



£2

KNOWLEDGE ORGANISER

NAME & FORM

YEAR 8
SUMMER TERM

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English Knowledge Organiser: Summer 1

Plot Summary:



What do we need to include in a successful paragraph?

1. A **QUOTE**, or multiple quotes, that prove whatever point or argument that you are making about the play
2. The name of the **TECHNIQUE** or techniques that Shakespeare is using within your chosen quotes
3. **ANALYSIS** of how your quotes prove your point, or the effect of their techniques on an Elizabethan audience.

Key Words:

Verona: The setting of Romeo and Juliet. It is the second-largest city in Northern Italy, and so old that its origins remain a mystery!

Shakespeare: William Shakespeare wrote Romeo and Juliet (along with many other famous plays) and lived from 1564-1616. Shakespeare is also famous for his poetry: he is still known as England's national poet!

Elizabethan: The era (or period in history) when Elizabeth I was Queen of Great Britain is often called the "Elizabethan era". It lasted from 1558-1603, and historians sometimes call it the "golden age" of English music and literature!

Stereotype: an oversimplified idea that people can have about what someone or something is like. For example: Romeo calls Juliet "bright angel", which links with the sadly common stereotype of Shakespeare's time that women were only useful as something to be beautiful and be worshipped by men!

Expectation: a strong belief that someone or something will happen or be proven correct. Stereotypes are based on expectations of people or things.

Feud: a long and bitter argument or disagreement. Romeo and Juliet's love for one another is so dangerous because their powerful families are locked in a violent and hateful feud with one another!

Montague: the family of Romeo. Shakespeare based them on the rich and powerful Montecchi family of 13th Century Italy. The Montecchi family actually lived in Verona, where they fought with the Capuleti family for control and attention from Italy's king!

Capulet: the family of Juliet. Shakespeare based them on the rich and powerful Capuleti family of 13th Century Italy.

Fate: the idea that things are bound to happen in a particular way that people cannot change or control. Romeo and Juliet makes clear from the very beginning that the fate of the two characters is tragedy. Many of the events or speeches in the play hint at this fate!

Y8 Romeo & Juliet Knowledge Organiser

Plot Summary:

1. Two wealthy families, the Montagues and the Capulets, have another brawl in the city of Verona. The Prince declares that the next person to break the peace will be killed.
2. Romeo & his friends gate-crash a Capulet party and Romeo meets Juliet Capulet. He falls in love with her instantly. They are shocked to discover they are sworn enemies due to their feuding families. Friar Laurence marries Romeo and Juliet in secret.
3. Romeo goes to celebrate his marriage with his friends, Mercutio and Benvolio, but gets into a fight with Juliet's cousin, Tybalt. Tybalt kills Mercutio and Romeo avenges his death by killing Tybalt. The Prince banishes Romeo because he killed Tybalt.
4. Capulet, Juliet's father, decides she should marry Paris. Juliet refuses and goes to Friar Laurence where they come up with a plan for Romeo and Juliet to be together.
5. Juliet fakes her death and lies in a tomb waiting for Romeo to come so they can run away together. Romeo doesn't receive the message about the plan, so thinks Juliet has actually died. He goes to Verona and sees Juliet in her tomb, 'dead'.
6. Romeo drinks poison so he can be with Juliet in death. She wakes up to discover Romeo is dead. Juliet kills herself with his dagger.
7. The Capulet and Montague families vow never to argue again.

Key Characters:

Romeo Montague- Son of Lord & Lady Montague.
Juliet Capulet- Daughter of Lord & Lady Capulet.
Nurse- Juliet's nanny/maid and primary carer.
Friar Laurence- Priest & friend of the Montagues and Capulets. Marries R&J in secret.
Tybalt- Juliet's violent and aggressive cousin.
Mercutio – Romeo's best friend.
Paris-The man Lord Capulet wants Juliet to marry.
Prince Escalus – the Prince of Verona.

Social & Historical Context:

Marriage:

In Elizabethan times, people got married much earlier than they do today. It would be common practice to get married at 13 years of age. Normally, parents chose their child's partner and this would be based on wealth, potential titles and family ties.

Romeo and Juliet both decide who they are going to marry - this would have been *highly disrespectful* to their families, particularly as they both decided to marry their family's sworn enemy.

Family:

The father was the head of the household in this *patriarchal society*. Women had no rights or authority in law: they could not own property or money but could influence their husbands. In high society, children were often raised by a 'wet nurse' and did not have a strong bond with their parents.

Where do we see these ideas in the play?

Key Themes:



QTA sentence structures:

Shakespeare has created the character of ____ in order to...

Shakespeare presents...

This can clearly be seen when...

A quote to support this is...

This suggests to the audience...

Alternatively, it could be argued that Shakespeare was trying to...

In particular, Shakespeare's use of (method/technique) implies...

Shakespeare's audience would have...

Shakespeare thought/felt that...

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English Knowledge Organiser – SUM1

Brief Summary of the Texts:

Presents From My Aunts in Pakistan by Moniza Alvi

This poem describes the inner conflict experienced by the speaker who is trapped between two worlds – the one she has grown up in and the one she and her family originate from.

Search For My Tongue by Sujata Bhatt

This poem shows how challenging it is for the speaker to have to speak only in a foreign language, and suggests that in losing her “mother tongue,” she would lose part of herself.

Bend it Like Beckham by Narinda Dhami

This book was based on the original screenplay, also written by Dhami, which tells the story of a girl torn between her strict, traditional Indian upbringing and her love of football and aspirations of playing professionally.

Belong by Lemn Sissay

Sissay’s poem looks at what it means to ‘belong’ in or to a place and how that sense of belonging is created and helps to shape our thoughts and identity.

This is the Place by Tony Walsh

This poem grew in popularity after the Manchester Arena bombing. It was written to help us appreciate our Mancunian heritage and inspire us to think about what it means to live where we do.

The Right Word by Imtiaz Dharker

The speaker in Dharker’s poem feels conflicted about how to refer to a visitor she receives at her door. Her poem helps us explore the importance of language and the impact the language we use towards others can have on their own identity.

The Opener by The Courteeners

Liam Fray, The Courteeners’ frontman once described this song as being for anyone who felt “a great affection and connection to the place where you were born and raised.”. This song personifies Fray’s home city of Manchester to show his deep love of it.

Derry Girls by Lisa McGee

This hit comedy television shows helps us explore how our language choice and colloquialisms help to express and shape our identity. It centres around five very different students in a Northern Irish secondary school and allows us a fascinating insight into life in Northern Ireland during the Troubles.

Key Quotes from the Texts

Presents from My Aunt in Pakistan

‘glistening like an orange split open.’ The **verb** in ‘glistening’ could imply that the speaker feels like she is alive whilst in her traditional clothing, or exposed as she feels less confident.

Search for My Tongue

‘Your mother tongue would rot’ The **verb** ‘rot’ makes us think that if it goes unused, the language would die away and no longer have any purpose. It is part of a larger extended metaphor which compares the writer’s ‘mother tongue’ to a plant, rotting and dying through neglect until it blooms back to life.

Bend it Like Beckham

‘What bigger honour is there than respecting your elders, Jesminder?’ This **rhetorical question** very clearly conveys the disapproval of Jess’s mum, highlighting her expectations and her disappointment that she feels as though Jess is failing to conform to these expectations. The use of the **proper noun** when she uses Jess’s full name reminds Jess of her heritage and culture and is used to make her feel guilty for what her family feel is a betrayal of them and her culture.

Belong

‘And sing I belong here, I belong.’ This use of **repetition** at the end of many of the stanzas in Sissay’s poem show his absolute belief and confidence that he is where he should be. It shows what a big part Manchester has played in shaping him as a person. This is then further highlighted by the repeated **pronoun** ‘I’.

Key Quotes from the Texts

This is the Place

‘Because this is the place that’s a part of our **bones**’

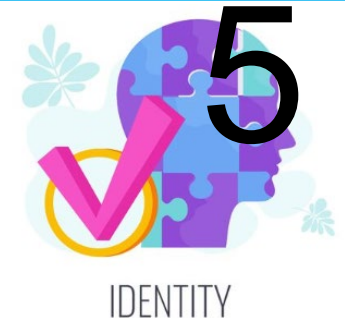
This **metaphor** conveys Walsh’s deep-rooted love of his city and, similarly to Sissay in Belong, shows that he thinks that the city we live in is a big part of our identity and culture. It shows how ingrained it becomes in us.

The Right Word

‘Are words no more than waving, **wavering flags?**’ This **rhetorical question** reminds us of the transience of language, discussing how words can change so quickly and ‘waver’ like flags, however they can be so important in shaping the way others feel/think about themselves.

The Opener

‘My heart is here, here to stay’ The **repetition** of this **metaphor** to finish off the song emphasises that, although Fray may physically be away from his home city, his heart and his love for the city will always be with him. It emphasises the idea that, even if you move away, the city you grew up in has already had a profound impact on shaping your identity and you will never forget it.





English Knowledge Organiser

Key Poetic Techniques:

Rhyme- The ends of the lines have the same sound *e.g. pie and sky.*

Repetition – A word or phrase is used more than once. *E.g. faster and faster, the cheetah ran...*

Onomatopoeia- When a word sounds as it is *e.g. boom.*

Metaphor- Two things are compared by saying one thing is the other *e.g. the sun was a glittering ball in the sky.*

Simile- Comparing something using 'like' or 'as'. *E.g. the sun was like a glittering diamond.*

Personification- When an inanimate object is given human features. *E.g. the tree danced.*

Hyperbole- Exaggeration *e.g. the sun melted my skin.*

Alliteration – when sounds or letters are repeated in succession within a sentence. *E.g. The slithering snake hissed.*

Key Definitions

Identity: the characteristics determining who or what a person or thing is.

Culture: the ideas, customs, and social behaviour of a particular group of people or society.

WAGOLL Paragraph:

Bhatt uses an extended metaphor in 'Search For My Tongue' to highlight the importance of speaking your native language. By comparing language to a growing plant "it grows back", the reader can understand that the more one uses their native language, the more it grows and the more important it becomes. The writer has used the word "back" purposefully as it implies that the native language, once used, can never be forgotten. The metaphor of the plant growing has connotations of new life and the hope that our multi-lingual society can bring. Bhatt clearly wanted to demonstrate that we should appreciate and be grateful for the languages we inherit at birth, and that we should never forget them or take them for granted.

QTA + AO3 Sentence Structures:

An effective way of writing can often be by including the name of the technique in your opening sentence. Alternatively, you can rephrase the question to get you started.

(T) In the poem, one way the poet conveys _____ is through the use of...

OR

(T) The poet uses _____ to present the idea of...

(Q) This is shown in ' ... '

(Q) This is evident in the quote ' ... '

(Q) A quote to show this is '...'

(A) This suggests/this shows...

(A+) It could also suggest that...

(A) The word _____ could highlight...

(A+) Another word that supports this is _____ because...

(A)As a reader I understand...

(AO3) The poet intended to show that...

6



Red and blue = violet



Red and yellow = orange



Blue and yellow = green



TERTIARY colours are made from mixing a primary and a secondary together

e.g red and violet = tertiary red violet

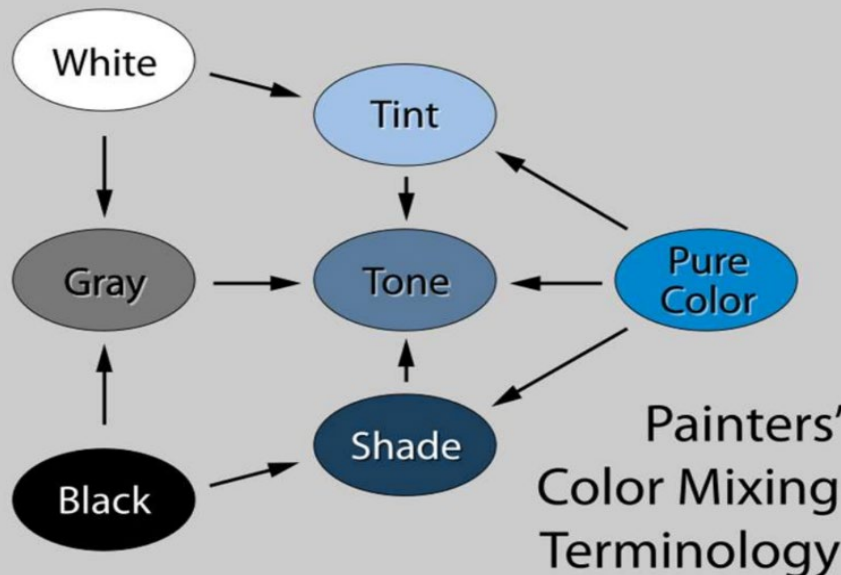


KEY WORDS - test yourself! (definitions on the next page)

Hyper realism- Reflection- Shadow- Highlight- Accuracy- Opaque- Transparent- Shade- Tint- Tone- Primary- Secondary- Tertiary- Proportion

Painting and mixed media

Year 8 Summer term



Watercolour techniques

Sponging



Colour to light gradient



Colour to colour gradient



Flat wash



Wet on wet



1). Outline

2). Pale watercolour wash

3). Layering saturated colour

4). More layers

4). Detailing with coloured pencils

KEY WORDS AND MEANINGS:

Hyper realism	Hyperrealism is a genre of painting and sculpture resembling a high-resolution photograph.
Tertiary	When a primary and secondary colour are mixed, you get a tertiary colour. E.g. turquoise.
Transparent	The quality of being able to see through (or partially see through) one or more layers in an artwork.
Tone (painting)	When you add grey to a colour to cool or darken it down.
Opaque	A paint that is opaque will give a solid colour.
Shade (painting)	When you add black to a colour, making it darker.
Tint (painting)	When white is added to a colour to lighten or brighten.
Form	Form refers to objects that are 3-Dimensional, or have length, width, and height.
Highlight	The lightest part or one of the lightest parts of a painting, drawing, etc.
Shadow	A dark area where light from a light source is blocked by an opaque object.

8

Colour code: BLUE= Tier 3 words

ORANGE= Tier 2 words

Look out for colour coding during lessons!

TOP TIPS FOR LEARNING A SCRIPT

1. Read through the script a line at a time then cover it up and say it out loud
2. Break the script into sections then write each section onto a post it note rearrange them and put them back into the correct order.
3. Rehearse with movement. Add a movement to each section to help you remember.
4. Annotate your script with the vocal and physical skills you want to use so that you don't forget them!



OUR DAY OUT by Willy Russell

ACT/SCENE SUMMARIES

The plot centres on a school trip to *Conwy Castle* in North Wales. Mrs. Kay teaches a class for illiterate children, called the "Progress Class". The whole class - along with Digga and Reilly, the slightly older pupils who used to be in the Progress Class - are taken on a coach trip. The headmaster asks deputy head, Mr Briggs, to go on the trip as an extra member of staff, emphasising his mistrust of the liberal values of Mrs Kay.

On the way, the coach stops at a roadside cafe with a snack shop, where the students take advantage of the storekeepers' confusion to shoplift sweets and snacks, while the teachers are unaware. It makes a second stop at the zoo, where the students enjoy the animals so much that they try to steal most of them. The zoo attendant discovers this just in time before the coach pulls out, and makes them return the animals.


When the coach finally reaches the castle, the students race around exploring the grounds, cliffs and beach. Soon it's time to leave, but one of the best-behaved students, Carol, is missing. A search ensues and Mr. Briggs finally finds Carol at the cliff edge. She is depressed because she doesn't want to return to the bad conditions at home, and becomes so upset that she threatens to jump off. Mr. Briggs shows a more understanding side as he convinces Carol to re-join the rest of the group.

At the suggestion of Mr Briggs, the coach makes one more stop at a fairground where the students have some more fun before returning home. Mr. Briggs joins the students on some of the rides, wears a funny hat, and joins in with the sing-song on the journey home, all of which is photographed by Mrs. Kay. Mr. Briggs offers to develop the photos but he secretly unravels the undeveloped film, exposing and ruining the photos.

