

Name:

Form:



'Knowledge is the food of the soul' - Plato

Year 9 Knowledge Organiser

Autumn

Every school day you should study 2 subjects from your KO (knowledge organiser), making sure to cover all the subjects you study.

You are to use your KO exercise book to show the work you have done. Each evening you should start a new page and put the date clearly at the top. You need to bring your KO and exercise book with you EVERY DAY to the academy.

You will also be tested in your lessons on knowledge from the KO.

You can use your KO and book in a number of different ways but you should not just copy from the Knowledge Organiser into your book. Use the '**How to self-test with the Knowledge Organiser**' booklet available on the school website which you can access using the QR code to the right. An instructional video on how to use your Knowledge Organiser is also available on the school website.



There are some more ideas and strategies listed below:

- Ask someone to write questions for you
- Write your own challenging questions and then leave it overnight to answer them the next day
- Create mind maps
- Create flashcards
- Put the key words into new sentences
- Look, cover, write and check
- Mnemonics
- Draw a comic strip of a timeline
- Use the 'clock' template to divide the information into smaller sections. Then test yourself on different sections
- Give yourself spelling tests
- Definition tests
- Draw diagrams of processes
- Draw images and annotate/label them with extra information
- Do further research on the topic
- Create fact files
- Create flowcharts

Presentation

You should take pride in how you present your work, each page should be clearly dated at the top left hand side with Subject 1 written in the middle. Half way down the page a line should divide it in two with Subject 2 written above the dividing line. Each half of the page should be neatly filled with evidence of self-testing. There should be an appropriate amount of work. Remember the **PROUD** system should still be followed in your exercise book.



Do something for another person this half term every week. Don't wait for them to ask you to do it, pay attention to their needs and find something to brighten their day. Who knows, you may find that the kindness comes back around to make your day better...

Random acts of kindness

Covey's 7 habits of highly effective teens

Habit #1
BE PROACTIVE
 You're in charge of yourself

- I have a "can do" attitude and always try my best at everything I do.
- I follow directions and do the right things without being asked, even when nobody is looking.
- I choose my actions, attitudes, and moods and don't blame others for my wrongdoing.

Our Values:

Dreaming big
 Rewarding effort
 Leading together
 Respecting each other and our world
 Learning that inspires

British Values – 1. Democracy



Democracy

a government which is elected by the people. Everyone who is eligible to vote has a chance to have a say in who runs the country.

Anarchy

a condition of lawlessness brought about by the absence of a government.

Communism

a government which owns things like businesses and farms. It provides its people's healthcare, education and welfare.

Monarchy

a country is governed by a king or queen. In some traditional monarchies, the monarch has absolute power. In a constitutional monarchy, like the UK, the democratically elected government limits the monarch's control.

Dictatorship

a country is ruled a single leader. The leader has not been elected and may use force to keep control. In a military dictatorship, the army is in control.

The Dirty Thirty

1. accommodation	16. minute
2. beautiful	17. necessary
3. because	18. neighbour
4. beginning	19. nervous
5. believe	20. opportunity
6. business	21. persuade
7. ceiling	22. queue
8. decided	23. queueing
9. definitely	24. quiet
10. disappear	25. quite
11. disappointed	26. receive
12. embarrass	27. separate
13. extremely	28. sincerely
14. friend	29. surprised
15. immediately	30. until

Shade in the words when you have completed the tasks for that Word of the Week!



Social	Devastation
Capitalism	Infiltration
Industrial	Sustainability
Civilisation	Resources
Revolution	Migration
Environment	Conservative
Casualties	Adaption
International	Confidant

1. What is the definition of the word for this week? Can you write it in your own words? (This will help you remember and understand it)

2. Can you use that word in a sentence? Make sure it makes sense.

3. Can you list some synonyms for this word? (Meaning the same)

4. Can you list some antonyms for this word? (Meaning the opposite)

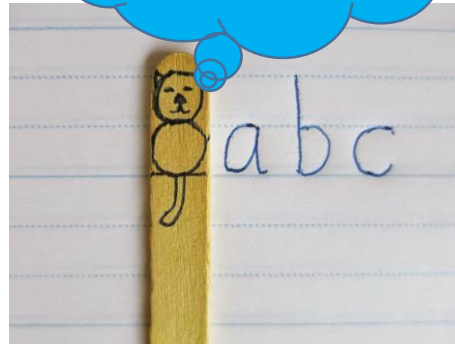
5. Draw out the word making it look like its meaning (examples below).



Step 1:
Practice writing the letter on its own for one line.

Step 2:
On the next line join up your letter in groups of 5.

Remember the different levels of letters.



Step 3:

Write out the sentences below making sure your vowels are accurate.

- Dad sees a cop at the stop sign.
- The excited elephant bounced on its huge feet.
- I felt a sense of joy knowing I was back at school.
- The quick brown fox jumped over the sleepy dog.

2. Keeping the pen on the paper, curve back to the left and down to the base line forming an oval by going back up to just beyond the white dot.

3. Change direction and continue with a vertical stroke down to the base line.

1. Start the approach stroke on the line going up and over to the white marker dot.

4. Complete the letter by curving up from the base line, ready to make another join.

1. Start the approach stroke on the line flowing diagonally right, up towards the edge of the darkest shading.

2. Keeping the pen on the paper, curve back round to the left and down to the base line, forming part of an oval.

3. As you reach the base line, make a small curve up towards the right.

2. Keeping the pen on the paper, change direction by making a vertical stroke down to the base line with a small curve to the right.

3. Complete the letter by dotting the 'i'.

1. Start the approach stroke on the line going up to the edge of the darkest shading.

1. Start the approach stroke on the line going up and over to the white marker dot.

2. Keeping the pen on the paper, curve back to the left and down to the base line forming an oval by going back up to the white dot.

3. Complete the letter by going along the top of the darker shading with a short horizontal stroke to the right.

2. Keeping the pen on the paper, change direction by making a vertical stroke down to the base line with a curve to the right.

3. Repeat the procedure by continuing up from the base line to the edge of the darkest shading.

1. Start the approach stroke on the line going up to the edge of the darkest shading.

4. Complete the letter with a vertical down stroke to the base line with a small curve to the right.

When should you use a capital letter?

- ✓ Is it the **start of** (first letter of first word) a **sentence**? ✓ **capital**
- ✓ Is it a **proper noun** (name of a specific person, place, group, company etc.)? ✓ **capital**
- ✓ Is it the **start (first letter) of dialogue**? ✓ **capital**
- ✓ Is it the pronoun **I**? ✓ **capital**
- ✓ Is it an **abbreviated** brand, company or organisation? ✓ **capital**
- ❖ Is it **NOT** any of the above? **NO capital**

the cat waited on the wall in
 goole a man walked past and
 his name was bob he stroked
 the cat then left a dog saw the
 cat and licked its lips he
 chased the cat down the street
 luckily the cat got away

1. Copy out the passage correcting all the capital letter mistakes. Circle the mistakes you have corrected.

2. Write a short diary entry about something you did over the summer. Make sure your capital letters are correct. Circle the capital letters you have used.

3. Using the capital letter rules opposite, create a page to revise the rules. Use colours! This will help you remember them.

4. Play the Wordspector game!



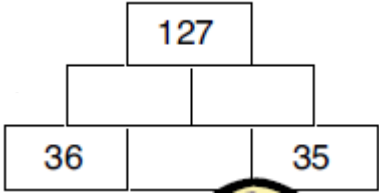
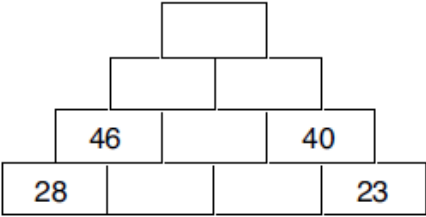
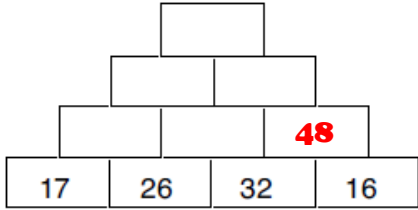
5. Play the Grammar Ninja game!



