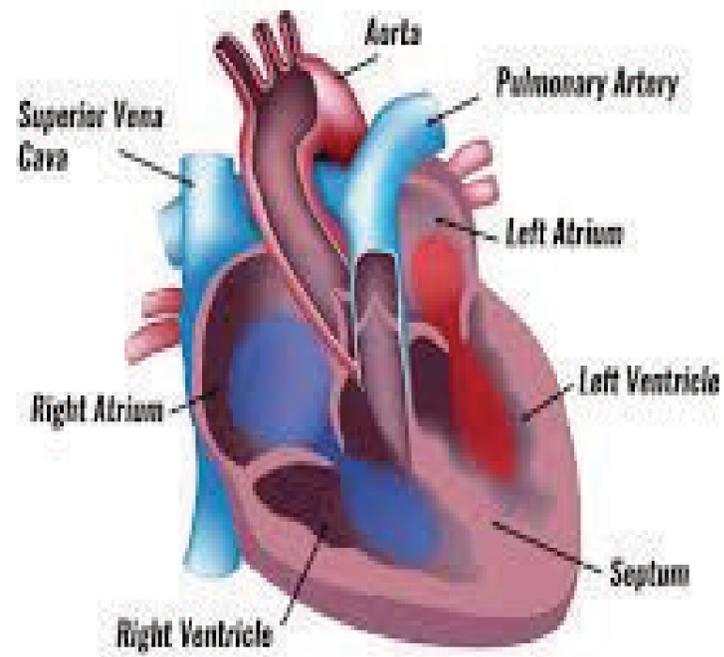


Positive & Negative space

Key Words

Positive Negative Overlap Complementary Vibrant Cutout Space Expression

PE- Knowledge Organiser



The Cardiovascular System

When you start to exercise different things happen to the cardiovascular system. These include:

1. The heart rate increases.
2. The arteries supplying the muscles dilate {enlarge}.
3. Blood is pumped more quickly around the body
4. Adrenaline is released into the bloodstream

Some of the main functions of the Cardiovascular System are:

1. Regulate body temperature.
2. Help clot the blood.
3. Transport oxygen, carbon dioxide and nutrients.

The heart is a very important muscle in the cardiovascular system. The heart acts as a pump that moves the blood around the body. It has four chambers, four valves and walls of thick muscle.

Blood vessels are tubes which transport blood around the body and vary in thickness. They help transport nutrients around the body so the body can function correctly.

The **blood** is made up of electrolytes, plasma and platelets. It transports oxygen and food around the body and removes waste.

Blood pressure is the force exerted by circulating blood on the blood vessels' walls.

When you exercise both the **systolic** and **diastolic** blood pressure immediately increases.

Veins have a thin outer wall and help in transporting deoxygenated blood back to the heart.

Arteries have a thick outer wall and carry oxygenated blood.

Capillaries have a narrow tube and are one cell thick.

Haemoglobin gives **red blood cells** their colour. Oxygen is attracted to the haemoglobin and is then transported around the body.

White blood cells are also known as leukocytes and defend the body from illnesses. They produce antibodies to fight bacteria.

Platelets are produced in the bone marrow and produce a substance called thrombokinase which helps the blood to clot. This is vital in keeping the body safe and to help it to heal.

Plasma is 90% water and is important in maintaining circulation between cells and tissues.

The oxygenation process is as follows:

- deoxygenated blood is taken to the right atrium by the **vena cava**
- blood passes from the **right atrium** to the **right ventricle**
- the **pulmonary artery** then takes blood to the lungs to pick up oxygen
- **oxygenated blood** goes from the lungs to the **left atrium** in the heart
- blood then passes into the left ventricle, then the aorta to be sent around the body

KS3 MUSIC KNOWLEDGE ORGANISER

Treble Clef

E F G A B C D E F

E G B D F

F A C E

Musical Elements

Timbre	Sound quality	
Pitch	High or low sounds	
Texture	How many sounds?	
Tempo	Fast or slow?	
Duration	Long or short?	
Structure	The musical plan	
Dynamics	Loud or quiet?	

D \flat	E \flat	G \flat	A \flat	B \flat	D \flat	E \flat	G \flat	D \flat	E \flat	G \flat	
C \sharp	D \sharp	F \sharp	G \sharp	A \sharp	C \sharp	D \sharp	F \sharp	G \sharp	A \sharp	F \sharp	
C	D	E	F	G	A	B	C	D	E	F	G



naturalistic musical

Style

physical theatre



KS3 Keywords

Spellings

verbal feedback laughter

Audience

facial expressions

who was your target audience?

hot seating role on the wall

Rehearsal techniques

freeze frames thought tracking



lights

set sound

Technical elements

make-up costume

How did it fit with the



Computer Science Programming

Programming is writing computer code to create a program, in order to solve a problem. Programs consist of a series of instructions to tell a computer exactly what to do and how to do it.

Algorithms are a set of instructions that describes how to get something done. It is crucial that the steps in an algorithm are sequenced and performed in the right order – otherwise the algorithm will not work correctly. Algorithms are written using statements and expressions. There are three basic building blocks (constructs) to use when designing algorithms: sequencing, selection and iteration. We create programs to implement algorithms. Algorithms consist of steps but programs consist of statements.

Keywords	
Algorithm	A step-by-step procedure for achieving a task; an algorithm is used to solve a problem by breaking it down into stages
Programming Language	A special language programmers use to develop software programs, scripts, or other sets of instructions for computers to execute
Code	A set of written instructions in a particular programming language
Event	An event triggers specific lines of code to run. E.g. when sprite touched Run "add a point".
Control Flow	An element of code that affects the order in which instructions are executed when a program runs e.g. an IF statement
Conditions	A condition is something that must be true in order for something to happen. E.g. if sprite touched = True then add a point.

Sequencing

Sequencing is the specific order in which instructions are performed in an algorithm

Algorithms consist of instructions that are carried out (or performed) one after another.



Variable

Computer programs use variables to store information

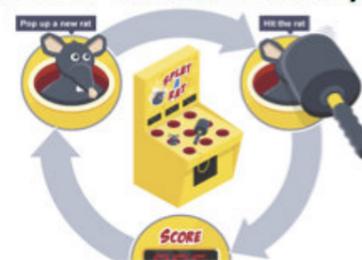
Variables could be used to store the score in a game, the number of cars in a car park or the cost of items on a till. They work in a similar way to algebra, where a letter in your code can stand for a number.



Iteration

Iteration is the process of repeating steps

Iteration allows us to simplify our algorithm by stating that we will repeat certain steps until told otherwise. This makes designing algorithms quicker and simpler because they don't have to include lots of unnecessary steps



Selection

Selection is a decision or question

At some point, a program may need to ask a question because it has reached a step where one or more options are available. Depending on the answer given, the program will follow a certain step and ignore the others.