THEMES

Social class	Poverty	Conflict	Mortality
Nature vs nurture		Education	Stereotyping
Prejudice		Pride	Relationships

CONTEXT

<p>Playwright</p> 	<p>Willy Russell was born in 1947 into a working-class family near to Liverpool. He left school at 15 without academic qualifications and began work. Dissatisfied with his job, he went to university and then became a teacher at a school in Liverpool.</p> <p>Russell wrote 'Our Day Out' in 1977 which was based on his experience while teaching at Shorefields School in Liverpool.</p>	<p>Genre</p>	<p>COMEDY/ REALISM/ SATIRE: Russell's plays and novels are about ordinary working class people His collection of work is funny and moving with a comic touch</p>
		<p>Socio-historical Contexts</p>	<p>Escalating economic decline in the 1970s meant many had little or no income, which divided the rich and poor. This is social exclusion where people do not have access to adequate health care or education.</p> <p>Margaret Thatcher became the Conservative Prime Minister in 1979. One of Thatcher's central political beliefs was that success came to those who chose to work hard.</p>
		<p>Political context</p>	<p>Russell contradicts this view as he shows that the pupils in the class are already intended for menial, low paid jobs and have effectively been written off by society.</p> <p>Willy Russell would have seen the poverty and lack of aspiration first hand in his home city. Liverpool's famous docks, a traditional source of local employment, were allowed to run down and thousands of households fell into poverty; crime levels increased; housing was allowed to deteriorate and drug use became more common.</p>

MAIN CHARACTERS

Mrs Kay	A kind-hearted and generous teacher of the progress class
Mr Briggs	The deputy-head of the school who believes in very strict discipline
Colin/ Susan	Young teachers who are helping support those on the trip
Carol	A thoughtful student who seems unhappy with her life in Liverpool
Reilley/ Digga	Older students who used to be in the progress class; a bad influence on the others
Lindo	A girl with a bad attitude, she has a crush on Colin and clashes with Mr Briggs
Andrews	A young student with a difficult home life

Vocal Skills (Scan the QR code to find out more about vocal skills)

Pitch
Pace
Tone
Volume
Accent



Physical Skills (Scan the QR code to find out more about physical skills)

Body Language
Gesture
Levels
Facial Expressions
Posture





BLUES

and IMPROVISATION
Year 8 Summer Term

ORIGINS and DEVELOPMENT – African slaves brought their musical traditions with them when they were transported to work in the North American colonies. These Work songs were sung rhythmically in time with the task being done. Their songs were passed on orally (word of mouth) and were never usually written down. They used call and response (phrases from a lead singer were followed by the others). Early styles of Blues were known as country blues and were usually a solo singer accompanied on guitar or piano sometimes with added harmonica or drums. This developed through to BIG BANDS which used trumpets, trombones, saxophones, piano, drum kit, string bass and clarinets.

KEY WORDS – test yourself! (definitions on the next page)

Blues Walking Bass Line String Bass Big Band Saxophone
 Improvisation Introduction (Extended) Chords Melody
 Sequence Lyrics New Orleans Structure 12 Bar Blues

PRACTICAL SKILLS USED IN BLUES MUSIC:

The 12 Bar Blues Chord Sequence

A chord is 3 notes played together at the same time. Blues music only uses 3 chords which are played in this order:

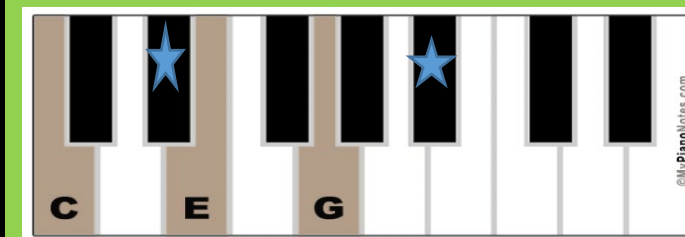
C	C	C	C
F	F	C	C
G	F	C	C



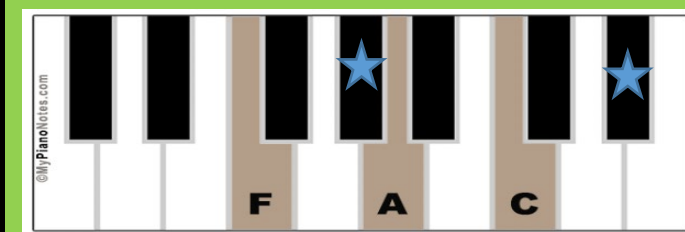
BESSIE SMITH –one of the greatest blues singers of the 20th Century. She had a deep, soulful voice and made her way from poverty to stardom because of her fantastic talent. She was at the height of her success in th 1920s. She sang about her own harsh experiences as a black woman in the deep south of American. She worked with jazz legends such as Louis Armstrong and Benny Goodman

THE CHORDS (ADVANCED IMPROVISATION NOTES ARE STARRED)

CHORD OF C MAJOR:



CHORD OF F MAJOR:



CHORD OF G MAJOR:



KEY WORDS AND MEANINGS (Tier 2 words in **ORANGE**, Tier 3 words in **BLUE**)

Improvisation	To make music up as you go along
Structure (Twelve bar blues)	The way the music is put together. The twelve bar blues has a very specific chord sequence that you will need to learn off by heart
Lyrics	The words to a song
New Orleans	A city in Louisiana, America. It has strong associations with Jazz and Blues music
Introduction	The first section of a piece of music – usually before the voice or solo instrument enters
Extended chords	Chords are usually a collection of THREE notes played together. Extended chords add more notes on top of these e.g. 7ths to give a 'blues' feel
String Bass/ Double Bass	A large string instrument used to play the bass line in Blues and Jazz music
Saxophone	A WOODWIND instrument, comes in a variety of sizes which determines the pitch – soprano (smallest and therefore highest pitch), alto, tenor and baritone (larges and lowest)
Big Band	A collection of instruments (like an orchestra) which includes clarinets, saxophones, trumpets, trombones, piano, drum kit and string bass. Sometimes flutes are added too.
Chord Sequence	Chords played in a specific order e.g. the 12 bar blues chord sequence.



Geography Knowledge Organiser: Topic 5

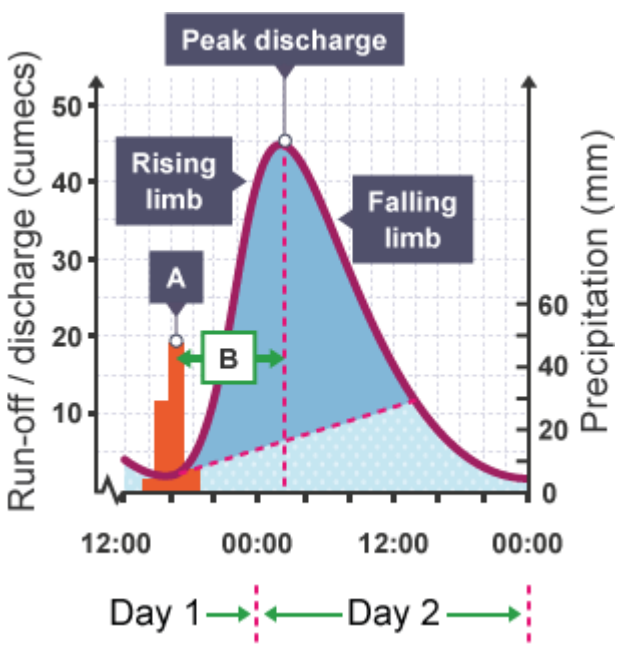
- Flooding



A flood is an overflow of a large amount of water beyond its normal limits, especially over what is normally dry land.

What do Flood Hydrographs tell us?.

- The bar chart shows the amount of rain.
- The line graphs shows the amount of water in the river (its discharge)
- As the amount of water in the river rises due to high rainfall, the line rises. When the rain stops and the level of water in the river goes down, the line falls.



Why do floods happen?

Floods happen where water inundates the land, so there is more water than the land can absorb (or the atmosphere can evaporate) in a given time. This can happen due to human or physical processes:

Human: Building urban areas creates impermeable surfaces that do not absorb water, and drainage systems carry water straight to rivers, causing them to overflow. It also involves removing green areas such as woodland, which would naturally absorb a lot of water.

Physical: Where there are thin layers of soil, or impermeable rocks close to the surface, there is little space for water to be held underground, so it quickly builds up and sits on the surface.



Hard engineering: Dams and Reservoirs



Why is Bangladesh the most flood-prone country in the world? Some Causes of Flooding in Bangladesh

- 1. Monsoon Climate**
Brings very heavy rain and snow
Soils are leached and heavy runoff results in soil erosion
- 2. Spring Snow-Melt**
Results in soil erosion and a rapid increase in River Discharge
- 3. Deforestation in Headwater Areas**
due to increasing population in Nepal & Tibet. Trees cleared for fuel and grazing land. Less Evapotranspiration, more runoff and faster soil erosion. Landslides also occur.
- 4. Rivers Silt-up** due to increased soil erosion. This raises the river bed and reduces the capacity of the channel resulting in increased likelihood of flooding.
- 5. 80% of Bangladesh** lies on a huge floodplain and delta, most of which is only 1m above sea level.
- 6. Much of the Ganges** has been diverted for irrigation purposes, this removes some of the silt and prevents the floodplain further downstream from being built up.
- 7. Cyclones (violent storms)** frequently hit Bangladesh

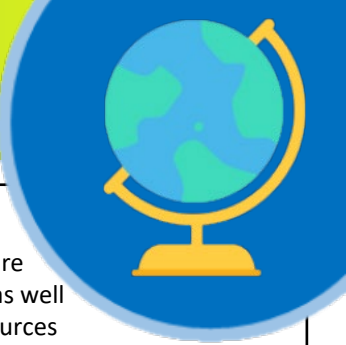
Hard and Soft Engineering

Hard engineering alters the natural processes of a river to prevent floods e.g. building dams – these are huge walls or barriers built across a river to control the flow of water downstream and stop flooding. They are highly effective at stopping flooding, but they are very expensive to build and maintain. They may be used to generate hydro-electric power, and the reservoir that builds up behind the dam can be used as a water supply. However, they cause worse flooding upstream and the limit fresh water downstream, which can disrupt the supply of drinking water.

Soft engineering works with the natural processes of a river e.g. afforestation (planting trees) – Forests are cheap to create and to maintain. They provide habitats for animals and recreational areas for people to enjoy. They slow down and stop some rainwater from getting to the river, but not all of it, so sometimes floods still happen. They take a long time to grow and fully develop.



Geography Knowledge Organiser: Topic 6 – Global Superpowers



.A superpower is a nation which has the ability to project its influence over the world. This means they have a big say in decision making and they are often a global force for change. Examples include USA and the EU.

Who governs the world?

The United Nations is an inter-governmental organisation, which means it is a group made up of leaders from lots of different countries who work together to create better conditions for everyone to live in. 193 countries are members of the UN.

The UN Security Council has the power to put sanctions on a country, which means they are not enabled to trade or sell their goods to other countries. This limits their wealth and power. The UN Security Council can also permit military force against a country that is a threat to peace and fairness.

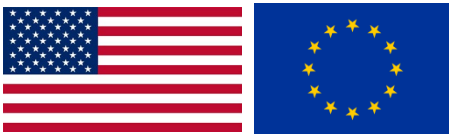
The UN International Court of Justice settles disagreements between member states. It aims to make sure there is political stability, without countries coming into conflict, and to make sure governments are held accountable when they act illegally against their own people by causing them harm.



Who are the global superpowers?

The USA, and the EU are considered to be superpowers. There are also emerging superpowers of Russia, China and India. These countries demonstrate the 'four pillars of superpower status':

- Economic power
- Military power
- Political power
- Cultural power



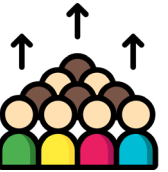
How do human and physical factors create global superpowers?



Physical – Countries that have access to valuable resources, especially fossil fuels such as oil, coal and gas, are likely to be more powerful. This is because every country relies on these resources to power their homes as well as industry. Without them, countries would not be able to function (work). Countries that have these resources can sell them to other countries, making them richer, but also more powerful because countries depend on them for their resources and will not want this trade to stop. In the past, Russia has exerted power over European countries by threatening to cut their gas supply.

A long accessible coastline is also beneficial to make countries powerful as this supports trade, giving them a stronger economy.

Human – If a country has a large population it can make them powerful. The population will largely need to be loyal and hard working to ensure that they are productive and help the country's economy to grow. For example, both China and India have populations over one billion people, so they have a large workforce that are used in factories to produce products that can be sold all over the world to make the country richer. The age structure of India, which has a relatively young population means that most people are of working age. However, China has a large elderly population that will need to be looked after, and this can be expensive.



What impacts do global superpowers have?

Negative: In the past, the UK ruled over other countries by force. They colonised countries by taking power of them and ruling them. They forced people to speak English, took their resources and sold them to make profits, building the wealth of the UK, while depleting the wealth of the countries they were controlling. They also sold their people as slaves. This use of 'hard power' is still used by some countries today when they start wars, or threaten war, when they restrict trade and when they own the debt of other countries, making the country in debt vulnerable.

Positive: Today, the UK aims to use more 'soft power' approaches by encouraging rather than forcing influence over others by:

- Having an attractive culture and lifestyle that others may be influenced by, or even migrate to enjoy.
- Offering political advice to others.
- Having foreign policies that encourage migration.
- Making trade deals with others.
- Giving aid to other countries, or investing in businesses or **infrastructure*** in other countries to help them to develop.

Infrastructure – the structures in place for an area or industry to work e.g. roads, airports, water and power supply etc.

Who or what will be the superpowers of the future?

To what extent do the organisations below demonstrate the four pillars of superpower status?

- Economic power
- Military power
- Political and Ideological power
- Cultural power



History Knowledge Organiser

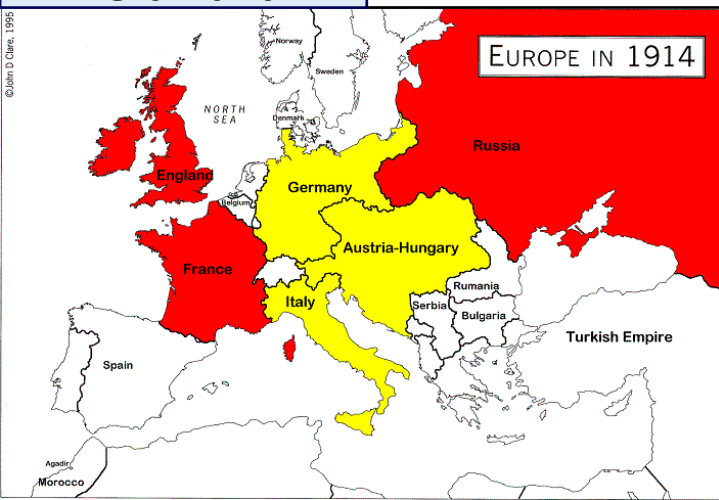


Causes of the First World War



Archduke Franz Ferdinand

Long term causes of WW1	The assassination of Franz Ferdinand
<p>Militarism The belief that military power is essential for national success. This fuelled a European arms race.</p> <p>Alliances The alliance system was a network of agreements and treaties that were negotiated before 1914. They added to the suspicion and tension in pre-war Europe.</p> <p>Imperialism A system where powerful nations control territory outside its own borders. Many nations fought to gain more territory.</p> <p>Nationalism Intense love for ones own country. Germany became obsessed with their own empire and wanted more.</p>	<ul style="list-style-type: none"> ➤ The Archduke Franz Ferdinand was the heir to the throne of the Austrian-Hungarian empire. ➤ The Archduke was assassinated on June 28th 1914, in the city of Sarajevo; the capital of Bosnia and Herzegovina. ➤ A Serbian nationalist group called the Black Hand were behind the assassination. ➤ The Serbian nationalists believed that some territory controlled by the Austrian and Hungarian empire belonged to Serbia. ➤ The assassination led to the Austrian and Hungarian empire declaring war on Serbia, who were allied to Russia.