Year 9 Numeracy

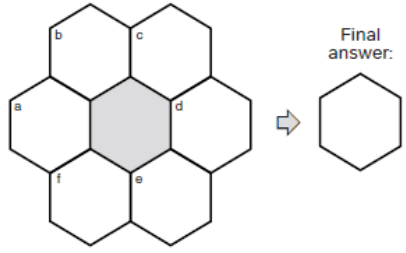
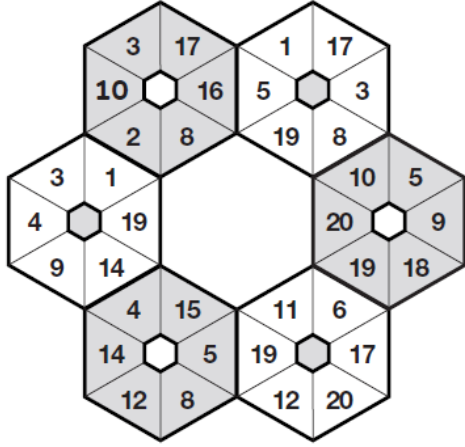
x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Cross out any times tables you know off by heart.
 To learn the others, choose two or three and test yourself on remembering them.
 Get other people to test you on them too!

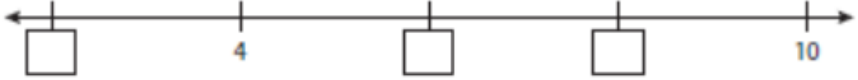
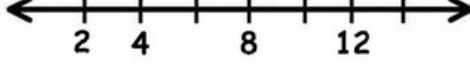
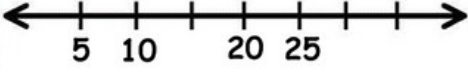
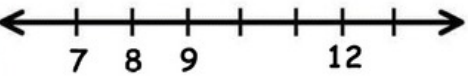


Fill in the blanks in the addition pyramids

Puzzled? In each 6-number hexagon, find the number that is the sum of 2 other numbers. Use all 6 sums to create 1 final puzzle and solve.



Fill in the blanks for each numberline



Year 9 Numeracy

Number	Double it	Halve it	Times by 10	Times by 5	Times by 6
6	12	3	60	30	36
2					
3					
5					
8					
80					
16					
4					
12					

$$2 \times \text{Mt Fuji} = 30$$

$$2 \times \text{Cherry} = 20$$

$$2 \times \text{Blue Whale} = 8$$

$$\text{Mt Fuji} + \text{Cherry} + \text{Blue Whale} = ?$$



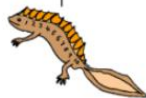
How many different sums could this picture represent?
 We've found 5. Can you find more?

Try to work out the missing numbers.
 See if you can spot any links between your answers...

Put a circle around each pair of numbers that add to make ten

6	2	1	8	9	4
4	3	8	7	6	0
7	5	6	3	2	10
5	1	9	4	8	7
8	2	7	3	9	2
0	10	5	1	8	4

See if you can find at least 10 pairs!



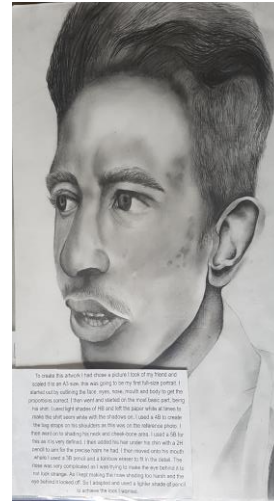
Easy	15	x 3	+ 1	÷ 2	- 8	x 2	- 9	x 5	- 5	÷ 2	?
Moderate	15	- 8	x 5	- 13	x 8	- 24	÷ 2	50% of this	÷ 2	Square it	?
Advanced	46	÷ 2	+ 11	- 4	60% of this	÷ 2	Square root of this	x 8	- 9	x 8	?

GCSE Art and Design – Unit 1 60%

<p>Assessment Objective 1</p>	<p>Develop their ideas through investigations informed by contextual and other sources demonstrating analytical and cultural understanding. (Finding out about inspirational art and using it to influence your own work.)</p>
<p>Assessment Objective 2</p>	<p>Refine their ideas through experimenting and selecting appropriate resources, media, material, techniques and process. (Experimenting with media and techniques, improving your skills and visual ideas so you can devise a final idea.)</p>
<p>Assessment Objective 3</p>	<p>Record their ideas, observations and insights relevant to their intentions in visual and/or other forms. (Thinking about the theme, making observations, annotating work and collecting resource material.)</p>
<p>Assessment Objective 4</p>	<p>Present a personal, informed and meaningful response demonstrating analytical and critical understanding, realising intentions and, where appropriate, making connections between visual, written, oral or other elements. (Completing a relevant and intentional final piece.)</p>



Focus on facial features and discover the best ways to capture emotion.



Pencil drawing of the full face looking at form, tone and adding all the fine details.

Artists to research

Francis Bacon

Wes Namen

Jenny Saville

Carne Griffiths



Use of colour, mood, form, tone, and line.



Emotions used in portraiture by artists.



Select an artist and be influenced by their style and technique to drive forward individual ideas forward.



Experiment with different media and techniques to discover the best method of creating a final response.

An individual final response to the theme of Emotive Portraiture incorporating the artist research and media experiments.



In this photograph I have created a complete distortion of my friends face. This is to explore the different types of 'portraits' I can produce and to explore the distortions I can do - as I want it to be an aspect of my final piece. I imported a photo and used the Polygon selection tool to enlarge the eyes and lips of my friend.

	Sole Trader	Partnerships	Franchise
Definition	Individual who owns and runs their own business	Is where 2 to 20 people own the business	When a company buys the rights to trade under an existing name
Control	Is with the individual who owns the business	'Sleeping partners' invest but do not run, partners that run share control 'Deed of Partnership' outlines responsibilities	Stores is owned and run by owner with control at the franchisor
Decisions	Owner can decide working hours, what to do with profit & who to employ	Each partner shares in decision making	Between franchisee and franchisor depending on contract
Liability	Unlimited – they are responsible for everything. They could lose their home and assets	Partners have unlimited liability	Franchisor is liable
Setup	Easy with little capital (money) required	Partners invest their own money together	Easy to set up a long as the franchisor agrees
Benefits	All profit goes to you Easy to setup You are the boss All competitors can't see your accounts Highly motivated	Risks & Responsibilities are shared More specialist skills Simple & flexible Competitors can't see your accounts Easier to raise finance than sole trader	It is still your own business Franchisee gets advice, support and training No industry expertise is required in most cases Easier to build a customer base
Drawbacks	Unlimited liability Limited Finance Difficult to find cover if you are ill Few specialist skills – buy in expertise	Unlimited liability Arguments can occur between partners If partner dies, resigns or goes bankrupt the partnership dissolves Trust becomes significant element between partners	Have to pay substantial initial fees and ongoing royalties Profit is shared with franchisor Need to earn more profit Damage to name impacts on all associated
Example	Newsagents	Solicitors, Accountants	McDonalds

Market Segmentation

Type of Market Segmentation	Market is split into different categories in order to identify different types of consumer
Demographic Segmentation	Splitting the market based on income, job, age, occupation & lifestyle
Geographic Segmentation	Splitting the market based on where people live e.g. region, cities or neighbourhoods
Behavioural Segmentation	Splitting the market based on the way they use or interact with a product