Alliance System

<p>Triple Entente</p> <p>Britain France Russia</p>	
<p>Grand Alliance</p> <p>Germany Austria-Hungary Italy</p>	



Key Word – Propaganda:
Information, especially of a biased or misleading nature, used to promote a political cause or point of view.

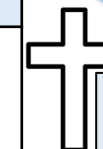
Reactions to the war

Joining up

When the war started Germany had 4.5 million men ready to fight. In comparison, Britain had 700,000. Britain used propaganda to encourage men to join the army. Propaganda was used through posters, radio broadcasts and speeches.

There were many reasons men joined the army:

- Sense of Adventure
- Well paid job
- Patriotism
- Hatred of the Germans
- Fear of cowardice



Conscientious Objectors

There were many men who chose to either delay signing up to the Army or refuse outright. These men were Conscientious Objectors. They objected to the war for many reasons, such as religion and would refuse to volunteer for the war in 1914 and many would refuse when it was compulsory in 1916.

Weapons of the First World War

Artillery	Machine Guns	Aircraft	Gas	Tanks
<p>The big guns of the war. These long ranged weapons accounted for 60% of battlefields deaths during WW1. Shells fired from artillery would explode.</p>	<p>The Machine Gun had been a concept since the musket, but in World War I it became a well designed, brutal killing tool. Machine guns would protect the trench.</p>	<p>WW1 was the first conflict involving the large-scale use of aircraft. They were mainly used for reconnaissance missions and dog fights. Dog fights involved two aircraft attempting to shoot one another down.</p>	<p>To get past deadly machine guns and rifle fire, both sides tried using Poison Gas. One example is deadly Chlorine Gas which attacked the lungs and caused panic and coughing fits. Gas masks were worn.</p>	<p>Developed to offer protection when pushing through no-mans land. They could drive over trenches and barbed wire. Tanks were very slow and would often break down.</p>



History Knowledge Organiser



The Battle of the Somme

- The battle started on July 1st and continued until November.
- The battle was launched to take pressure off the French fighting the Germans at Verdun.
- The allies bombarded the German trenches for 7 days before and fired 1,738,000 artillery shells.
- Many British soldiers were ordered to “walk “ across No-mans land and occupy enemy trenches.
- Around 60,000 Men were killed or wounded on the first day of the Battle (most within the first 15 minutes).
- The first day of the battle is referred to as ‘the British army’s darkest day’.

Reasons for high British casualties

- Barbed wire was not destroyed by artillery.
- Germans had dug up to 60ft deep in their trenches, which offered good protection.
- Mines exploded by the British before the attack alerted the Germans to an attack.

Immigration Nation

When we describe Britain or England, we are describing a country that has been shaped by thousands of years of settlers. Each group has left its mark.

The first migrants

Pre 1066, three main groups of settlers shaped Britain. The Romans, Saxons and Vikings brought many changes. These included: straight roads, coinage and Christianity.

Black Migration

The history of black Britons begins during the Roman period and stretches all the way through the history of the British isles. One of the most notable examples was the Windrush ship which brought hundreds of migrants to help Britain after WW2.



Jewish Migration

British Jews had numbered fewer than 10,000 in 1800 but grew above 120,000 after many fled Eastern Europe to escape the pogroms. Nowadays the Jewish population of the United Kingdom is closer to 300,000. Many fought against the Nazis.

South-East Asian Migration

Since ferry and plane transport have become ever more common we have seen a more diverse group of migrants arrive on our shores. After the 1940s we saw an influx of migrants from Asia.

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Empire at war





Troops from all over the British Empire fought during WW1. Below:
14th Punjab Regiment fighting at the battle of Ypres.



Nations that fought for Britain during WW1

- Canada
- Australia
- India
- Ceylon (Sri Lanka)
- Nepal
- Pakistan
- Burma
- South Africa
- New Zealand

Women at war

The Munitionettes 	Munitionettes produced 80% of the weapons and shells used by the British Army.
The Women's Land Army 	A government organisation that offered cheap female labour to farmers. Many women were employed as field labourers, digging up land and planting crops for the nation.
First Aid Nursing Yeomanry 	They would be assisting the nursing of wounded soldiers, working as ambulance drivers and cooks both in the hospitals of the home front and in Field Hospitals close to the trench lines.
Civil Servants 	Thousands of women answered the call to work from the British Government by replacing many male led jobs



Religion and Ethics Knowledge Organiser



Key words:

Radical: someone who supports & leads on political or social change

Blasphemy: claiming to be God or insulting God

Messiah (Christ in Greek): King or saviour.



Last week of Jesus' life

The last week of Jesus' life, often referred to as **Holy Week**, holds immense significance in Christianity. It begins with Jesus' entry into Jerusalem on **Palm Sunday** and includes events such as the **Last Supper**, and the **betrayal by Judas** leading to his arrest. The week ends with Jesus' crucifixion on **Good Friday** and concludes with the celebration of his resurrection on **Easter Sunday**.

Social and Religious Background 2000 years ago:

The Roman Empire ruled Judea, which was the area where Jesus lived. Jesus was a Jew, living amongst Jewish people who hated the Romans for their violent rule over them and for taxing the people. **The Pharisees** were strict Jewish religious leaders. They interpreted the Jewish laws very extremely and people feared them because they might accuse you **of blasphemy**. The Jewish people were desperate for a **Messiah** to rescue them from the Romans and Pharisees. Christians are people who believe that Jesus was that Messiah or Christ.

Significance of the crucifixion

The crucifixion refers to the **execution of Jesus Christ** on a cross. This event is central to the Christian belief in redemption, symbolizing **Jesus' sacrifice for the forgiveness of sins**. The act of crucifixion involves a person being nailed or bound to a cross, and Jesus willingly endured this suffering to demonstrate love and provide a **path to salvation** for believers.



Significance of the resurrection

The resurrection is a crucial event in Christianity, symbolizing **Jesus overcoming death**. In the words **"I am the resurrection and the life, those who follow me shall never die"** Christians find a message of hope, emphasizing that through faith in Jesus, believers can triumph over challenges and look forward to **eternal life in Heaven** with God.

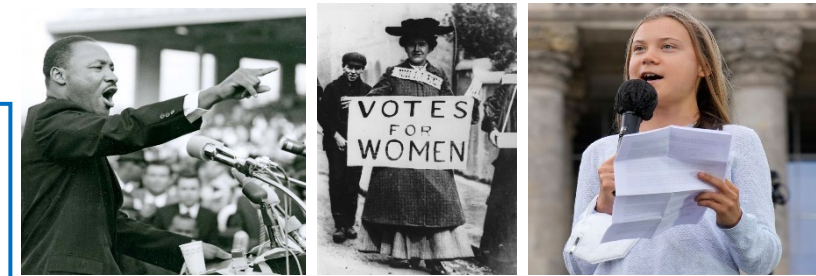
YEAR 8 RADICAL TEACHINGS OF JESUS

What teachings and ideas from Jesus were radical?

- Jesus said seeking money and working to be wealthy was not the pathway to Heaven. He said you cannot serve 2 masters. **You had to choose: money or God.**
- Jesus was anti-racist. In the Parable of the Good Samaritan he taught people to **'love your neighbour'**, in which he was referring to every human who must be treated with respect and equality.
- Jesus taught that we should forgive everyone and **'love our enemies and pray for those who hate you'**.
- Jesus befriended outcasts in society who were ignored by others such as tax collectors and lepers.

Who did Jesus befriend and help?

Jesus helped and befriended a wide range of people, including the poor, sick, sinners, tax collectors, and those considered **outcasts in society**. His teachings emphasized **love, forgiveness, and inclusivity**, encouraging everyone to treat others with kindness. Jesus' message focused on compassion and friendship, breaking **down social barriers** and reaching out to those who were marginalized or overlooked by society.



Who is radical and can be compared to Jesus in modern times?

- Martin Luther King** - led the civil rights movement to end segregation laws in USA states
- Emelline Pankhurst** - led the suffragette movement for women's right to vote in UK
- Greta Thunberg** - led school strikes for action on global climate change

17

Religion and Ethics Knowledge Organiser

What is the importance of Sacred Spaces?

Sacred spaces are important for both religious and non-religious people. For religious people, these places are where they go to **worship, connect with their faith, and be part of a community**. The art and symbols in these spaces help them understand their religion better. Non-religious people can appreciate sacred spaces for their **cultural and historical value, beautiful architecture**, and as **quiet places for reflection**. These spaces also host events support their local community and bring **people together, fostering understanding and shared values**.



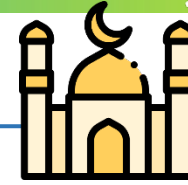
Why are Churches important?

Churches are important for various reasons. They are places where people come together to **worship, find moral guidance**, and build a **supportive community**. Churches often organise charitable activities such as **food banks**, contributing to the well-being of the local community. Additionally, they mark important **life events** and serve as cultural and architectural landmarks, **preserving history** and providing **educational programs**. Churches play a role in shaping individuals' **spiritual journeys**, fostering a **sense of belonging**, and making positive contributions to society through acts of charity.

YEAR 8 Sacred Spaces

Why are Mosques important?

Mosques are crucial for Muslims as places of **worship** and **community gathering**. They provide spaces for **daily prayers, Friday congregations**, and educational programs, promoting spiritual growth and unity. Beyond religious duties, mosques engage in charitable activities, actively promoting the **principle of zakat**, where they **organise aid distributions, food drives**, and **community outreach**. They also offer a sense of **belonging among diverse Muslim communities**, encouraging shared values and collective well-being.



Why are Gurdwaras important?

A Gurdwara serves as a central place for **worship** and **community activities**. It embodies the Sikh principles of **equality, selfless service (sewa)**, and **community fellowship**. Sikhs gather at the Gurdwara to engage in **congregational prayers, listen to the Guru Granth Sahib**, and participate in the **langar**, a community kitchen that offers free meals to all, regardless of background. The concept of sewa, or selfless service, is integral to Gurdwaras, where volunteers work together to ensure the well-being of the community and extend assistance to those in need.



Notre Damn – Why does it matter?

Notre Dame Cathedral in Paris which was erected in the 1345. It's a symbol of **France's history, art, and shared identity**. The cathedral's stunning architecture showcases the incredible skills of French craftsmen and contains important **religious relics** making it a **proud landmark that people around the world recognize**. When Notre Dame faced a **fire in 2019**, people from around the world **raised money to save the building**. Many people supported the effort, however some **people criticised the fund raising effort** stating that the money would be better spent looking after **people who are struggle or homeless**.

Key words

Ritual: Planned actions or ceremonies done for religious or cultural reasons.

Community: A group of people living together and sharing common interests, values, and goals.

Sacred: Holy, blessed, or set apart for worship or reverence.

Numinous: The presence of a divine or spiritual quality that evokes awe and reverence.

Identity: The unique traits and features that make someone who they are.

Shared identity: Common characteristics, experiences, or values that bind a community together.

Diversity: Having different people in a group or community.

Charity: Providing help, support, or resources to those in need, often through acts of kindness and generosity.

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Maths Knowledge Organiser



FREQUENCY TABLES

Key Concept

Age	Frequency
11	17
12	11
13	8

Mode is 11 as it has the highest frequency

Median is 12 as it is the 18th value (halfway)

Mean is total ages divided by number of people

$(11 \times 17) + (12 \times 11) + (13 \times 8)$ gives total ages and there are 36 people (add up the frequencies)

$$\text{Mean} = 423 \div 36 = 11.75$$

Key Words

Qualitative Data

non-numerical data

Quantitative Data

numerical data

Continuous Data

data that can take any numerical value within a given range.

Discrete Data

data that can take only specific values within a given range.

Examples

These are the journey times, in minutes, for a group of railway travellers

25, 37, 12, 32, 28, 17, 20, 43, 15, 34, 45, 22, 19, 36, 44, 17

1. Construct a grouped frequency table to represent the data
2. What is the modal class?

Time, T (minutes)	Frequency
$10 < T \leq 20$	6
$20 < T \leq 30$	3
$30 < T \leq 40$	3
$40 < T \leq 50$	4

The modal class is $10 < T \leq 20$ as it has the highest frequency

Questions

These are the heights (in metres) of 20 people.

1.65, 1.53, 1.71, 1.72, 1.48, 1.74, 1.56, 1.55, 1.80, 1.85, 1.58, 1.61, 1.82, 1.67, 1.47, 1.76, 1.79, 1.66, 1.68, 1.73

Construct a grouped frequency table and use it to find the modal class

Year 8

19



Maths Knowledge Organiser



EXPAND AND SIMPLIFY BRACKETS

Key Concepts

Expanding brackets

Multiply the number outside the brackets with EVERY term inside the brackets

Indices

$a \times a = a^2$ and $a \times a \times a = a^3$

$3m \times 4m = 12m^2$ because $3 \times 4 = 12$ and $m \times m = m^2$

Examples

Expand and simplify where appropriate

1) $7(3 + a) = 21 + 7a$

2) $2(5 + a) + 3(2 + a) = 10 + 2a + 6 + 3a$
 $= 5a + 16$

3) $m(m + 6) = m^2 + 6a$

Questions

1) Expand and simplify

(a) $3(2 - 7f)$ (b) $5(m - 2) + 6$ (c) $3(4 + t) + 2(5 + t)$

2) Expand and simplify

(a) $a(a + 7)$ (b) $p(p - 4)$ (c) $3p^2(2p - 8)$

20

Year 8

Key Words

Expand
Simplify
Indices



Maths Knowledge Organiser



Adding, Subtracting & Multiplying Fractions

Key Concepts

Adding and subtracting fractions: To add and subtract fractions they must have a common denominator. If you have to, find equivalent fractions to get a common denominator.

To multiply fractions you need to multiply the numerators, then the denominators. Simplify if you can.

Examples

$$\frac{1}{2} + \frac{1}{3} = ?$$

$$\frac{1 \times 3}{2 \times 3} = \frac{3}{6} \quad \frac{1 \times 2}{3 \times 2} = \frac{2}{6}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

Multiplying fractions

Multiply the numerators: $\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$

Multiply the denominators: $\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$

Simplify the fraction if necessary: $\frac{6}{20} = \frac{3}{10}$

Key Words

Denominator: bottom number of fraction

Numerator: Top number of fraction

Year 8

Questions

Copy and complete the following sums. Cancel down where appropriate.

1). $\frac{5}{6} - \frac{1}{2}$ 2). $\frac{1}{4} + \frac{5}{12}$ 3). $\frac{7}{9} - \frac{2}{3}$ 4). $\frac{7}{8} - \frac{1}{4}$

21

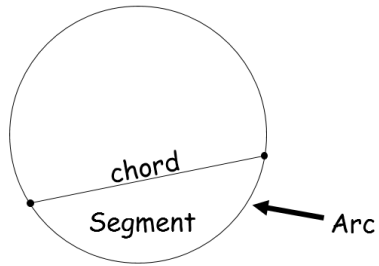
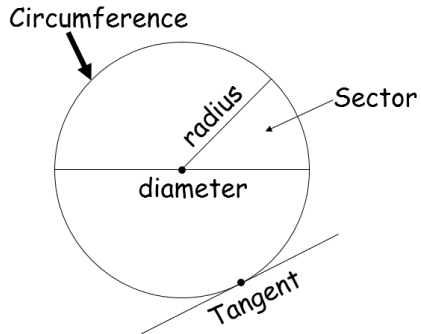
1). $\frac{1}{3}$ 2). $\frac{2}{3}$ 3). $\frac{1}{9}$ 4). $\frac{5}{8}$

Maths Knowledge Organiser

CIRCLES



Key Concepts

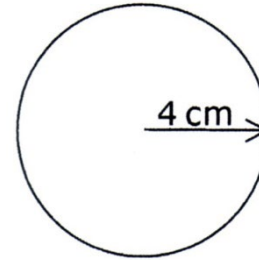


Key Words

Circumference: The outside edge or perimeter of the circle
Diameter: Distance from one side of the circle to the other, going through the centre.
Radius: Distance from the centre of a circle to the circumference.
Chord: A line that intersects the circle at two points.
Tangent: A line that touches the circle at only one point.