Benefits of Market Segmentation

- Ensures customer needs are matched and met
- Potential for increasing profits
- Increased customer retention
- Allows for targeted marketing
- Potential for an increase in market share

Examples of age and gender segmentation used at Lego



What you need to remember for the exam

- Be able to **recall** the different types of market segmentation
- Be able read a scenario and decide what type of market segmentation the business has used
- **Explain** how you could segment a particular product
- Explain the benefits to a business of segmenting customers
- **Recall** and **explain** why customers are different and why this leads to businesses segmenting their customers

How customers vary

- Benefits they want from the product/service
- Amount of money they are able/willing to pay
- Quantity they want to buy
- Quality
- Time and location they wish to purchase

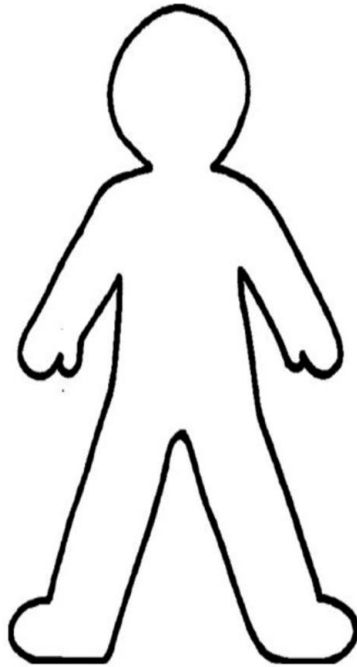
1. Key words to practice spelling

- Still image
- Transition
- Facial expression
- Body language
- Role-play
- Narration
- Thought-track
- Characterisation
- Physical Theatre
- Slow motion
- Dynamics
- Physicality
- Marking the moment
- Symbolism
- Conscience Alley
- Cross-cutting
- Communicate
- Stimulus
- Intention
- Style
- Genre
- Stanislavski
- Emotion Memory
- Circles of Attention
- Tempo-Rhythm
- Given Circumstances

2. Complete a 'Role on the wall'.

Instructions: Select a character you have been exploring. Write facts about the character around the outside of the figure and write emotions on the inside.

Extension: Justify the facts or emotions by adding lines of dialogue or a description of the body language/facial expression used.



Useful links



3. Activities that will help your understanding of the topic.

1. Research Ruth Ellis' case.
2. Research a typical trial for justice. What happens in a trial? Who is involved?
3. Create a 140-character tweet in response to 'Should hanging be stopped?'

4. Writing in role.

Write from the point of view of your character to demonstrate your understanding.

Instructions: When you write in-role, you write as if you are the character. Try to do at least one piece of in-role writing for a character each half term - it helps you understand them better and *imagine* what it's like to be them.

Examples of in-role writing include:
 diary entries
 letters
 notes
 emails
 Speeches



Was/Were

- o I was
- o He was
- o She was
- o It was
- o You were
- o We were
- o They were



There/Their/They're

1. Does "they are" fit? They're
2. Does it show belonging? Their
3. If not, then it should be about place or existence There

Apostrophes for contraction

Apostrophes replace missing letters, so which letters do I take out?



I am

where is

can not

she will

I'm

where's

can't

she'll



Sonnet 43

How do I love thee? Let me count the ways.
 I love thee to the depth and breadth and height
 My soul can reach, when feeling out of sight
 For the ends of Being and ideal Grace.
 5 I love thee to the level of every day's
 Most quiet need, by sun and candlelight.
 I love thee freely, as men strive for Right;
 I love thee purely, as they turn from Praise.
 I love thee with the passion put to use
 10 In my old griefs, and with my childhood's faith.
 I love thee with a love I seemed to lose
 With my lost saints – I love thee with the breath,
 Smiles, tears, of all my life! – and, if God choose,
 I shall but love thee better after death.

ELIZABETH BARRETT BROWNING

Key Quotations:

- The opening line 'How do I love thee?' suggests an intimate conversation between lovers.
- 'Depth', 'breadth' and 'height' are weighty concepts which suggest her love is comprehensive and allows her to reach impossible extremes.
- Poem of comparisons – 'Most quiet need' and 'men strive for Right' are two very different ideas. One is simple and one is complex showing the intensity of her feelings.
- Replaced her faith in God with her love for her husband – 'lost saints'.
- Final words – 'I love thee better after death' suggests even death will not part them. Their love is eternal.

Context:

- Elizabeth Barrett Browning's brother drowned at a young age and as a result her father was very over-protective. She eloped against his wishes with the poet, Robert Browning, showing how important love was to her.
- Elizabeth's Barrett Browning's father disinherited her after she married Robert Browning.

Structure:

- Browning uses repetition of 'I love thee'. This sounds similar to a prayer so therefore she could be praying/hoping that someday they will be able to be together.
- At the beginning of the poem she makes references to her love being limitless and she also reinforces this at the end in the last line 'I shall but love thee more after death.'
- Sonnet 43* is the length of a traditional sonnet (14 lines) but doesn't follow the traditional sonnet rhyme scheme. There are rhyming couplets yet the poem avoids a perfect rhyme scheme. Perhaps this reflects their relationship – unconventional but with close unity.

Energy

Energy security means having a reliable, uninterrupted and affordable supply of energy available. Energy insecurity can be experienced by countries with both a high and low energy consumption. Technology is increasing energy consumption.

Physical	Economic
<ul style="list-style-type: none"> Geology determines the availability of fossil fuels. Climate variations will affect the potential use of renewable energy. Natural disasters can damage energy infrastructure. 	<ul style="list-style-type: none"> Cost of extracting fossil fuels is becoming costly and difficult. Price of fossil fuels are volatile to potential political changes. Infrastructure for energy is costly, especially for LICs.
Technology	Political
<ul style="list-style-type: none"> New technology is making once difficult energy sources now reachable/exploitable. 	<ul style="list-style-type: none"> Conflict and turmoil in energy rich countries can affect exports. Stricter regulations over Nuclear.

Impact of Energy Insecurity

Sensitive environments	Food production
Exploration of energy resources threatens to harm sensitive areas such as the oil drilling in Alaska, USA.	Food production depends on the energy needed to power machinery and transport goods to different markets.
Energy conflict	Industry
Shortages of energy resources can lead to tensions and violence. Conflict can be caused by fear of energy insecurity.	Countries can suffer from shortfalls in energy leading to a decline in manufacturing and services.

Increasing Energy Supply

Non-renewables

Fossil Fuels - Conventional power stations can be made more efficient with carbon capture overcoming the environmental impacts.

Nuclear - Once a nuclear plant is built it can provide a cheap and long-term dependable source of energy.

Renewables

Wind, Solar, Biomass - These are examples of environmentally friendly renewable sources that can't run out but cost a lot to install.

Arctic - Drilling for oil

The Arctic in the northern hemisphere holds 90 million barrels of oil.

Reasons for Exploitation

Improving energy security.
Providing enough fuel for transport.
Keep prices of oil low.

Reasons against exploitation

Exploitation is expensive.
Arctic ecosystems are at risk
Political issues and conflict could occur

C.S. UK Fracking

Fracking is used to extract natural gas trapped in underground shale rock. It is a method considered by the UK.

Advantages

- Estimated to create 64,000 jobs.
- UK has large shale gas reserves.
- Is far cheaper than natural gas.

Disadvantages

- May cause groundwater pollution
- Is a non-renewable resource.
- May trigger minor earthquakes.

Sustainable Energy Supply

This involves balancing supply & demand. It also includes reducing waste & supporting the environment.

Home design - Building homes to conserve energy. i.e. roof insulation.

Reduce demand - Changing attitudes towards energy used to save energy.

Efficient technology - Making cars more efficient by improving engine design and weight. i.e. Hybrid engines.

Transport - Using public buses & bikes.