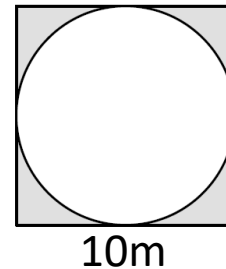
Examples

Find the area and circumference to 2dp.



$$\begin{aligned} \text{Circumference} &= \pi \times d \\ &= \pi \times 8 = 25.13\text{cm} \\ \text{Area} &= \pi \times r^2 \\ &= \pi \times 4^2 = 50.27\text{cm}^2 \end{aligned}$$

Find shaded area to 2dp.



$$\begin{aligned} \text{Square area} &= 10 \times 10 \\ &= 100\text{m}^2 \\ \text{Circle area} &= \pi \times r^2 \\ &= \pi \times 5^2 \\ &= 78.54\text{m}^2 \\ \text{Shaded area} &= 100 - 78.54 = 21.46\text{m}^2 \end{aligned}$$

Year 8

Tip

If you don't have a calculator you can leave your answer in terms of π .

Formula

$$\begin{aligned} \text{Circle Area} &= \pi \times r^2 \\ \text{Circumference} &= \pi \times d \end{aligned}$$

Questions

- Find to 1dp the area and circumference of a circle with:
 - Radius = 5cm
 - Diameter = 12mm
 - Radius = 9m
- Find the area & perimeter of a semi-circle with diameter of 15cm.

22

ANSWERS: 1) a) $A = 78.5\text{cm}^2$, $C = 31.4\text{cm}$ b) $A = 113.1\text{mm}^2$, $C = 37.7\text{mm}$ c) $A = 254.5\text{m}^2$, $C = 56.5\text{m}$ 2) $A = 88.4\text{cm}^2$, $P = 38.6\text{cm}$

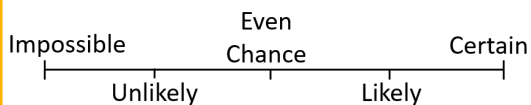
Maths Knowledge Organiser

CALCULATING PROBABILITY

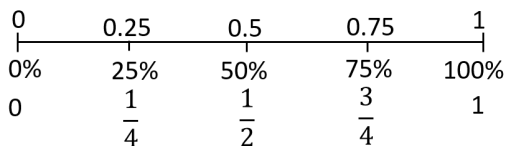


Key Concept

Chance



Probability



Probabilities can be written as:

- Fractions
- Decimals
- Percentages

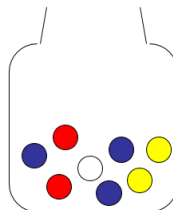
Key Words

Probability: The chance of something happening as a numerical value.

Sample Space: A list of all possible outcomes. E.g. For rolling a dice the sample space would be (1, 2, 3, 4, 5, 6)

Mutually Exclusive: Two or more events that cannot happen at the same time

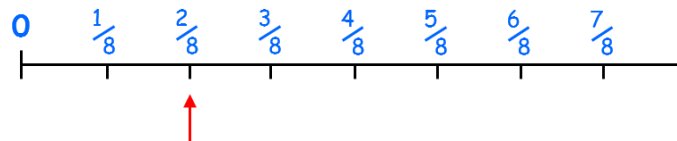
Examples



1) What is the probability that a bead chosen will be **yellow**. Show the answer on a number line.

$$\text{Probability} = \frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$$

$$P(\text{Yellow}) = \frac{2}{8}$$



Year 8

Tip

Probabilities always add up to 1.

Questions

In a bag of skittles there are 12 red, 9 yellow, 6 blue and 3 purple left. Find: a) P(Red) b) P(Yellow) c) P(Red or purple) d) P(Green)

23

ANSWERS: 1) a) $\frac{12}{30} = \frac{2}{5}$ b) $\frac{9}{30} = \frac{3}{10}$ c) $\frac{10}{30} = \frac{1}{3}$ d) $\frac{30}{15} = 2$

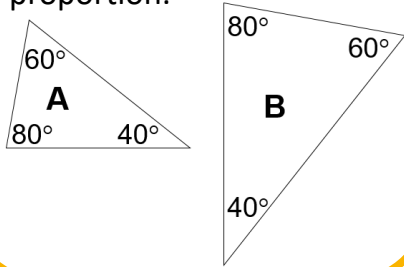
ENLARGEMENT



Key Concept

Properties of similar shapes:

- The corresponding angles will be the same if shapes are similar.
- Corresponding edges must remain in proportion.



Key Words

Transformation: This means something about the shape has 'changed'.

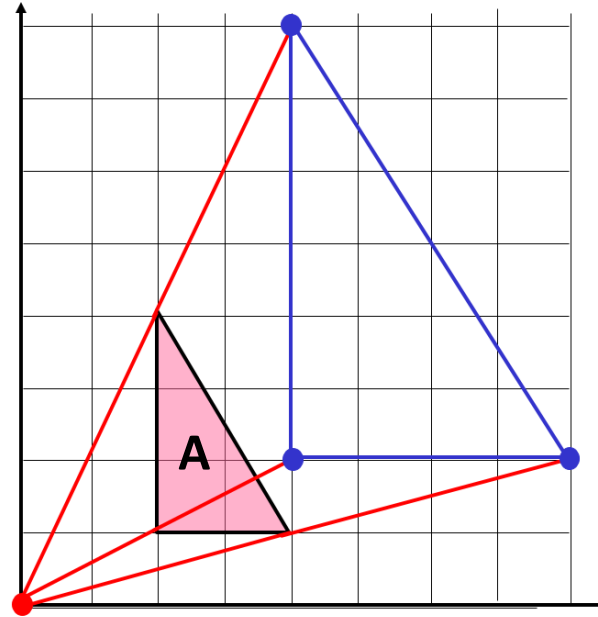
Enlargement: A change in size, either bigger or smaller.

Congruent: These shapes are the same shape and same size but can be in any orientation.

Similar: Two shapes are mathematically similar if one is an enlargement of the other.

Examples

Enlarge shape A, scale factor 2, centre (0, 0).



Scale factor 2 - Double the distance between each vertex and the centre of enlargement.

Year 8

Tip

To find the centre of enlargement connect the corresponding vertices.

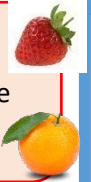
Questions


- 1) A triangle has lengths 3cm, 4cm and 5cm. What will they be if enlarged scale factor 3.
- 2) Rectangle A measures 3cm by 5cm, B measures 15cm by 25cm. What is the scale factor of enlargement?

24


T

il y avait – there was/were
 était – was c'était – it was
 étaient – were c'étaient – they were
 il avait – he had
 ils avaient – they had



Perfect Tense  **PAST** 123

Subject	Avoir	Past participle
J'	ai	Take off ending from infinitive: -er verbs = é -ir verbs = i -re verbs = u
Tu	as	
Il/elle	a	
Nous	avons	
Vous	avez	
Ils/elles	ont	

Perfect Tense  123

Subject	Être	Past participle
Je	suis	Take off ending from infinitive: -er verbs = é -ir verbs = i -re verbs = u **Agreement of PP (f) + e (pl) + s (f+pl) + es
Tu	Es	
Il/elle	Est	
Nous	Somm es	
Vous	Êtes	
Ils/elles	sont	

O Irregular verbs with avoir

eu – had
 bu – drank
 vu – saw
 lu - read
 fait - did
 dit – said
 écrit - wrote

DR. & MRS. VANDERTRAMP

Infinitif	Participe Passé
Devenir	Devenu(e)(s)
Revenir	Revenu(e)(s)
Monter	Monté(e)(s)
Rentrer	Rentré(e)(s)
Sortir	Sorti(e)(s)
Venir	Venu(e)(s)
Arriver	Arrivé(e)(s)
Naître	Né(e)(s)
Descendre	Descendu(e)(s)
Entrer	Entré(e)(s)
Retourner	Retourné(e)(s)
Tomber	Tombé(e)(s)
Rester	Resté(e)(s)
Aller	Allé(e)(s)
Mourir	Mort(e)(s)
Partir	Parti(e)(s)



O Opinions & Pronouns

me fascine ça m'énerve
 me plaît 😄😞 m'ennuie
 m'amuse m'ennuie
 m'intéresse me fâche (angers me)
 me rend content(e) me rend triste

C Connectives / frequencies

alors /donc so, therefore
 car / parce que because
 dernier/dernière last
 beaucoup (de) a lot (of)

d'abord first of all
 ensuite next
 après afterwards
 finalement finally

trop = too
 assez/très = quite /very
 un peu = a bit
 vraiment = really
 incroyablement = incredibly

C Complexity

On peut + inf - you can...
 On peut faire - you can do
 On peut voir - you can see



A Adjectives

C'était comment? What was it like?

C'était ... It was ...
 J'ai trouvé ça ... I found it ...


TIF - selon moi..
 selon mon copain..
 je dirais que

bien	good
bizarre	weird
cool	cool
cher	expensive
effrayant	scary
ennuyeux	boring
fabuleux	wonderful/fantastic
génial	great
horrible	horrible/terrible
intéressant	interesting
marrant	funny/a laugh
nul	rubbish
lent	slow
plein d'action	full of action

Ce n'était pas mal. It wasn't bad.

Il y avait un hôtel cher
 La ville était grande
 Les monuments étaient intéressants

25



À Paris

J'ai **envoyé** des cartes postales.
 J'ai **pris** des photos.
 J'ai **vu** la *Joconde*.
 J'ai **attendu** le bus.
 J'ai très bien **dormi**.
 Je **n'ai pas visité** Notre-Dame.
 On a **fait** les magasins.
 On a **bu** un coca.
 On a **fait** un tour de la ville en segway.
 On a **loué** des segways / des vélos
 On a **fait** une balade en bateau-mouche.

1

In Paris

I sent some postcards.
took some photos.
I saw the Mona Lisa.
I waited for the bus.
I slept very well.
I didn't visit Notre-Dame.
We did (went) shopping.
We drank a cola.
We did a tour of the town by segway.
We hired (some) Segways / bikes
We did (went on) a boat trip.

2a Destinations

à Paris **EN** France [fem.n.]
 à Londres **EN** Angleterre [fem.n.]
PRÈS DE ... au Pays de Galles [masc.n.]
 en Floride **AUX** États-Unis [pl.n.]

Destinations

4

Quand? • When?

aujourd'hui	today
hier	yesterday
avant-hier	the day before yesterday
(mardi) dernier	last (Tuesday)

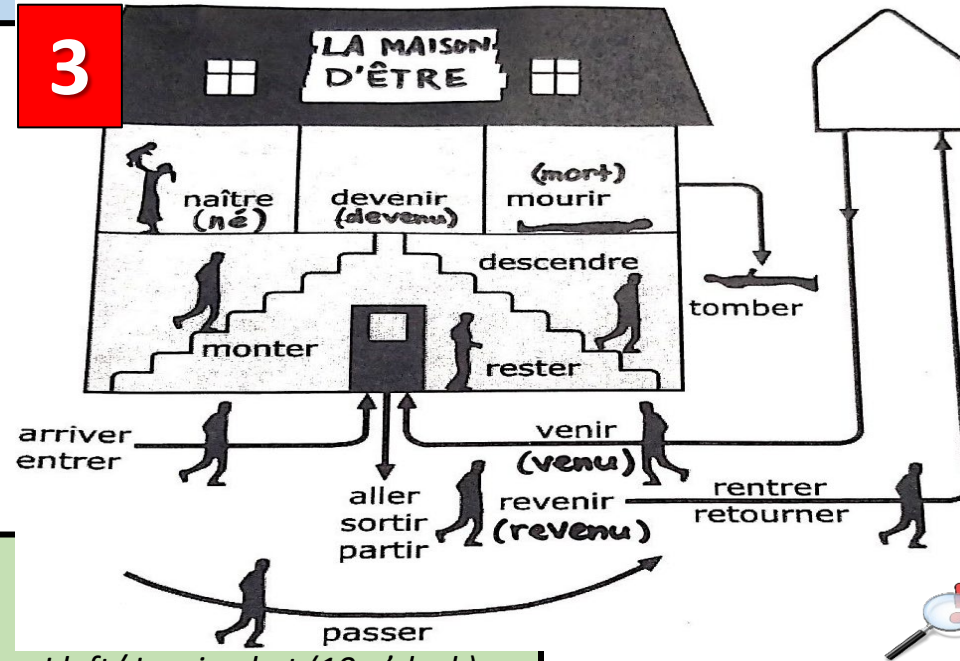
5

Les mots essentiels • High-frequency words

à quelle heure?	when?/at what time?
quand?	when? (for day, month, year, etc.)
combien?	how much?/how many?
où?	where?
un peu	a bit
beaucoup (de)	a lot (of)
d'abord	first of all
ensuite	next
puis	then
après	afterwards
finalement	finally, lastly

6

3



Tu as voyagé comment?

How did you travel?

Je suis allé(e)... / j'ai pris LE...

en avion	by plane	
en bus	by bus	
en car	by coach	
en métro	by underground	
en train	by train	
en voiture	by car	
à vélo	by bicycle	
à pied	on foot	

2a

UN VOYAGE [a trip]

Je suis allé[e] à (Paris) = *I went to (Paris)*
 Je suis parti[e] / je suis arrivé(e) à 10 heures = *I left/ I arrived at (10 o'clock)*
 Le train est parti/arrivé à (huit heures) = *The train left/ arrived at (8 o'clock)*
 Je suis sorti[e] au restaurant/ resto = *I went out to the restaurant*
 Je suis resté[e] chez moi/ à l'hôtel = *I stayed (at home/ at the hotel)*
 Je suis rentré[e] / retourné[e] en Angleterre = *I went back to England*

2b

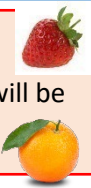
les verbes; boire – to drink voir – to see
 attendre – to wait dormir – to sleep louer – to hire

7

26



1. Il y a – there is / are
2. c'est – it is ça sera – it will be
3. sont – (they)are seront – they will be
4. a - has
5. ont - are



T

Present tense: regular verbs

PRESENT	-er verbs	-ir verbs	-re verbs
je / j'	habit- e	-is	-s
tu	habit- es	-is	-s
Il/elle/on	habit- e	-it	-
Nous	habit- ons	-issons	-ons
Vous (pl)	habit- ez	-issez	-ez
Ils or elles	habit- ent	-issent	-ent

T

How to form the future tense with ALLER... 123

You will need to remember one easy formula:

1	2	3
subject	present tense of aller	infinitive
Je	vais	manger
Tu	vas	jouer
il / elle / on	va	faire
Nous	allons	regarder
Vous	allez	finir
ils/elles	vont	aller



O

je trouve que
je pense que
je crois que
je dirais que
à mon avis

- selon moi = according to me
- selon mon copain
- selon mes parents

Opinions & Pronouns

ÇA OR CELA me fascine OR me plaît OR m'intéresse OR m'amuse OR me rend content[e]



CELA or ça m'énerve

CELA or ça m'ennuie

CELA/ ça me fâche [angers me]

P

Connectives / frequencies

alors /donc so, therefore
car / parce que because
dernier/dernière last
beaucoup (de) a lot (of)

d'abord first of all
ensuite next
après afterwards
finalement/enfin finally



C

aujourd'hui today
hier [soir/matin] yesterday [eve./morning]
avant-hier the day before yesterday
(mardi) dernier last (Tuesday)

Complexity - comparisons

PLUS petit[e] QUE: smaller THAN
MOINS beau QUE: LESS handsome THAN
LE PLUS jeune : THE youngEST
LA MOINS gentille : THE LESS kind
LES PLUS/ MOINS...: THE MOST/ THE LEAST

C

BRAGS Adjectives

A

Beauty:

- 1 beau: handsome / beautiful
- 2 belle: beautiful
- 3 joli[e]: pretty

Ranks:

- 1 premier[e]: first
- 2 deuxième: second

Age:

- 1 jeune: young
- 2 neuf[ve]: brand new
- 3 viel, vieux, vieille: old
- 4 nouvel, nouveau, nouvelle: new

Goodness

- 1 gentil[e]: kind
- 2 bon[ne]: good
- 3 mauvais[e]: bad
- 3 méchant[e]: naughty

Size

- 1 petit[e]: small
- 2 grand[e]: tall
- 3 gros[sse]: fat
- 4 énorme: huge

27

1. Mon jardin est PLUS petit QUE ton jardin/ celle tien (yours).
2. Ma maison est BIEN PLUS grande que ta maison/ or la tienne (yours f).
3. Les monuments ÉTAIENT beaux.(were)

Les questions?

when?
avec qui?
comment?
à quelle heure?
où?
combien de temps?
Qu'est-ce que...?
Est-ce que ...?