GCSE PE (9-1)

HEALTH

Understand the three areas of health; Physical, Social and Emotional.
Be able to explain the different elements of Health

LIFESTYLE CHOICES

Understand how Lifestyle choices can positively/negatively affect our health.

SEDENTARY LIFESTYLE

Understand the health implications of living a sedentary lifestyle.

SEDENTARY LIFESTYLE	HEALTH IMPLICATIONS	
<p>'A Lifestyle that is seriously lacking in physical activity'</p> <p>Little/No Physical Activity.</p>	<ul style="list-style-type: none"> • Weight Issues – Being Overweight, Being Overfat, Being Obese. • Depression • Coronary Heart Disease • High Blood Pressure 	<ul style="list-style-type: none"> • Diabetes • Risk of Osteoporosis • Lack of Muscle Tone/Poor Posture



Year 9 PE



PHYSICAL	EMOTIONAL	SOCIAL
<p>Fight off Illnesses such as Type II Diabetes/Strokes/Heart Attacks.</p> <p>Increased Cardiovascular Fitness (to be able to perform for longer)</p> <p>Increased Muscular Strength and Endurance</p> <p>Body Composition – Weight Control to prevent developing conditions such as Type II diabetes.</p>	<p>Feeling good – produces serotonin</p> <p>Relieving Stress & Tension – take our minds of our daily stresses</p> <p>Increasing Self-Esteem and Confidence – completing an activity, gives us a sense of achievement.</p> <p>Enjoyment – participating because you find it fun.</p> <p>Emotional Challenge – Pushing ourselves to overcome a difficult task</p> <p>Aesthetic Appreciation – Understand the beauty of the performance.</p>	<p>Co-Operation – working together to achieve a common goal (team work)</p> <p>Developing Friendships and Mixing Socially – Joining clubs means mixing with different people. Therefore making new people and developing friendships.</p> <p>Gaining a Good Attitude – Learning how to respect people and win/lose gracefully.</p>

LIFESTYLE CHOICES

Diet – Controls our weight, provides us energy, provides the body with nutrients, calorie intake vs calorie expenditure (weight loss/gain)

Activity Level – People think of excuses to not participate, but it is important they do. Being active prevent us from being ill (heart attacks, strokes etc)

Recreational Drugs – Legal and Illegal Drugs. Legal Drugs (Caffeine, Nicotine, Alcohol). Illegal Drugs (Heroin, Cocaine, Cannabis, Ecstasy) Drugs have a negative effect on our health and can ultimately lead to death.

Smoking & Nicotine – Smoking is highly addictive, this increases the amount people smoke. The addictive ingredient is nicotine and is a stimulant which raises alertness. Smoking is extremely dangerous and can cause heart disease and lung cancer.

Alcohol – Alcohol is a depressant and slows down reactions. Drinking alcohol with sport is dangerous and is banned in sporting activities where it is a safety risk. E.g. motor sports/shooting.

Work/Sleep/Rest – Exercise helps you sleep better, and deeper. However you shouldn't exercise too late as you may be too energised to sleep. Rest is important to allow our body to repair and recover.

La famille Family members

les parents	parents
le père	father
la mère	mother
le beau-père	stepfather/father-in-law
la belle-mère	stepmother/mother-in-law
le mari	husband
la femme	wife
les enfants	children
le fils	son
la fille	daughter
le frère	brother
la sœur	sister
le demi-frère	half-brother, stepbrother
la demi-sœur	half-sister, stepsister
le beau-frère	brother-in-law
la belle-sœur	sister-in-law
les grands-parents	grandparents
le grand-père	grandfather
la grand-mère	grandmother
les petits-enfants	grandchildren
le petit-fils	grandson
la petite-fille	granddaughter
l'oncle (m)	uncle
la tante	aunt
le cousin/la cousine	cousin

Les adjectifs de personnalité Personality adjectives

Il/Elle est ...	He/She is ...
agaçant(e)	annoying
arrogant(e)	arrogant
amusant(e)	amusing, funny
bavard(e)	talkative, chatty
charmant(e)	charming
content(e)	happy
fort(e)	strong
impatient(e)	impatient
impoli(e)	impolite
indépendant(e)	independent
intelligent(e)	intelligent
marrant(e)	funny
méchant(e)	nasty/mean
têtu(e)	stubborn, pig-headed

En ville In town

la boîte de nuit	night club
le bowling	bowling alley
le café	cafe
le centre commercial	shopping centre
le cinéma	cinema
les magasins	shops
la patinoire	ice rink
la piscine	swimming pool
la plage	beach
le théâtre	theatre
dans	in
derrière	behind
devant	in front of
entre	between

Quand? When?

aujourd'hui	today
demain	tomorrow
ce/demain matin	this/tomorrow morning
cet/demain après-midi	this/tomorrow afternoon
ce/demain soir	this/tomorrow evening
lundi matin	on Monday morning
samedi soir	on Saturday night

Les questions Questions

Quand?	When?
Avec qui?	With who(m)?
On y va comment?	How are we getting there?
On se retrouve où?	Where shall we meet?
On se retrouve à quelle heure?	At what time shall we meet?



Ma description physique My physical description

J'ai les cheveux ...	I have ... hair
courts/longs	short/long
raides/bouclés/frisés	straight/curly
noirs/bruns/blonds	black/brown/blond
roux/gris/blancs	red/grey/white
J'ai les yeux ...	I have ... eyes
bleus/verts	blue/green
gris/marron	grey/brown
J'ai ...	I have ...
des lunettes	glasses
des boutons	spots
une moustache/une barbe	a moustache/a beard
Je suis ...	I am ...
petit(e)/grand(e)	short/tall
de taille moyenne	of average height
mince/gros(se)	thin/fat

Les amis Friends

l'ami (m)/le copain	(male) friend
l'amie (f)/la copine	(female) friend
le petit ami/le petit copain	boyfriend
la petite amie/la petite copine	girlfriend
Je retrouve mes amis au parc.	I meet up with my friends in the park
Je traîne en ville avec mes copines.	I hang out in town with my (female) friends.
Je tchatte en ligne avec ma (female) friend.	I chat online with my best meilleure copine.
Avec mon petit ami, j'écoute de la musique.	I listen to music with my boyfriend.
Je passe chez ma petite copine.	I go to my girlfriend's house.
On rigole bien ensemble.	We have a good laugh together.
On regarde un film ou des clips vidéo.	We watch a film or music videos.
On joue au foot ou au basket ensemble.	We play football or basketball
On discute de tout.	We talk about everything.
On mange ensemble au fast-food.	We eat together at a fast-food restaurant.



Quizlet

Use Quizlet to revise any of these vocab lists using games, self-testing, flashcards and many other effective methods!