Questions? quando

who with / with whom?
how?
at what time?
where?
how long?
what?
did ...? is...?

1



Des questions touristiques

C'est où, le musée?
C'est ouvert quand?
C'est ouvert à quelle heure?
C'est combien, l'entrée?
Est-ce qu'il y a ...
une boutique de souvenirs?

Tourist questions

Where is the museum?
When is it open? (day or date)
At what time is it open?
How much does it cost to get in?
Is there ...
a souvenir shop?

2



À la télé • On TV

je regarde ...	I watch ...
les dessins animés	cartoons
les documentaires	documentaries
les émissions de sport	sports programmes
les émissions de télé-réalité	reality TV shows
les émissions musicales	music shows
les infos	the news
les jeux télévisés	game shows
la météo	the weather
les séries	series
les séries policières	police series
les séries américaines	American series
Mon émission préférée, c'est ...	My favourite programme is ...
j'adore	I love
j'aime bien	I like
je n'aime pas	I don't like
je ne regarde jamais	I never watch
je ne rate jamais	I never miss



Les vêtements • Clothes

Normalement, je porte ...	Normally, I wear ...
des baskets	trainers
des bottes	boots
des chaussures	shoes
une chemise	a shirt
un chapeau	a hat
un jean	jeans
une jupe	a skirt
un pantalon	trousers
un pull	a jumper
un sweat à capuche	a hoodie
un tee-shirt	a T-shirt
une veste	a jacket

Le style • Style

J'ai un style plutôt ...	My style is rather ...
classique	classic
décontracté	relaxed
skateur	skater
sportif	sporty
C'est ...	It's ...
moche	ugly
horrible	horrible
cool	cool
chic	chic

123



Au futur • In the future

Qu'est-ce que tu vas faire/porter?	What are you going to do/wear?
ce weekend	this weekend
cet été	this summer

6

les verbes utiles;
aller – to go
venir – to come
partir – to leave
rester – to stay
voler – to steal
porter – to wear



4

Les films • Films

j'aime ...	I like ...
je suis fan de ...	I'm a fan of ...
je ne suis pas fan de ...	I'm not a fan of ...
j'ai une passion pour les ...	I have a passion for ...
j'ai horreur des ...	I really dislike ...
je déteste ...	I hate ...
les comédies	comedies
les films d'action	action films
les films d'amour	romantic films
les films d'arts martiaux	martial arts films
les films d'aventure	adventure films
les films fantastiques	fantasy films
les films d'horreur	horror films
les films de science-fiction	science-fiction films
mon acteur préféré, c'est ...	my favourite actor is ...
mon film préféré, c'est ...	my favourite film is ...



28

Look for time expressions and tenses to spot whether someone is talking about the present or the past.

Present	Past
Time expressions	
d'habitude	hier
normalement	samedi dernier
souvent	la semaine dernière
quelquefois	l'année dernière
Tenses	
je visite	j'ai visité
je fais	j'ai fait
je vais	je suis allé(e)
je prends	j'ai pris
c'est	c'était

5

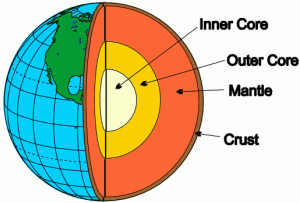
3

8H Rocks

1. Rocks and their Uses

Geologist	A scientist who studies rocks and the Earth.
Rocks	Naturally occurring substances made up of different grains.
Grains	Made from one or more chemical compounds.
Minerals	The chemical compounds in rocks- rocks are mixtures of different minerals.
Texture	The combination of sizes and shapes of grains in a rock.
Interlocking Crystals	The grains all fit together with no gaps. They are hard and do not wear away easily.
Rounded Grains	Some rocks have rounded grains with gaps in between. They are not strong and can be worn away more easily.
Porous	Rounded grain rocks can absorb water because it gets into the gaps.
Permeable	Water can run through.
Cement	A building material made from limestone.
Gravel	A mixture of cement, sand and gravel.

2. Igneous and Metamorphic

The Structure of the Earth	
Igneous Rocks	Formed when molten rock cools down <i>e.g. basalt, granite</i>

Magma	Molten rock
Lava	Magma that reaches the Earth's surface.
Small Crystals	Formed when molten rock cools down fast due to less time for particles to become ordered.
Large Crystals	Formed when molten rock cools down slowly due to more time for a large grid pattern to form.
Extrusive	Igneous rocks formed from cooling lava above the surface.
Intrusive	Igneous rocks formed underground.
Metamorphic Rocks	Formed by pressure and heat changing other rocks. <i>e.g. Schist, gneiss (both formed from granite) slate (from mudstone) and marble (from limestone)</i>
Metamorphic Rock Texture	Always made from interlocking crystals which may form coloured bands.

3. Weathering and Erosion

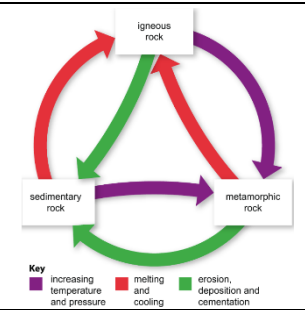
Weathering	When rocks are broken up by physical, chemical or biological processes.
Chemical Weathering	When rocks are broken up by chemical reactions. <i>e.g. gases in air making rainwater slightly acidic which then reacts with minerals in rock wearing them away.</i>
Biological Weathering	When rocks are broken up by living organisms. <i>e.g. growing plants splitting rocks apart with their roots.</i>

Physical Weathering	When rocks are broken up by physical processes. <i>e.g. changes in temperature causing expansion and contraction over time, cracking rocks.</i>
Expanding	Rocks get bigger when they are heated.
Contracting	Rocks get smaller when they are cooled.
Freeze-Thaw Action	Water gets into cracks in rocks, freezes, expands and then forces the crack to get bigger.
Erosion	The movement of loose and weathered rock.
Abrasion	When rock fragments bump into each other and are worn away.
Sediment	Bits of rock and sand in streams or rivers.
Glacier	Rivers of ice that move slowly but can transport large pieces of rock.

4. Sedimentary Rocks

Sedimentary Rocks	Formed when layers of sediment build up over time followed by compaction then cementation. <i>e.g. sandstone, mudstone</i>
Compaction	Pressure forces water out from the gaps between grains squashing the grains closer together.
Cementation	Dissolved minerals between the gaps act as a glue and 'cement' the grains together.
Sedimentary Rock Texture	They are always made from rounded grains. Properties depend on the type of sediment that forms them.

The Rock Cycle



5. Materials in the Earth

Native State	Metals found as pure elements in rocks.
Ores	Rocks that contain enough of a metal / metal compound to be worth mining.
Extracting Ores	Ores are obtained by mining, then crushed and chemical reactions used to obtain the metal.
Mining Problems	Damages the environment by destroying habitats and causes pollution.
Rare Metals	Hard to obtain which makes them expensive.
Recycling	Using a material again.
Recycling Advantages	Cuts down on pollution from mining and landfill sites, allows supplies to last longer and requires less energy.

Work through memorising the information – highlight each definition once you know it. When you have completed your highlighting complete the gap fill and activities on the second sheet to support your retrieval practice.

29

9A Genetics and Evolution

1. Environmental Variation

Environment	An organisms surroundings - affected by physical environmental factors and living organisms.
Characteristics	The features of an organism.
Variation	The differences between characteristics of organisms.
Environmental Variation	Variation caused by an organism's environment <i>e.g. hairstyle</i>
Continuous Variation	Variation that can have any value between two points <i>e.g. height, mass</i>
Discontinuous Variation	Variation that can only have a value from a limited set of values <i>e.g. eye colour</i>
Classification	Sorting organisms into groups.
Species	The smallest group an organism is classified into. Members of the same species can reproduce together and produce fertile offspring.

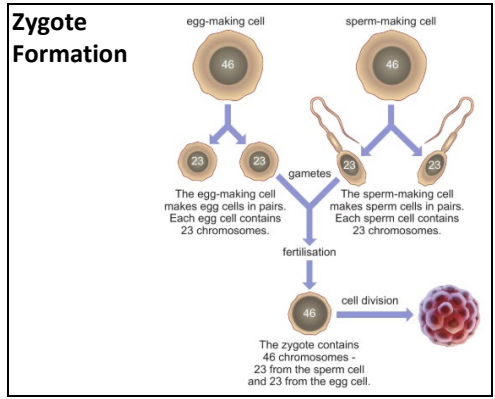
2. Inherited Variation

Inherit	Offspring / children get a mixture of characteristics from their parents.
Inherited Variation	The variation in characteristics inherited from parents <i>e.g. blood group</i>
Genetic Information	The instructions for inherited characteristics stored inside the nuclei of cells.

Gametes	Sex cells (sperm and egg)
Sexual Reproduction	Two gametes fuse together during fertilisation.
Zygote	Fertilised egg cell formed during fertilisation. Contains genetic material from both parents.
Normal Distribution	Bell shape usually given by plotting characteristics that show continuous variation.
Normal Distribution Example	<p>Variation in height of Year 9 students</p>

3. DNA

Watson and Crick	Used data from themselves and other scientists to build the first model of DNA in 1953.
Rosalind Franklin	Took x-ray images of DNA and showed it was a spiral structure.
Chromosomes	DNA is found in structures called chromosomes inside nuclei of cells.
Human DNA	Human cell nuclei contain 46 chromosomes (23 pairs).
Genes	A gene is a section of DNA /a chromosome.
Sex Chromosomes	Determines sex of offspring. Girls have two X chromosomes, boys have an X and a Y.
Cell Division	The splitting of a parent cell to form two daughter cells.



4. Genes and Extinction

Adaptations	Features of an organism to help it survive in its habitat.
Ecosystem	All the physical environmental factors and living organisms in a habitat.
Endangered	When a species is at risk of becoming extinct.
Extinct	When a species no longer exists.
Competition	Organisms fighting over the resources that are available.
Native	A species that has always lived in an area.
Squirrels	Red squirrels are native to the UK and grey squirrels came to the UK in the 1870's. Grey squirrels can store more fat to survive the winter and can digest unripe acorns unlike red squirrels. This has meant grey populations have increased leaving less food for red squirrels.
Biodiversity	The number of different species within an area.
Preserving Biodiversity	Banning hunting, set up nature reserves, start breeding programmes and gene banks.

Gen Banks	Storing parts of organisms (seeds, gametes etc.) to grow if they become extinct.
------------------	--

5. Natural Selection

Natural Selection	A change in the environment causes certain characteristics to be 'selected' to pass on to the next generation.
Peppered Moths	Most peppered moths were pale in the 1850's. Then factories started churning out soot, turning trees black. Birds could now easily spot the pale moths to eat them. More black moths survived and reproduced, increasing their numbers. This is an example of natural selection.
Evolution	A change over time in the characteristics of organisms.
New Species	As populations evolve they can become new species.
Darwin's Theory of Evolution	Charles Darwin and Alfred Russel Wallace developed a hypothesis that natural selection causes evolution.

Lesson	Memorised?
1. Environmental Variation	
2. Inherited Variation	
3. DNA	
4. Genes and Extinction	
5. Natural Selection	

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9B Plant Growth

1. Reactions in Plants

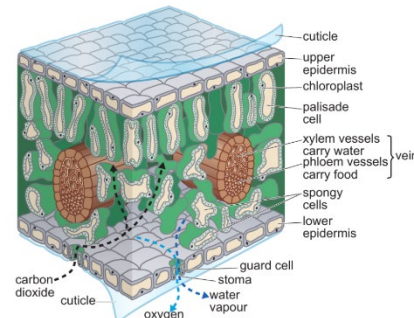
Reactants	The substances that take part in a chemical reaction.
Products	The new substances made in a chemical reaction.
Photosynthesis	A process that plants use to make their own food.
Photosynthesis Word Equation	carbon dioxide + water \longrightarrow glucose + oxygen
Chloroplasts	Where photosynthesis occurs inside plant cells.
Chlorophyll	A substance inside chloroplasts that captures the light energy needed for photosynthesis.
Limiting Factor	A variable that slows down the rate of photosynthesis.
Aerobic Respiration	The process by which living organisms release energy stored in glucose.
Aerobic Respiration Word Equation	glucose + oxygen \rightarrow carbon dioxide + water
Phloem	The vessels inside plants that transport glucose.

2. Plant Adaptations

Adaptations	Features that something has to enable it to do a certain job.
Root Adaptations	They are branched and spread out, helping them to get a large volume of water.
Root Hair Cells	Increase the surface area of roots so that more water can be absorbed.
Xylem	The vessels inside plants that transport water.

Uses of Water	- photosynthesis - keeping leaves cool - filling up cells to keep them expanded and firm
Palisade Cells	Cells in a leaf adapted to carry out photosynthesis by having lots of chloroplasts.
Cuticle	A waxy layer on the outside of a leaf that stops them from losing too much water.
Stomata	Small holes in a leaf that open and close to allow gas exchange.
Guard Cells	The cells that open and close the stomata.
Gas Exchange	The swapping of different gases from inside the leaf and the atmosphere.

Structure of a Leaf



3. Plant Products

Lipids	Insoluble substances that include fats and oils.
Uses of Lipids	- Found in the cuticle, making it waterproof - make parts of the cell like cell membranes - energy store found in seeds
Polymer	A substance made up of a long chain of repeating groups of atoms (monomers).
Starch	A polymer formed by linking together glucose molecules.

Uses of Starch	Stored in the chloroplast until photosynthesis stops then broken down into sugars to be transported. It can then be converted to starch and stored in storage organs or used to make cellulose.
Testing for Starch	Iodine solution will turn blue-black if starch is present.
Proteins	Polymer formed by joining long chains of amino acids.
Nitrates	Needed to make amino acids.
Germination	Water and oxygen enter seed allowing molecules to move around. Enzymes released that digest starch into glucose which enters the embryo allowing it to respire and grow.

4. Growing Crops

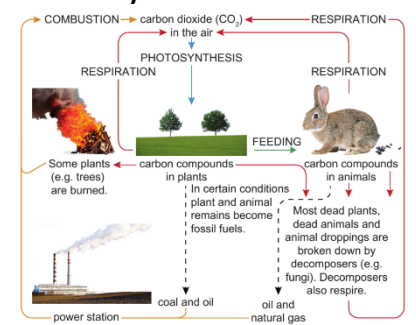
Yield	The amount of useful product you get from a crop.
Increasing Yield	Forests are cut down, hedgerows removed, machines used
Fertilisers	Contain mineral salts that plants need to grow.
Decomposers	Microorganisms that break down manure and release mineral salts.
Pesticides	Kill pests
Insecticides	Kill insect pests
Fungicides	Kill fungi that cause plant disease
Herbicides	Kill weeds (weedkillers) that compete with crops for resources- they are selective so only kill the weeds
Variety	Group of plants bred for a certain characteristic.

Cross-Breeding	Breeding different varieties together to produce offspring with characteristics of both.
Selective Breeding	Choosing organisms to breed based on the characteristics that you want in the offspring.

5. Farming Problems

Fertiliser Problems	Can wash into rivers causing fast growth of algae which blocks out the light causing plants to die. Decomposers break down dead material using up oxygen.
Pesticide Problems	Some do not break down in the environment (they are persistent) so move up the food web.
Varieties Problems	They are identical so a disease will affect them all. Biodiversity is reduced.

The Carbon Cycle



Lesson

1. Reactions in Plants
2. Plant Adaptation
3. Plant Products
4. Growing Crops
5. Farming Problems

31

Memorised?

9E Making Materials

1. About Ceramics

Ceramics	Range of hard, durable, non-metallic materials, generally unaffected by heat. <i>e.g. glass, china</i>
Ceramic Properties	<ul style="list-style-type: none"> • Hard, strong and brittle • High melting point and heat resistant • Good insulators of heat and electricity • Very unreactive
Glass	Hard, rigid, unreactive and can be transparent making it ideal for windows, bottles and jars.
Porcelain	Rigid, strong when compressed and an electrical insulator making it ideal to support electrical cables on pylons.
Ceramics	Heat resistant so used for brakes in high-performance cars
Raw Materials	Clays are used for making pottery and sand for glass.
Using Clay	When heated, chemical reactions occur forming new compounds. When cooled, crystals form and bind together in the ceramic.
Crystal Size	Dependent upon speed of cooling. Slower cooling produces larger crystals.
Lattice Structure	Grid-like structure formed by crystals.
Bonds	Because atoms in a lattice structure are joined by strong bonds it explains why ceramics are so stiff and have high melting points.

2. Polymers

Polymer	Substances that have molecules made of long chains of repeated groups of atoms.
Monomer	Small molecule joined with the identical molecules to form polymers.
Rubber	Polymer from certain trees. Soft and sticky when hot, but hard and brittle when cold.
Vulcanisation	Rubber is heated with sulfur to form cross-links between molecules making it harder and tougher.
Natural Polymer	Polymers found naturally. <i>e.g. rubber, DNA, proteins</i>
Synthetic Polymers	Polymers made in laboratories mainly using raw materials from crude oil.
Polymerisation	Reaction that joins together monomers into chains.
Forming Polythene Diagram	
Exothermic	Reactions that transfer energy to the surroundings. <i>e.g. polymerisation</i>
Endothermic	Reactions that absorb energy from the surroundings.

3. Composite Materials

Composite Material	Combinations of 2 or more materials with properties of each. <i>e.g. concrete, paper</i>
Laminated Glass	Combines layers of glass with a clear polymer

Laminated Glass Properties	Laminated glass is rigid and hardwearing like glass but holds together under impact.
Making Composite Materials	Many are made by mixing fibres into a liquid resin which then sets hard.
GRP (Glass Reinforced Plastic)	Composite of glass fibres in a polyester resin. Used in boatbuilding as it is strong, light and slightly flexible.
Concrete	Composite material made from a mixture of cement, sand, aggregate and water.
Concrete Properties	Strong, hardwearing and easy to mould into shapes.
Aggregate	Crushed rocks
Reinforced Concrete	In building works, steel rods are also added to make it even stronger.
Cement	Mainly calcium oxide which is made by roasting calcium carbonate (limestone) in a thermal decomposition reaction which is endothermic
Thermal Decomposition of Limestone Calcium carbonate → calcium oxide + carbon dioxide	

4. Problems With Materials

Finite	Limited resource that will eventually run out.
Fossil Fuels	Usually used in the manufacture of materials.
Incomplete Combustion	Produces carbon monoxide and soot due to lack of oxygen
Sulfur Dioxide	Caused by sulfur impurities in fuel. Leads to acid rain.
Nitrogen Oxides	Caused by high combustion temperatures. Form acid rain.

Carbon Dioxide	Traps the Sun's energy, increasing the greenhouse effect, leading to global warming.
Carbon Capture Technology	Technology used to remove carbon dioxide from waste gases given off.
Toxic Substances	Pass along the food chain as organisms eat smaller animals.
Non-Biodegradable	Materials that do not break down naturally.

5. Recycling Materials

Recycling	Using the same materials again.
Recycling Benefits	Reduce use of finite resources, save fuel/energy, reduce landfill use.
Recycling Metals	Can be melted down and used again.
Recycling Glass	Can be crushed, melted and moulded into new glass.
Recycling Polymers	Difficult and expensive to separate different polymers so recycling levels are low.
Recycling Paper	Water added, filtered, heated and mixed to form pulp, squeezed and dried to form paper.
Recycling Concrete	Crushed using large machines and used aggregate.

Lesson	Memorised?
1. About Ceramics	<h1>32</h1>
2. Polymers	
3. Composite Materials	
4. Problems With Materials	
5. Recycling Materials	

9F Reactivity

1. Types of Explosion

Explosion	Sudden increase in volume of gas and huge transfer of energy to the surroundings.
Physical Changes	Changes where no new substances were made.
Chemical Reaction	Changes where one or more new substances are made.
Flammable	A substance that catches fire easily.
Reactants	The starting substances-written on left of word equation.
Products	The new substances made-written on right of word equation.
Gas Pressure	The force gas particles exert by hitting the walls of the container they are in.
Increasing Gas Pressure	<ul style="list-style-type: none"> • Increasing number of particles • Decreasing size of container • Increasing temperature

2. Reactivity

Reactivity Series	List of metals in order of reactivity
Metals & Water	React to form metal hydroxides and hydrogen. <i>sodium + water → sodium hydroxide + hydrogen</i>
Metals & Acids Word Equation metal + acid → salt + hydrogen <i>magnesium + sulfuric acid → magnesium sulfate + hydrogen</i>	
Naming Salts	The first word in the salt is the metal the second depends on the acid used.
Hydrochloric Acid	Forms salts ending in chloride
Sulfuric Acid	Forms salts ending in sulfate

Nitric Acid	Forms salts ending in nitrate
Metals & Oxygen	React to form metal oxides <i>Zinc + oxygen → zinc oxide</i>
Oxidation	Reaction in which a substance gains oxygen.

Reactivity Series

Metal	Reaction with oxygen in air	Reaction with cold water	Reaction with dilute acid
potassium			
sodium		✓✓✓	
lithium		✓✓	✓✓✓
calcium		✓✓	✓✓✓
magnesium		✓	✓✓
aluminium	✓✓✓	•••	✓✓
zinc	✓✓	•••	✓✓
iron	✓✓	•••	✓
tin	✓	•••	✓
lead	✓	•••	✓
copper	✓	X	X
mercury	•••	X	X
silver	•••	X	X
gold	X	X	X
platinum	X	X	X



Key

explosive	can catch fire	✓✓✓ reacts very quickly
✓✓✓ reacts quickly	✓ reacts	••• slow or partial reaction
X no reaction		

Rust	Formed by the corrosion of iron and steel.
Preventing Rust	Use a barrier such as paint/plastic/oil to keep away air/water
Sacrificial Protection	More reactive metals are attached to react with water & oxygen instead of the iron.

3. Energy and Reactions

Oxygen	Often needed in many chemical reactions that cause explosions.
Oxidising Agent	A substance that provides oxygen to oxidise another substance.

	Oxidising The hazard symbols for substances which are oxidising.
Potassium Nitrate	Oxidising agent mixed with powdered charcoal to make gunpowder.
Oxygen Test	Oxygen will relight a glowing splint.
Surface Area	Small pieces of solid have a greater surface area over which a chemical reaction can occur. Explosives react more quickly if the solid fuel is broken into tiny pieces.
Energy	Cannot be created or destroyed only transferred and stored.
Exothermic Reactions	Energy stored in the reactants is transferred to the surroundings. <i>e.g. combustion, neutralisation</i>
Endothermic Reactions	Energy is transferred from the surroundings to the reactants <i>e.g. thermal decomposition</i>
Hydrocarbon	Compound containing only hydrogen and carbon. <i>e.g. methane (CH₄)</i>

4. Displacement

Displacement Reaction	Reaction where a more reactive metal displaces (takes the place of) a less reactive one.
Displacement Reaction Word Equation Aluminium + iron oxide → aluminium oxide + iron	
Thermite Reaction	Displacement reaction between aluminium and iron oxide.
Energy	Thermite reaction needs an input of energy by lighting a fuse.

Thermite Reaction Uses	Used on a large scale to join two sections of railway track as molten iron runs into the gap and solidifies.
Solutions	Displacement reactions also occur in solutions. <i>e.g. zinc in copper sulfate</i>

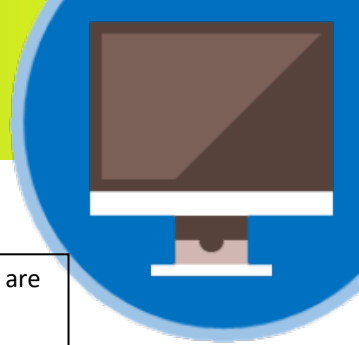
5. Extracting Metals

Native State	When a metal is found in the Earth as an element.
Ore	Rock that contains enough of a metal/metal compound to be worth mining.
Extracting Iron	Iron is found as iron oxide. Oxygen is removed by heating with carbon.
Extracting Iron Word Equation Iron oxide + carbon → iron + carbon dioxide	
Reduced	When a substance has lost oxygen.
Electrolysis	Used to extract reactive metals (e.g. aluminium) from their ores using electricity.
Extracting Aluminium Word Equation Aluminium oxide → aluminium + oxygen	
Potassium - Aluminium	Extracted through electrolysis
Zinc - Copper	Extracted by heating with carbon.
Silver-Platinum	Found in native state.

Lesson	Memorised?
1. Types of Explosion	
2. Reactivity	
3. Energy & Reactions	
4. Displacement	
5. Extracting Metals	



Computer Science Knowledge Organiser



COMPUTING SYSTEMS

Modern computer systems receive an input, process that data and then produce an output. The data can be stored in memory. They are designed to automate any process by a program. To execute programs that operate on data.

Computing systems need a **processor, memory, and storage**. Modern systems also rely heavily on **communication** between them.

Modern computer systems receive an input, process that data and then produce an output. The data can be stored in memory. They are designed to automate any process by a program. To execute programs that operate on data.

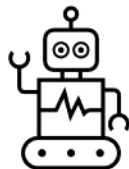
Communication Computing systems exchange information and form networks
Programs and data are transferred between computing systems, when required.

Artificial Intelligence (AI)

"AI has by now succeeded in doing essentially everything that requires 'thinking' but has failed to do most of what people and animals do 'without thinking' – that, somehow, is much harder!"
Donald Knuth, author of *The Art of Computer Programming*, in **1981**
Programming computers to learn from experience



Machine Learning



Hardware Components

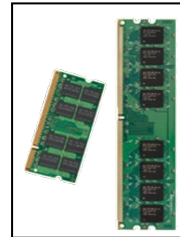
CPU – Central Processing Unit
It is known as the 'brains of the computer' that processes program instructions

An instruction may:

- Perform arithmetic or logic operations on data
- Perform input/output of data
- Control program flow



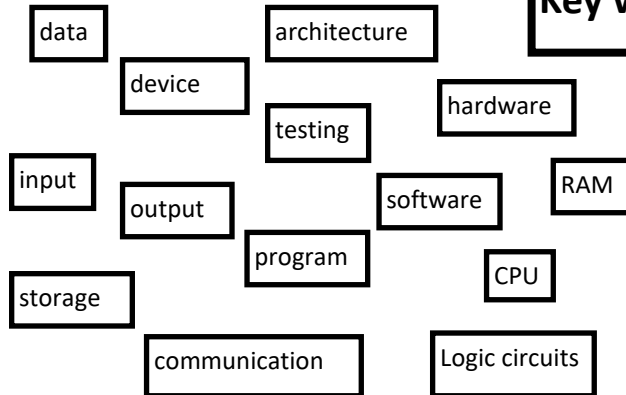
The **storage** (secondary memory) is the set of components that **stores** programs and data.
Storage is **persistent**: it retains its contents when the power is off.



Volatile (RAM) - Only stores information to run programs when computer is on

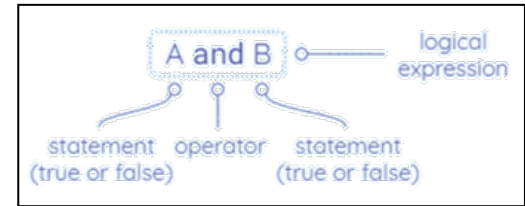
Non-volatile (ROM) - retains data even when the computer is switched off

Key words



Logical Operators

Logical operations operate on statements that are **true or false**. There are three basic logical operations. AND OR NOT



Logical expressions — **logic circuits** can be represented using diagrams

Logical operations — **logic gates** can be represented using symbols



AND



OR



NOT

Operating Systems

All hardware needs an operating system. It is responsible for managing the hardware and providing an environment for programs to run in.

It manages: Files, Hardware, software, memory

Examples: IOS, Windows, Android, MacOS, Linux

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Computer Science Knowledge Organiser



Binary – Data Representation

Key Words	
Binary number	A number system that contains two symbols, 0 and 1. Also known as base 2
Base 2	A number system where there are only 2 digits to select from. 0 – 1 as this is all binary can understand.
data	Units of information. In computing there can be different data types, including integers, characters and Boolean. Data is often acted on by instructions.
Denary (also known as decimal)	The number system you use. It contains 10 unique digits 0 to 9. Also known as decimal or base 10
Base 10	The number systems that we/humans use. Numbers 0-9 as it can make any number combination from that.



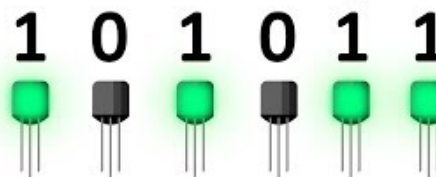
Binary Rules	Carry
$0 + 0 = 0$	0
$0 + 1 = 1$	0
$1 + 0 = 1$	0
$1 + 1 = 0$	1

Conversion table	128	64	32	16	8	4	2	1
Example binary number	0	0	0	1	0	1	1	1

0 → OFF
1 → ON



Binary!



Representing information with sequences of symbols, is necessary for storing, exchanging and processing information. Information in computers must be represented in a form convenient for processing.



Humans have invented lots of different ways to code information using different sounds, symbols or even lights!

Computers represent all data, including numbers, letters, symbols, images, videos and sounds using binary numbers. All binary numbers are made up of the digits 0 and 1.

0s and 1s are called binary digits, or bits. All characters are represented using sequences of bits.

Computers only use the two symbols 0 and 1 because all computers are built out of electrical switches which can only be on (1) or off (0).

ASCII – American Standard Code for Information Interchange

ASCII is a character set that uses numeric codes to represent characters. These include upper and lowercase English letters, numbers, and punctuation symbols.

Example: a capital "T" is represented by 84, or 01010100 in binary.