L'amitié Friendship

Je pense que ...	<i>I think that ...</i>
Pour moi, ...	<i>For me ...</i>
À mon avis, ...	<i>In my opinion ...</i>
Un(e) bon(ne) ami(e) est ...	<i>A good friend is ...</i>
compréhensif/-ive	<i>understanding</i>
cool	<i>cool</i>
drôle	<i>funny</i>
fidèle	<i>loyal</i>
généreux/-euse	<i>generous</i>
gentil(le)	<i>kind</i>
honnête	<i>honest</i>
modeste	<i>modest</i>
optimiste	<i>optimistic</i>
patient(e)	<i>patient</i>
sensible	<i>sensitive</i>
sympa	<i>nice</i>
Un(e) bon(ne) ami(e) ...	<i>A good friend ...</i>
écoute mes problèmes/ mes secrets	<i>listens to my problems/ secrets</i>
discute de tout avec moi	<i>talks about everything with me</i>
aide tout le monde	<i>helps everyone</i>
accepte mes imperfections	<i>accepts my faults</i>
respecte mes opinions	<i>respects my opinions</i>
a les mêmes centres d'intérêt que moi	<i>has the same interests as me</i>
a le sens de l'humour	<i>has a sense of humour</i>



Les rapports en famille Family relationships

Je m'entends bien avec ...	<i>I get on well with ...</i>
Je me dispute avec ...	<i>I argue with ...</i>
Je me chamaille avec ...	<i>I bicker with ...</i>
Je m'amuse avec ...	<i>I have fun with ...</i>
Je m'occupe de ...	<i>I look after ...</i>
le frère aîné/cadet	<i>older/younger brother</i>
la sœur aînée/cadette	<i>older/younger sister</i>
Il/Elle est/a l'air/semble ...	<i>He/She is/looks/seems ...</i>
dynamique	<i>lively</i>
égoïste	<i>selfish</i>
jaloux/-euse	<i>jealous</i>
sévère	<i>strict</i>
timide	<i>shy</i>
travailleur/-euse	<i>hard-working</i>

Les mots essentiels High-frequency words

très	<i>very</i>
assez	<i>quite</i>
mais	<i>but</i>
ou	<i>or</i>
où	<i>where</i>
hier	<i>yesterday</i>
d'abord	<i>first of all</i>
puis	<i>then</i>
ensuite	<i>next</i>
après	<i>afterwards</i>
plus tard	<i>later</i>
le soir	<i>in the evening</i>

La personne que j'admire The person I admire

Comment s'appelle la personne que tu admires?	<i>What is the name of the person you admire?</i>
Mon héros s'appelle ...	<i>My hero is called ...</i>
Mon héroïne s'appelle ...	<i>My heroine is called ...</i>
Mon modèle s'appelle ...	<i>My role model is called ...</i>
C'est qui?	<i>Who is he/she?</i>
C'est un pilote de Formule 1.	<i>He is a Formula 1 driver.</i>
C'est un scientifique.	<i>He is a scientist.</i>
C'est une actrice.	<i>She is an actress.</i>
C'est une créatrice de mode.	<i>She is a fashion designer.</i>
Fais-moi sa description physique.	<i>Describe for me what he/she looks like.</i>
Il/Elle est petit(e)/gros(se), etc.	<i>He/She is ... small/fat, etc.</i>
Il/Elle a les cheveux bruns, etc.	<i>He/She has brown hair, etc.</i>
Quelle est sa personnalité?	<i>What is his/her personality?</i>
Il/Elle est ...	<i>He/She is ...</i>
travailleur/-euse/créatif/-ive	<i>hard-working/creative</i>
Pourquoi est-ce que tu admires cette personne?	<i>Why do you admire this person?</i>
J'admire (Stromae/Malala, etc.) car il/elle ...	<i>I admire (Stromae/Malala, etc.) because he/she ...</i>
a travaillé très dur	<i>worked/has worked very hard</i>
a joué dans beaucoup de films	<i>acted/has acted in lots of films</i>
a gagné beaucoup de courses	<i>won/has won lots of races</i>
a donné de l'argent aux bonnes œuvres	<i>gave/has given money to good causes</i>
a lutté contre ses problèmes	<i>fought/has fought his/her problems</i>
J'aimerais être comme lui/elle.	<i>I would like to be like him/her.</i>



Une sortie An outing

J'ai contacté un copain/une copine.	<i>I contacted a friend.</i>
J'ai quitté la maison.	<i>I left the house.</i>
J'ai raté le bus.	<i>I missed the bus.</i>
Je suis allé(e) en ville.	<i>I went into town.</i>
J'ai écouté de la musique.	<i>I listened to music.</i>
J'ai retrouvé mon/ma copain/e.	<i>I met up with my friend.</i>
J'ai discuté avec mon/ma copain/e	<i>I talked to my friend.</i>
J'ai mangé un sandwich.	<i>I ate a sandwich.</i>
J'ai acheté des vêtements.	<i>I bought some clothes.</i>
C'était super.	<i>It was great.</i>
J'ai passé une très bonne journée.	<i>I had a very good day.</i>

These are the two most useful verbs in French.

avoir	to have	être	to be
j'ai	I have	je suis	I am
tu as	you have	tu es	you are
il/elle/on a	he/she has; we have	il/elle/on est	he/she is; we are
nous avons	we have	nous sommes	we are
vous avez	you have	vous êtes	you are
ils/elles ont	they have	ils/elles sont	they are

On va sortir Going out

Je vais ...	<i>I am going ...</i>
aller à un match/au bowling	<i>to go to a match/the bowling alley</i>
aller au cinéma/à la piscine	<i>to go to the cinema/the swimming pool</i>
voir un spectacle	<i>to see a show</i>
faire du patin à glace/du skate	<i>to go ice skating/skateboarding</i>
faire les magasins	<i>to go shopping</i>
jouer à des jeux vidéo	<i>to play video games</i>
Tu veux venir?	<i>Do you want to come?</i>

Present tense –ER verbs

jouer = to play:

I play	Je joue	We play	Nous jouons
You play	Tu joues	You play	Vous jouez
He/she/one plays	Il/elle/on joue	They play	Ils/elles jouent

Present tense –RE verbs

répondre = to reply: (regular verbs)

I reply	Je réponds	We reply	Nous répondons
You reply	Tu réponds	You reply	Vous répondez
He/she/one replies	Il/elle/on répond	They reply	Ils/elles répondent

dire = to say: (irregular verbs)

I reply	Je réponds	We reply	Nous répondons
You reply	Tu réponds	You reply	Vous répondez
He/she/one replies	Il/elle/on répond	They reply	Ils/elles répondent

Present tense –IR verbs

finir = to finish: (verbs that take –ss)

I finish	Je finis	We finish	Nous finissons
You finish	Tu finis	You finish	Vous finissez
He/she/one finishes	Il/elle/on finit	They finish	Ils/elles jouent

partir = to leave: (verbs that don't take –ss)

I leave	Je pars	We leave	Nous partons
You leave	Tu pars	You leave	Vous partez
He/she/one leaves	Il/elle/on part	They leave	Ils/elles partent

Avoir

To have

I have	J'ai	We have	Nous avons
You have	Tu as	You have	Vous avez
He/she/one has	Il/elle/on a	They have	Ils/elles ont

Être

To be

I am	Je suis	We are	Nous sommes
You are	Tu es	You are	Vous êtes
He/she/one is	Il/elle/on est	They are	Ils/elles sont

Pronunciation Wizard



'e' at the end of words is not pronounced

'é' at the end of words is always pronounced (like ay)

to say 'è', open your mouth widely

'ç' is pronounced as 's'

's' and 'x' at the end of words are usually silent

'oi' combination is pronounced as 'wa'

'au' and 'eau' are pronounced as 'o'

'ou' is pronounced as 'oo'


'th' is simply pronounced as 't'

'h' at the beginning of words is not pronounced

at the end of words, 'er', 'ez' are pronounced as 'ay'

...and finally, take REALLY good care with these: 'r' and 'u'.

component 1 Human Lifespan Development

<u>A1 Growth and development across life stages</u>		<u>A2 Factors affecting growth and development</u>	
<u>Lifestages</u> <ol style="list-style-type: none"> 1. Infancy (0 – 2 years) 2. Early childhood (3 – 8 years) 3. Adolescence (9 – 18 years) 4. Early adulthood (19 – 45 years) 5. Middle adulthood (46 – 65 years) 6. Later adulthood (65+ years) 	<u>Holistic Development</u> <ol style="list-style-type: none"> 1. Physical development – Physical growth and physiological change 2. Intellectual development – Developing thinking and language skill and common activities that promote learning and development 3. Emotional development – Developing feelings about self and other 4. Social development – Forming relationships 	<u>1. Physical factors</u> <ol style="list-style-type: none"> a) Genetic inheritance b) Diet and lifestyle choices c) Experience of illness and disease d) Appearance 	<u>2. Economic factors</u> <ol style="list-style-type: none"> a) Income/ wealth b) Material possessions
		<u>3. Social, Cultural and emotional factors</u> <ol style="list-style-type: none"> a) Educational experiences b) Culture, e.g. community involvement, religion, gender c) Influence of role models d) Influence of social isolation e) Personal relationship with friends and family 	

Learning Aim B: Investigate how individuals deal with life events

<u>B1 Different types of life event</u>		<u>B2 Coping with change caused by life events</u>	
<u>1. Physical events</u> Accident/ injury Ill health	<u>3. Life circumstances</u> <ol style="list-style-type: none"> a) Moving house, school or job b) Exclusion from education c) Redundancy d) Imprisonment e) Retirement 	<u>1. How individuals adapt to these changes</u> <u>2. Sources of support</u> <ol style="list-style-type: none"> a) Family, friends partners b) Professional carers and services c) Community groups, voluntary and faith based organisations 	
<u>2. Relationship changes</u> <ol style="list-style-type: none"> a) Entering a relationship b) Marriage c) Divorce d) Parenthood e) Bereavement 		<u>1. Types of support</u> <ol style="list-style-type: none"> a) Emotional b) Information advice b) Practical help, e.g. financial assistance, childcare, transport 	

Key Terms

Life Stages: A number of distinct phase's people pass through during their lives.

What are PIES Developments?

P – Physical Development Gross motor skills and fine motor skills

I – Intellectual Development Language development – egocentric view of the world

E- Emotional Development Bonding with others

S- Social Development Interaction with others.

Gross Motor Skill: The ability to move and co-ordinate the movement of the large limbs of the body, e.g. crawling, walking, and climbing, running.

Fine Motor Skills: The ability to move and co-ordinate the movement of the hands and fingers, e.g. writing, painting, tying shoe laces, holding a spoon.

Language Development: The Process which children go through as they learn to communicate with others using words and speech.

Egocentric: Seeing things from only your own perspective or viewpoint.

Bond: To form an attachment with a parent or carer.

Growth: An increase in size, height and weight which can be measured.

Development: How the child gains skills and is able to control the actions their body makes

Self-Image The mental picture we have of ourselves. Some people see themselves in a positive light – for instance, intelligent, attractive and talented whereas other may see only negatives.

Self Esteem How much you like, accept and respect yourself – this is often talked about in terms of how much you value yourself.

BTEC Tech Health and Social Care component 1 Human Lifespan Development

Turn the body outline into you!
Label the body outline with the physical milestones that you went through as a young child.



Talk to an older family member about your language development throughout your life, e.g your first word, when you started talking in sentences etc.



Write down in a sentence, what you think language development is.

Now try and condense your sentence into 20 words.

Once you have done this, try and consider all the ways in which we communicate with one another e.g. non-verbal communication.

Key Terms

Oestrogen: A hormone produced in a woman's ovaries that controls the development of sexual characteristics and stimulates changes in the reproductive organs.

Testosterone: A hormone produced by the testes that controls the development of male sexual characteristics.

Abstract thinking: the ability to think about something that might not be there or even exist.

Peer Group: the social group a person belongs to which influences beliefs and behaviour.

Empathise: seeing things from another person's perspective.

Mid-life Crisis A dramatic period of self-doubt caused by the passing of youth and the move into later adulthood.

Menopause: The natural and permanent stopping of menstruation (Periods) occurring, usually between the ages of 45 and 55.

Dementia An illness that affects the brain and memory, gradually you lose the ability to think and behave normally.

Role Model: Someone whose behaviour and/or attitudes people try to copy because they admire them.

Gender Role: A role that is determined by a person's gender.

Manual Work: Work that requires the use of physical skills.

Non-manual work: work that depends primarily on mental skills.

Ideas about the causes of diseases – supernatural explanations

The church

- Supernatural = the belief that forces beyond the mortal world can control illness e.g. the devil, God, evil spirits.
- People had to pay a **tithe** (a sum of money) to the church which was partly used to care for the sick e.g. by 1500 there were 1,100 hospitals (30% run by the church).
- The church taught that charitable donations could help to heal disease – wealthy people saw donating to the church as a way of healing themselves.
- In times of **famine**, the church claimed it was sent to punish sinners; or to cleanse a person's soul of sin; or to test a person's faith.
- If people recovered, they claimed it was due to their prayers.
- **It was said that the Black Death in 1348 was sent to punish sinners.**
- **Leprosy** was mentioned in the Bible. It was believed to be a severe punishment for sin. It began as a painful skin disease, then paralysis and eventually death. They were unable to cure it.
- **Lepers** were banned from living with other people, they may move to leper houses (lazar houses). They were made to wear a cloak and ring a bell to announce their presence.

Astrology – basing diagnoses and treatments on the position of the planets

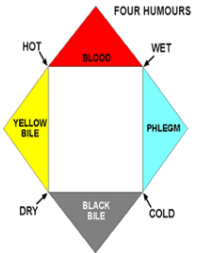
- A medieval **physician** (someone who practices medicine) may consult star charts; consider when a patient was born; and when they fell ill to work out what was wrong.
- After the Black Death, Astrology became more popular and gained church acceptance.
- Many people believed the Black Death was caused by the bad alignment of the planets.
- In 1345, there was an unusual positioning of the planets of Mars, Jupiter and Saturn which astrologers interpreted as a sign that something terrible would happen.



Ideas about the causes of disease and illness – natural explanations

The four humours – blood, phlegm, yellow bile (cholera) and black bile

- This idea originated with an Ancient Greek physician, **Hippocrates**. It was one of the longest surviving theories on causes of illness.
- It was supported by an Ancient Roman physician, **Galen**.
- It was based on the idea that the world was made up of 4 elements – **fire, water, earth and air** so the body was also made up of 4 liquids, or 'humours'.
- It was believed that all 4 humours must be balanced and equal. When the mix became unbalanced, you became ill and to preserve good health they must be kept in balance.
 - e.g. someone with a fever had a temperature due to having too much blood; someone with a cold had too much phlegm which is why excess phlegm would run out of their nose.
- Humours were linked to seasons e.g. winter was cold and wet = too much phlegm.



Theory of opposites

- Linked to the 4 humours was the theory of opposites.
- Galen believed that an imbalance in the humours could be treated with an opposite e.g. too much phlegm could be treated with hot peppers; a fever could be treated with a cucumber to cool them down.
- Galen theorised that the circulatory system circulated blood generated in the liver.
- Bloodletting was used to remove excess blood too, some died from this.

Bad airs – miasmas

- It was believed that impure airs could corrupt the body's humours. They believed that this impure air may have come from poisonous fumes released by an earthquake or volcano.

Natural treatments and prevention	Factors of continuity
<ul style="list-style-type: none"> • Bleeding and purging (forcing vomit) was used to correct an imbalance in the humours. Some physicians recommended strong smelling herbs like aloe and myrrh, some people carried herbs or flowers with them to their nose to avoid breathing in the bad airs. • Natural remedies e.g. mint tea to improve digestion. Bathing could help to open the pores and steam out impurities. Herbs might be added to the water. • Lighting a fire and boiling vinegar could drive off bad air, especially during the Black Death. • Physicians or surgeons sometimes lanced buboes, some people whose burst did survive. • Quarantine houses were setup during the Black Death where the plague had broken out – the occupants were locked in and nobody entered. Villages cut themselves off, they received goods left at posts outside the village and left payment in a bowl of vinegar. 	<ul style="list-style-type: none"> • The church accepted the ideas of Hippocrates and Galen. Their libraries kept copies of their H&G's books and monks copied them to be sold. • The church controlled knowledge as most people could not read or write and so people relied on the church for information, they only copied books that agreed with their ideas. • Dissections were difficult as the church taught that the body needed to be whole to go to heaven. It was only really criminals whose bodies were cut up, even though they showed some of H&G's ideas to be wrong, they believed this was because criminals' bodies were imperfect.
Prevention and treatment – religious/supernatural	Factors of change
<ul style="list-style-type: none"> • Confessing sins and praying could gain God's forgiveness. • Praying to God and fasting was a way to prevent becoming ill. • Going on a pilgrimage and making offerings to God could also prevent illness. • Self-flagellation (whipping yourself) was a way of punishing yourself so that God didn't. 	<ul style="list-style-type: none"> • Gutenberg's printing press (1440) did allow for more doctors to publish theories. • Some new ideas slowly began to be published. But the church took control of many printing shops and stopped books being published that disagreed with its theories.
Case Study – the Black Death, 1348-49	
<ul style="list-style-type: none"> • Main symptoms: buboes (a swelling in the armpit or groin filled with pus); victims die within 3-5 days. • 200 people were buried in London at its worst point. Around 1/3 to 1/2 of the English population were thought to have died. It returned every 10-20 years but killed fewer people each time. 	