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HTML

Key Words	
World Wide Web	Collection of webpages connected together by hyperlinks, using the Internet (Usually shortened to WWW)
Internet	A global network of computers all connected together
Webpage	A hypertext document connected to the world wide web
Website	A collection of webpages with information on a particular subject
Web browser	The software which displays a webpage or website on a computer
Uniform Resource Locator (URL)	An address that identifies a particular file or webpage on the internet
HTML	Hyper Text Mark-up Language – describes and defines the content of a webpage
Web script	A type of computer programming language used to add dynamic features to a webpages
Multimedia	Content that uses a combination of different types of media – for example, text, audio, images
Hyperlink	A link from a hypertext document to another location, activated by clicking on a highlighted word or image
Hotspot	An area on a computer screen which can be clicked to activate a function, especially an image or piece of text acting as a hyperlink
Navigation	The elements of a website that allows the user to move around the website. This is usually in the form of a menu or hyperlinked text or buttons
JPG	The main file type used for mages on the world wide web – uses lossy compression
PNG	Another type of image file used on the world wide web – supports transparency and uses lossless compression

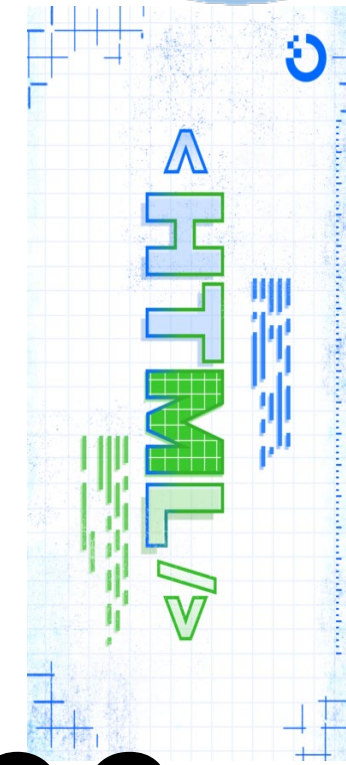
Definitions: What does it do?	
<html>	Root of a HTML document
<body>	Contents of the page
<head>	Information about a page
<title>	Table title/defines title
<h1>,<h2>,<h3>	Headings
<p>	Paragraph
	Image
<a>	Anchor (used in hyperlinks with href)
, 	Order/unordered list
	List item
<table>	Creates and defines table
<tr>	Table row
<td>	Table data
	Bold
 	Linebreak
<div>	Divider
<!-- -->	Comment

```

<!DOCTYPE html>
<html>
<head>
<title>My First Webpage</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
    
```



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Computer Science Knowledge Organiser

Year 8 Intro to Python

Python is a **text based programming language**. That can be used to create programs, games, applications and much more!

A **program** is a set of precise instructions, expressed in a **programming language**. **Translating** the programming language is necessary for a machine to be able to **execute** the instructions.

To execute a Python program, you need a **Python interpreter**.

This is a program that translates and executes your Python program.

A **selection** statement allows a computer to **evaluate** whether an **expression** is 'true' or 'false' and then perform an action depending on the outcome.

Arithmetic operators

+ addition
- difference
* multiplication
/ division
// integer division

Key terms

selection

algorithm

iteration

sequence

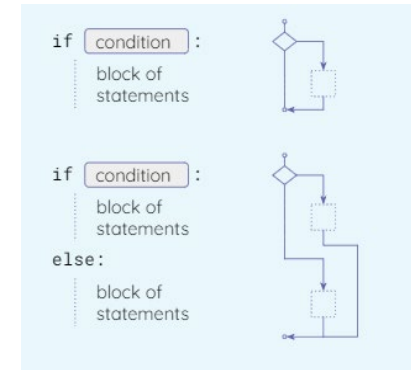
logical operators

input

variable

Arithmetic

output



You can use multiple branches using if, elif and else

Python helps by telling the programmer where the error is. So if you see red error text—read it first.

Keywords	
Variable	Stores a value/data – Can be changed during the program
Float (FLOAT)	Decimal point
Integer (INT)	Whole number
Boolean (BOOL)	True or False
String (STR)	Letters, numbers, symbols inside speech marks
Data types	The different data that can be stored in a variable
Sequence	A set of instructions or rules that an algorithm uses have to be in the right order.
Syntax Error	A syntax error is a mistake in your Python program that prevents it from running (executing). Syntax errors are like spelling/grammar errors or logic error

Some common syntax errors in selection

- use if and else—no capitals
- A colon : is always required after the condition and after else.
- Use **indentation** to indicate which statements 'belong' to the if block and the else block.
- The == operator checks for equality.
- A single = is only used in assignments

Syntax Errors

All programming languages have rules for **syntax**, i.e. how statements can be assembled.

Programs written in a programming language must follow its syntax.

Programs with **syntax errors** cannot be translated and executed.



python™

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Computer Science Knowledge Organiser

YEAR 8

MOBILE APP



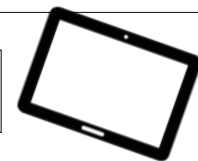
Key Words	
abstraction	Identify the important aspects to start with
algorithm	Precise sequence of instructions
Application (app)	Software designed to run on a mobile device
Computational thinking	Solving problems with or without a computer
debugging	Looking at where a program might have errors or can be improved
blocks	Scratch bricks that we can use to code algorithms
decomposition	Breaking down a problem into smaller parts
execute	A computer precisely runs through the instructions
GUI	Graphical User Interface
iteration	Doing the same thing more than once
selection	Making choices
sequence	Running instructions in order
variable	Data being stored by the computer

Sequence, selection and iteration are all processes. In order for computers to perform tasks there is more that is needed. For example a computer will take an **input** (this might be automatic or via human input) which the computer will then **process** and the **output** will be visible on the computer monitor.



A mobile application, most commonly called an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer.

App Lab is a **block or text based programming language**. This allows creation and sharing of apps.



The point of an app is to connect and interact with users. App creators tend to have an idea, a problem or a task that they want to develop user an app. These can be huge or relatively small ideas. **Decomposing** the problem helps us make the task less daunting and more achievable. This involves breaking down the task into smaller more manageable parts to start with.

Most computers have an environment with tiles, icons and/or menus. These allow users to interact. This type of interface is called the **graphical user interface (GUI)** because the user interacts with images through a mouse, keyboard or touchscreen. The GUI needs careful design consideration so that the user experience is a positive one so they want to continue to use it.

Making sure the app is successful and actually does what it was intended to do is important. Setting **success criteria** should be determined at the start of the project and can be revisited frequently. The success criteria should be clear and easy to follow.

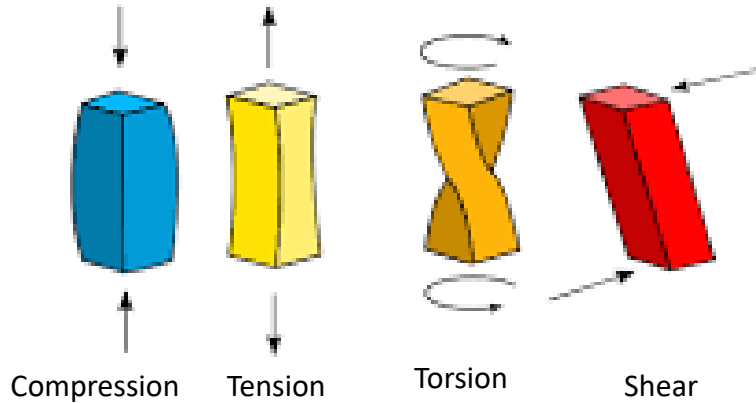
Evaluating and **debugging** allow for judging the quality of the app and enables errors to be corrected and improvements to be made.





Mechanical Properties

Tensile Strength	Material's resistance to the tension caused by pulling force.
Compressive Strength	Material's resistance to a crushing or squeezing force.
Shear Strength	Material's resistance to two parallel forces acting in opposite directions.
Torsional Strength	Material's resistance to a twisting force.



Strength	The ability of a material to resist a force applied.
Hardness	The resistance of a material to scratching and wear.
Toughness	The ability of a material to not break when a force is suddenly applied.
Malleability	The ease with which the shape of a material can be changed without the material breaking.

Physical Properties

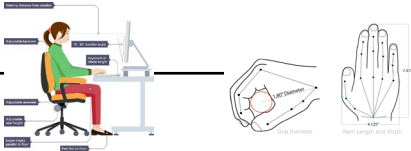
Density	The mass of a material per unit volume.
Electrical Conductivity	The ability of electricity to pass through a material.
Absorbency	The ability of a material to draw in moisture.

Design Specification – Key Questions

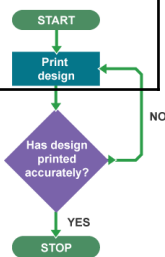
A	Aesthetics	What shape should the product be? What colour should be product be? What texture should the surface have?
C	Cost	What should the cost of the product be?
C	Consumer	Who is the client or the user of the product? What features of other similar products should it have? Does the client have any specific needs or wants for the product?
E	Environment	Should the product be made from recycled materials? How should the product be packaged? How will the product be disposed of when it is no longer needed?
S	Safety	What safety risks have to be considered? What safety standards must the product meet?
S	Size	How long, wide and tall should the product be? How much should the product weigh?
F	Function	What will the product be used for? How will it work? How should it be tested?
M	Materials and Manufacturing	What materials should the product be made from? Are there any limits on the sizes of the available materials? How many products need to be made? Which processes should be used to make the product?

Ergonomics and Anthropometrics

Anthropometrics is the practice of taking measurements of the human body and provides categorised data that can be used by designers. Anthropometrics help designers collect useful data, eg head circumferences when designing a safety helmet. In this example, as there is a large variation in size, the designer would need to build some adjustment into the safety helmet design.



Ergonomics can incorporate the use of **anthropometric data** when designing products to improve the user experience. If a designer doesn't use anthropometric data during the design process, it can lead to a poor user experience that causes discomfort, pain and potential injury. **Ergonomics** is a consideration that leads to a product being designed in a way to make it easy to use. Size, weight, shape, position of buttons and controls are all aspects that contribute to it being ergonomically designed.



How can we reduce our impact on the environment?

Use **renewable** materials rather than non-renewable means these can be replenished.

If non-renewable materials are used such as plastic (oil) **carbon emissions** are given off resulting in global warming.

Choosing **biodegradable** materials means they will break down naturally when the product comes to the end of its life. Non-biodegradable materials that have not been recycled will end up in the landfill or the sea damaging animals and habitats.

Apply the **6Rs** to ensure minimal impact on the planet.

Microcontrollers are programmable components that acts like a small computer within a single integrated circuit.

Peripheral Interface Controller **PIC** is a commonly used microcontroller

Flowchart program is a set of instructions laid out using flowchart symbols that tells a microcontroller what to do.

Advantages And Disadvantages Of Using Plastics

- Plastics are made from a **non-renewable** resources which cannot be replaced.
- Plastics are **non-biodegradable** and will not decay if disposed of in landfills or the the sea causing damage to animals and habitats.
- Not all plastics can be recycled.
- + Plastics are **strong** and **durable**.
- + Plastics come in a range of sizes and colours.
- + Plastics can be easily shaped.
- + Plastics are **insulators** and are **waterproof**.



The **Green Dot** does not necessarily mean that the packaging is recyclable, will be recycled or has been recycled.



The **Mobius Loop**. This indicates that an object is capable of being recycled, not that the object has been recycled or will be accepted in all recycling collection systems.







Age warning logo
This indicates the product is not suitable for under 3 year olds.

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Tools and Equipment	Name	<ul style="list-style-type: none"> • Use • Safety point
	Coping Saw	To cut wood Safety Rules when using it Work should be clamped in a vice
	Half Round File	Smoothing wood or Styrofoam Safety Work should be clamped in a vice
	Vice	Used to hold work in place Safety Allows work to be safely clamped while being cut or smoothed
	Pillar Drill	Used to drill holes in wood or plastic Safety You must wear goggles, an apron, tie your hair back, have the guard down and worked clamped securely

Computer Aided Design Computer Aided Manufacture

CAD	This is using computer software to draw and model a product. Examples: 2D Design, Photoshop, Macromedia Fireworks and Sketch Up Advantages: <ul style="list-style-type: none"> • Designs can be shared electronically • Accurate • Designs can be easily edited Disadvantages: <ul style="list-style-type: none"> • Software and training can be expensive • Security issues
CAM	This is using computer software to control machine tools to make products. Examples: Laser Cutter, 3D printer Advantages: <ul style="list-style-type: none"> • Faster • Complicated shapes are easily produced • Exact copied are easily made • Machines can run 24/7 Disadvantages: <ul style="list-style-type: none"> • High initial set up costs as CAM machines are expensive

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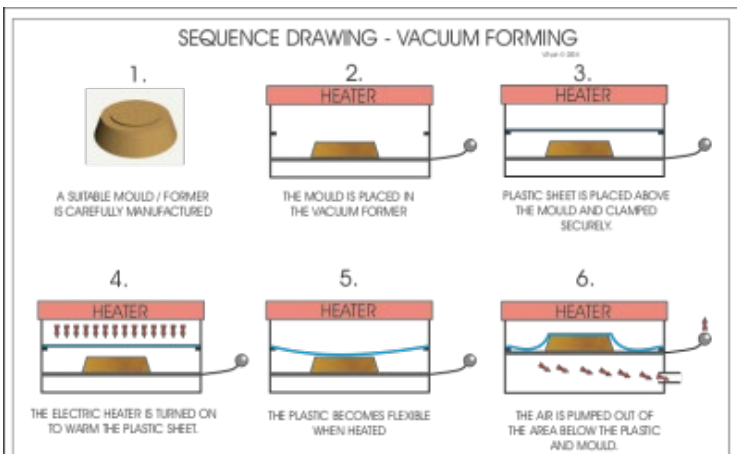


Most polymers are synthetic. This means they are man-made. They are usually made from crude oil which can be obtained by drilling underground or under sea level. Crude oil is a non-renewable resource- this means that it is not replaced as it is used.

Thermoplastic polymers can be reshaped when heated. They can also be recycled.

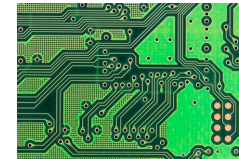
Thermosetting polymers cannot change shape when reheated and cannot be recycled. They have extra links between the individual chains of polymer. These links stop the chains being able to move, meaning that thermosetting polymers are typically stronger and more rigid than thermoplastics polymers.

Vacuum Forming is a process that uses heat and air pressure to shape a thermoplastic. It can be used to manufacture **blister packaging**.



Thermoplastic Polymers

Type	Properties	Uses
HDPE <i>High Density Polyethylene</i>	Strong and stiff	Pipes, buckets, bowls
PET <i>Polyethylene Terephthalate</i>	High strength and good toughness. Heat resistant	Drinks bottles and food packaging
HIPS <i>High Impact Polystyrene</i>	Reasonable strength and good toughness	Packaging
Acrylic	Can be transparent Hard wearing and tough	Plastic windows, bath tubs



Thermosetting Polymers

Type	Properties	Uses
Epoxy Resin	High strength, stiff and brittle Excellent temperature resistance	Printed circuit boards, cast electrical insulators
Melamine Formaldehyde	Strong, stiff and hard Resistant to many chemicals and stains	Laminate coverings for kitchen worktops
Urea Formaldehyde	Good strength, rigid and hard Warm to the touch	Plugs and plug sockets

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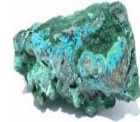


Metal sources

Ores are naturally occurring rocks that contain metal or metal compounds in sufficient amounts to make it worthwhile extracting them.



Iron ore is used to make iron and steel. Copper is easily extracted, but ores rich in copper are becoming more difficult to find.



Metals are grouped into the following categories or classifications:

- ferrous** - contain iron, rust easily and are magnetic, eg iron and steel
- non-ferrous** - do not contain iron, do not rust and are not magnetic, eg copper and aluminium
- alloys** - a mixture of more than one metal, eg bronze or brass.



Environmental impact

When considering the ecological and social implications of using metal, its non-renewable nature is the main concern. Metal cannot be grown and is a finite resource - there is only a certain amount within the Earth's crust.

Steel is made in huge and exceedingly hot cauldrons. Its production uses a lot of energy and contributes approximately 5 per cent of the world's greenhouse gas emissions.