Mood Board Knowledge Organiser

Extended Question Type 2— Evaluate a Mood board

10

Question 7 is based on Fig. 2

Fig. 2 is the first draft of a pre-production mood board for a television advert for the Summer Bank Holiday Sale. The advert will be shown on national television channels between programmes at prime-time viewing, before 9pm in the evening.



Fig. 2

11

7* Discuss the suitability of the mood board in Fig. 2 for the television advert. You should include any areas for improvement. [12]

The quality of written communication will be assessed in your answer to this question.

Create Questions

Marks awarded for:

- Identify target audience (usually a designer)
- Explain how suitable it is for the designer by talking about:
 - ⇒ The layout (Is there a title? Is it easy to follow?)
 - ⇒ Content—is it clear? Is it linked to the project?
 - ⇒ Different elements included?
 - ⇒ Are there any annotation included to explain or justify choices
 - ⇒ Is it fit for purpose, does it include all the content that a designer would need to understand the ideas?
- Always identify **STRENGTHS** and **WEAKNESSES**
- **SPaG** marks are given

Purpose of a mood board

It is a visual tool used to generate ideas for the look, colour and styles for a project. It can be used to collect ideas from different people.

Target Audience

The target audience for a mood board is the designers of a product. It helps them to see the ideas and styles in one place.

Foundation

Find the Meaning of these Key Words

Negative, product, prime factorisation, root, power, index, indices, integer, digit, decimal, operation, even, odd.

Laws of Indices

Rule	Example
$a^m \times a^n = a^{m+n}$	$2^5 \times 2^3 = 2^8$
$a^m \div a^n = a^{m-n}$	$5^7 \div 5^3 = 5^4$
$(a^m)^n = a^{m \times n}$	$(10^3)^7 = 10^{21}$
$a^1 = a$	$17^1 = 17$
$a^0 = 1$	$34^0 = 1$
$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$	$\left(\frac{5}{6}\right)^2 = \frac{25}{36}$
$a^{-m} = \frac{1}{a^m}$	$9^{-2} = \frac{1}{81}$

B Brackets	$10 \times (4 + 2) = 10 \times 6 = 60$
I Indices	$5 + 2^2 = 5 + 4 = 9$
D Division	$10 + 6 \div 2 = 10 + 3 = 13$
M Multiplication	$10 - 4 \times 2 = 10 - 8 = 2$
A Addition	$10 \times 4 + 7 = 40 + 7 = 47$
S Subtraction	$10 \div 2 - 3 = 5 - 3 = 2$

Find the Meaning of these Key Words

Simplify, expand, substitute, equation, formula, identity, factorise, terms, integer, fractional, index

Collect like terms

$$\underline{4a} + \underline{5} + \underline{2a} - \underline{3} = 6a + 2$$

Expand the brackets

$$2(x + 8)$$

$$2x + 16$$

$$6y(9 - y)$$

$$54y - 6y^2$$

Expand the brackets and simplify

$$12(4x + 8) - 6x$$

$$48x + 96 - 6x$$

$$42x + 96$$

$$7(a - 11) + 2(3 + a)$$

$$7a - 77 + 6 + 2a$$

$$9a - 71$$

Find the Meaning of these Key Words

Integers, operation, negative, significant figures, powers, roots, indices, reciprocal, BIDMAS, estimate, prime, factors, multiples, standard form, base 10, irrational, surds

indices

$$a^0 = 1 \quad a^{m/n} = (\sqrt[n]{a})^m$$

$$a^{-n} = \frac{1}{a^n} \quad a^{-1} = \frac{1}{a}$$

$$a^{1/n} = \sqrt[n]{a} \quad a^{1/2} = \sqrt{a}$$

Calculations with Standard Form (without calculator)

Multiply

$$(4 \times 10^6) \times (2 \times 10^3) = 8 \times 10^9$$

Divide

$$(4 \times 10^6) \div (2 \times 10^3) = 2 \times 10^3$$

Find the Meaning of these Key Words

Expressions, identity, equation, formula, substitute, term, index, power, collect, expand, bracket, factor, factorise, quadratic, linear, simplify, arithmetic, geometric, function, sequence, nth term, derive

Expand the brackets

F O I L
first outer inner last

$$(x + 8)(x + 5)$$

$$x^2 + 5x + 8x + 40$$

$$x^2 + 13x + 40$$

Solve $4x + 3 = 2x + 9$

Remove 2x by subtracting it from both sides.

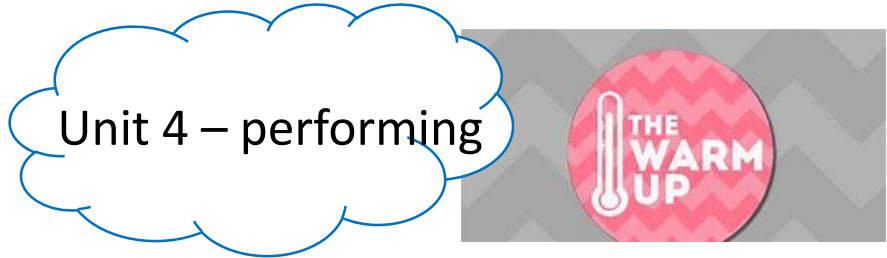
Here, $4x - 2x$ just leaves 2x

The equation is then solved just like a normal two-step equation.

$$\begin{aligned} 4x + 3 &= 2x + 9 \\ 2x + 3 &= 9 \\ 2x &= 6 \\ x &= 3 \end{aligned}$$

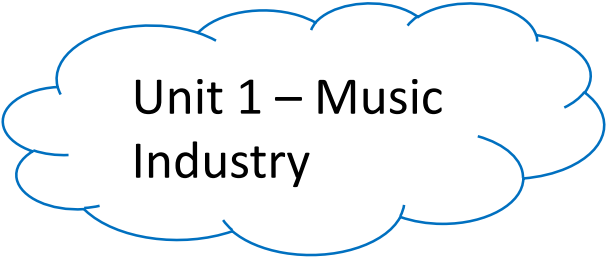
$$\begin{aligned} -2x \\ -3 \\ +2 \end{aligned}$$

PRACTISE PRACTISE PRACTISE!!! It is better to practise for 10 minutes every day rather than an hour once a week.