Ferrous metals

	Strength and weaknesses (properties).	Uses
Cast iron	Cheap to produce, easy to cast, is rigid, has high compressive strength, machines and absorbs vibrations well, has low tensile strength, it is brittle and cannot be forged	Pans, brake discs, large castings
High-carbon steel (tool steel)	Hard but brittle, less malleable than mild steel, good electrical and thermal conductivity	Taps and tools, eg screwdrivers and chisels
Low-carbon steel (mild steel)	Ductile and tough, easy to form, braze and weld, good electrical and thermal conductivity but poor resistance to corrosion	Nuts, bolts, screws, bike frames and car bodies

Non Ferrous metals

	Strength and weaknesses (properties).	Uses
Aluminium	Light in weight and malleable but strong, a good conductor of heat and corrosion resistant	Drink cans, saucepans, bike frames
Copper	An excellent electrical conductor of heat and electricity, extremely malleable and can be polished, oxidises to a green colour	Plumbing fittings and electrical wires, professional chef's saucepans
Silver	A precious metal that is soft and malleable when heated, highly resistant to corrosion and an excellent electrical conductor of heat	Jewellery

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Food Technology Knowledge Organiser

8 Tips for Eating Well

To grow and be healthy we need to eat a variety of foods. We should choose more of some and less of others:

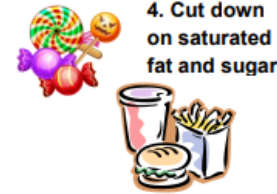
1. Base your meals on starchy foods



2. Eat lots of fruit and vegetables



3. Eat more fish: Including 1 portion of oily fish / week



4. Cut down on saturated fat and sugar

5. Try to eat less salt: no more than 6g a day for adults



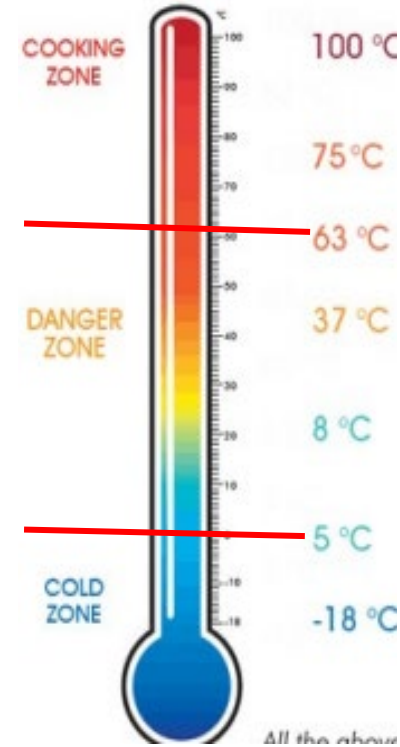
6. Get active and try to be a healthy weight



7. Drink plenty of water



8. Don't skip breakfast



Danger zone: because microorganisms multiply quickly at this temperature 5°C to 63°C

Fridge: 0°C to 4°C

Freezer: -18°C to -23°C

Microorganisms are dormant below 5°C.

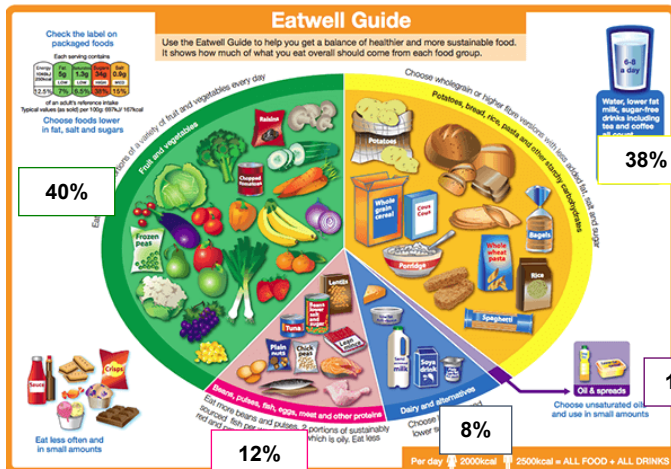
Above 63°C they are killed.

Reheat foods :75°C

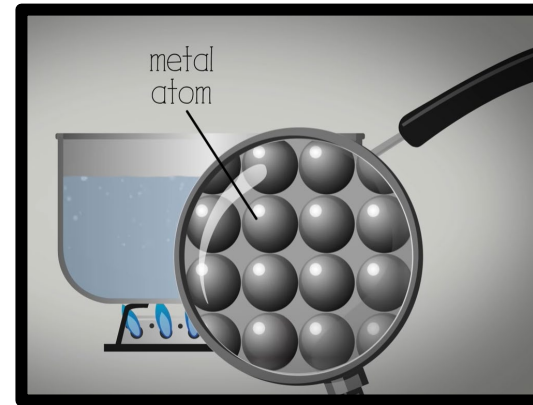
Key Words

Microorganisms- Mould, Yeast. Bacteria
 Fermentation-Yeast+FATTOM= Carbon dioxide and Alcohol
 Pathogens: Bad bacteria
 Salmonella-raw meat, poultry, eggs, unpasteurised milk
 Listeria- Soft cheeses, ready meals, pates, deli meats
 Campylobacter-raw meats, unpasteurised milk and contaminated water

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Why food is cooked:

1. To make it safe to eat
2. To improve the shelf life
3. To develop flavour
4. To improve texture
5. To give variety

Methods of heat transfer

Convection - when the environment (air, water or oil) is heated up.

- e.g. - baking a cake
- boiling an egg

Conduction - when heat is transferred directly.

- e.g. - frying an egg

Radiation - when heat radiates

- e.g. - toast

Functional and chemical properties of ingredients in cake and bread making

Cupcakes

Self raising flour	Make the cake rise, Structure, dextrinises –add colour
Caster sugar	Sweetness, aeration
Margarine	Makes the cake moist, aeration
Egg	Binds mixture



Bread

Strong flour	Structure, Gluten stretches helps bread rise and sets shape
Yeast	Produce CO2 when all conditions provided so makes bread rise.
Water	Binds ingredients, provides moisture for yeast.



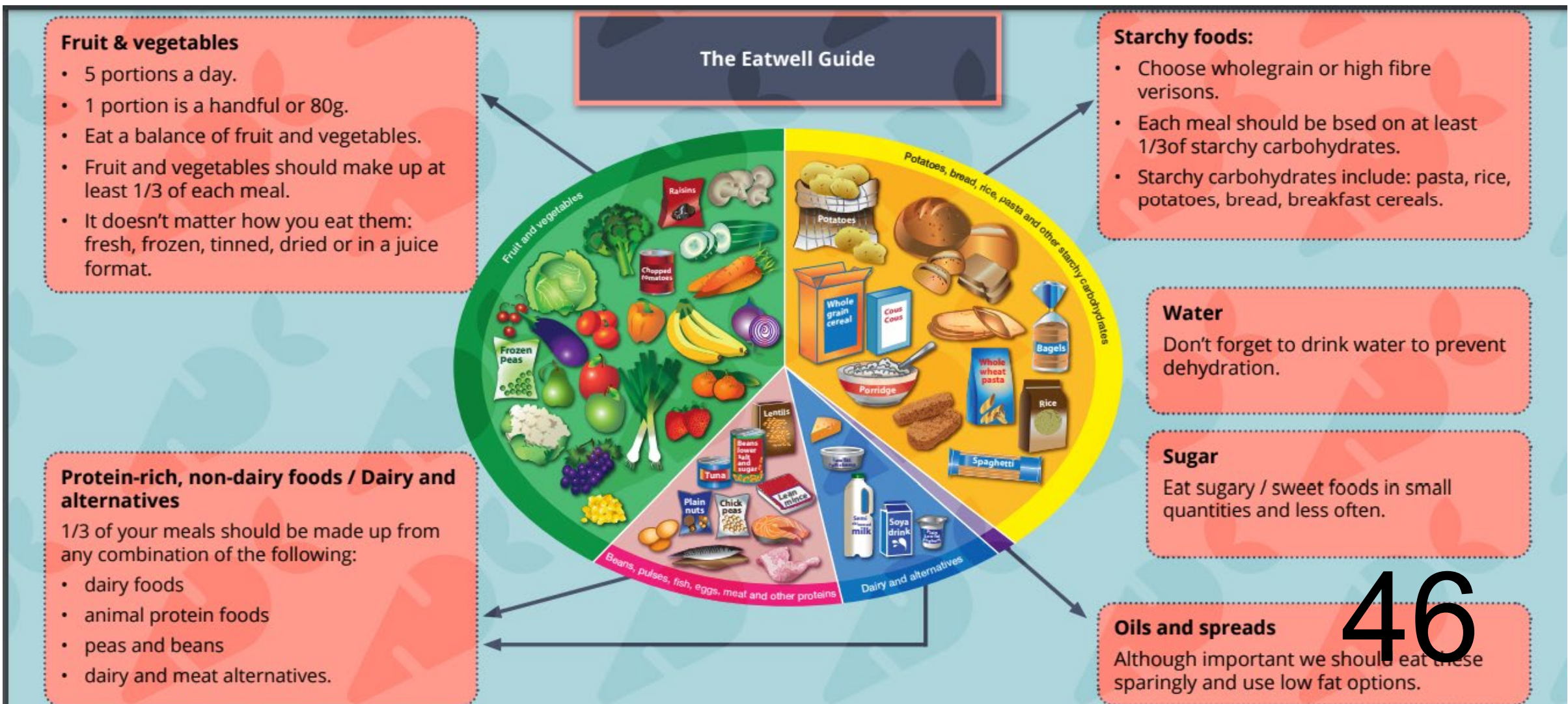
Effect of cooking on protein

Protein denaturation:
the process of altering a protein's molecular characteristics or properties

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Protein Coagulation:
The process of turning a liquid into a solid

Example:
Egg

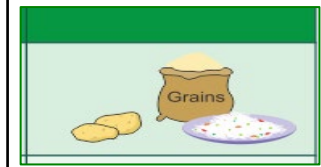




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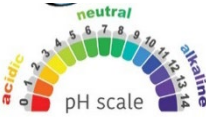

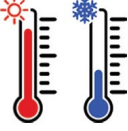


Nutrient	Functions	Sources
Protein	Growth – known as the body's building blocks.	Animal products – meat, fish, dairy; plants – lentils, nuts, seeds
Carbohydrates	Source of energy. Divided into: simple carbohydrates – sugars and complex carbohydrates – starches and dietary fibre. Starches provide slow releasing energy and add bulk	complex – bread, pasta, rice, potatoes (chose wholemeal versions for fibre and potato with the skin)
Fats	Source of energy. Four types: monounsaturated, polyunsaturated (omega 3 and 6), saturated and trans fats. Fats are stored under the skin and are essential for health. Too much fat can cause health problems	Monounsaturated – olive oil, avocados; polyunsaturated – oily fish, nuts, sunflower oil, soya beans; saturated – full-fat dairy, fatty meats; and trans fats – many snack foods
Vitamin	Essential for many processes, eg bone growth, metabolic rate, immune system, vision, nervous system. Need small amounts only.	A – dairy, oily fish, yellow fruit; B – vegetables, wholegrain cereals; C – citrus fruit, broccoli, sprouts; D – oily fish, eggs, fortified cereals
Minerals- Calcium	Essential for many processes, eg bone growth/strength, nervous system, red blood cells, immune system. Need small amounts only	Calcium – milk, canned fish, broccoli; iron – watercress, brown rice, meat; zinc – shellfish, cheese, wheatgerm; potassium – fruit, pulses, white meat



Food Technology Knowledge Organiser

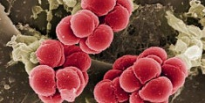


Conditions for Microorganism growth (FATTOM)

<p>F</p> 	<p>Food-Food provides energy and nutrients for bacteria to grow. High risk foods particularly protein foods such as chicken and dairy products are rich in nutrients and moisture and so promote bacterial growth.</p>
<p>F</p> 	<p>Acid-Most bacteria reproduce best at a neutral pH level of 7. Acidic foods with a pH below 7, or alkaline foods with a pH above 7, may stop or slow down the rate of bacterial growth.</p>
<p>A</p> 	<p>Time- If provided with the optimum conditions for growth, bacteria can multiply to millions over a small period of time via binary fission. This is when a bacterium divides in two every 20 minutes.</p>
<p>T</p> 	<p>Temperature-Bacteria need warmth to grow. The temperature a food is stored, prepared and cooked at is crucial. If this is not followed correctly then the food will not be safe to eat. The optimum temperature range for bacterial growth is between 5-63°C. This is known as the danger zone as it is dangerous for some foods to be in this temperature range for prolonged periods of time.</p>
<p>T</p> 	<p>Oxygen-Microorganisms that that require oxygen to grow are called aerobic such as most yeast.</p>
<p>O</p>  <p>M</p>	<p>Moisture-Bacteria need moisture in order to grow. This is why they grow on foods with high moisture content such as chicken. Foods that are dehydrated or freeze-dried can be stored for much longer as the moisture has been removed.</p>

Yeast, Mould, Bacteria (Bad bacteria are known as Pathogens)

Some Pathogens that causes Food Poisoning:

- *Campylobacter-Raw or undercooked meat, particularly raw poultry
- Unpasteurised milk
- Untreated water. 
- *E. coli-Raw or undercooked meat and poultry or related products (eg gravy)
- Raw seafood products
- Unpasteurised milk or products made from it (eg cheese)
- Contaminated water
- *Listeria-Unpasteurised milk or products made from it
- Soft cheeses (eg camembert, brie)
- Ready-to-eat foods (eg pre-packed sandwiches, pâté, deli meats)
- Unwashed vegetables contaminated with soil
- *Staphylococcus aureus-humans carry this in their nose and throat and can be transmitted by coughing or sneezing. Ready-to-eat foods that are hand-made (eg sandwiches)
- Cooked meats, Unpasteurised milk and related products.
- *Salmonella-raw or undercooked poultry and meat, eggs and unpasteurised milk

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Satchel:one log in guide



satchel:
one

How to Log into satchel:one

1. At the Log in Screen, Click 'Sign in with Office 365'

Login [Forgot password?](#)

Staff Parent Student

Sale High School

Enter email address or username

Enter password

Log in

Or log in with:

Sign in with Office 365

Sign in with Google

Sign in with RM Unity

2. Type in your school email address.

Sign in to your account - Profile 1 - Microsoft Edge

https://login.microsoftonline.com/common/oauth2/authorize?re...

Microsoft

Sign in

No account? [Create one!](#)

Can't access your account?

Next

Sign-in options

Terms of use Privacy & cookies

Your School Email Address is made up from the year you started Highschool,

Year Started	School Year
23	7
22	8
21	9
20	10
19	11

Follow this with your first initial, second name, and the school domain address (@salehighschool.org.uk)

e.g: 21BDrake@salehighschool.org.uk

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Satchel:one log in guide



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3. Enter your password.
This is a six digit number.
(Your teachers can give you)



← 21BDrake@salehighschool.org.uk

Enter password

password

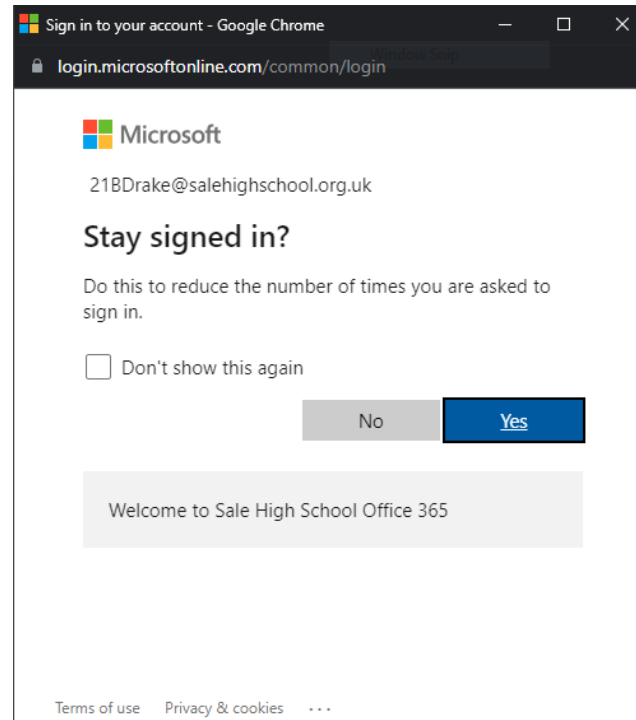
[Forgot my password](#)

Sign in

Welcome to Sale High School Office 365

4. Finally, Office 365 asks about signing in.

Yes can be pressed if your log in is from your phone or own computer.



Logging into Satchel:one in this way is the same on all devices:
PC, Laptop, Tablet, iPad, and Phone.



PLEASE BE PATIENT!

If you are on a mobile device (phone or tablet) Satchel often 'snaps' back to the original log in screen.

Wait for a few seconds and the system will change to your logged in account.

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