Learn a couple of warm ups that are suitable for your instrument. Memorise them so you can use them before you practise/perform

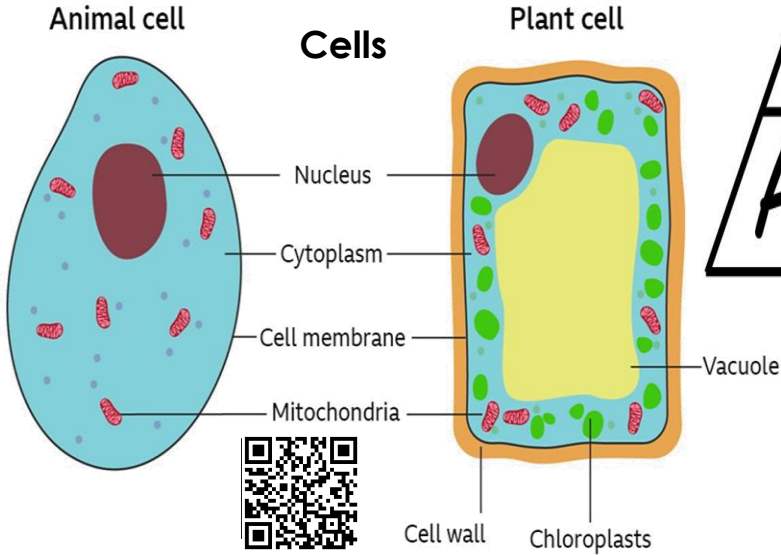
Create **MIND MAPS** for different job **roles** in **THE MUSIC INDUSTRY** (This website may be a good place to start)



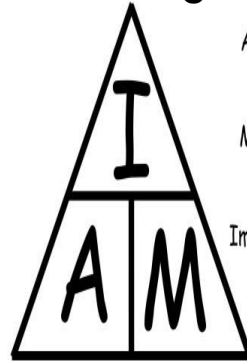
Find out the meanings of the following:
Performing Rights
Copyright
Royalties

AQA Biology – Cells

Cells



Magnification



$$\text{Actual Image} = \frac{\text{Image Size}}{\text{Magnification}}$$

$$\text{Magnification} = \frac{\text{Image Size}}{\text{Actual Image}}$$

$$\text{Image Size} = \text{Actual} \times \text{Magnification}$$

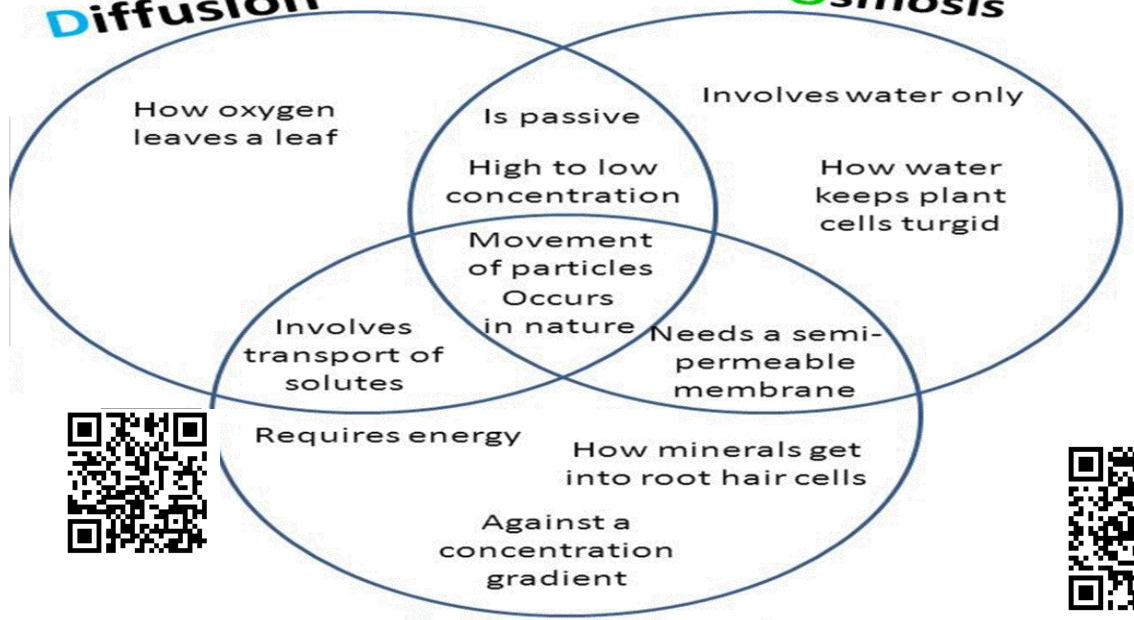


Specialised cells

<p>A root hair cell has a large surface area to absorb water and minerals easily.</p>	<p>A palisade cell has many chloroplasts for photosynthesis.</p>	<p>A white blood cell can change its shape to engulf microbes.</p>	<p>A sperm cell has a tail to swim.</p>
<p>A nerve cell has a long nerve fibre to carry messages to other cells.</p>			

- **Cell membrane** – this surrounds the cell and allows nutrients to enter and waste to leave it.
- **Nucleus** – this controls what happens in the cell. It contains DNA, the genetic information that cells need to grow and reproduce.
- **Cytoplasm** – this is a jelly-like substance in which chemical reactions happen.
- **Mitochondria** – these are the powerhouse of the cell. They are structures where respiration takes place.
- **Cell wall** - this is an outer structure that surrounds the cell and gives it support.
- **Vacuole** - this is a space within the cytoplasm of plant cells that contains sap.
- **Chloroplasts** - these contain chlorophyll and are the site of photosynthesis.

Diffusion Transport Osmosis



Summary

Active Transport

AQA Chemistry – Atomic structure

Elements, mixtures and compounds

Hydrogen gas is an element. As you can see above it is made up of molecules containing the same atom. Only one type of atom appears in hydrogen gas.

Water is a compound. It is made up of molecules with two different types of atoms.

Air is a mixture. It is made up of different elements and compounds.

The atom

Neutrons

Electrons

Mass number this is the number of neutrons and protons

4

2

He

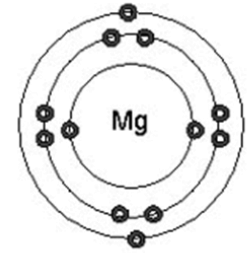
Helium

Protons:
This number lets us know how many protons there are. In a neutral atom this is also the same as the number of electrons.

Electron configuration

- The first shell can only contain 2 electrons
- The second shell can contain 8 electrons
- The third shell can contain 18 electrons

Electronic Structure Diagram



Electronic configuration: 2,8,2

History of the atom

460 Democritos

1803 Dalton

1897 Thomson

1912 Rutherford

1913 Bohr

1930 Modern Atom Teorisi

²³₁₂ **Mg**

12 protons this requires 12 electrons, the shell must be filled from the lowest energy (inner) shells first

	Relative Mass	Relative Charge
Proton	1	+1
Neutron	1	0
Electron	0	-1

Summary



AQA Chemistry – Periodic table



Interactive Periodic table



Development of the
Periodic table

Dalton

Newlands

ELEMENTS	
Hydrogen	1
Carbon	4
Oxygen	7
Phosphorus	9
Sulphur	16
Magnesium	12
Lime	28
Soda	23
Iron	56
Mercury	200

No.	No.	No.	No.	No.	No.	No.	No.
H 1	Li 3	B 5	Co & Ni 22	Br 35	Pd 46	I 127	Pt & Ir 195
He 2	Be 4	C 6	Cu 63	Zn 65	Ag 108	Cd 112	Os 190
Li 3	Mg 12	O 8	Ca 40	Sc 45	Ti 48	V 51	Cr 52
Be 4	Al 13	N 7	Y 88	Zr 91	Nb 93	Mo 96	Mn 55
B 5	Si 14	Ne 10	La 138	Hf 178	Ta 182	W 184	Pb 207
C 6	P 15	Ar 18	Pr 140	Rf 261	Ru 101	Rh 103	Bi 209
N 7	S 16	Kr 84	Sm 150	Db 262	Pd 106	Ag 108	Po 209
O 8	Cl 17	Xe 136	Eu 152	Sg 266	Cd 112	In 115	At 210
F 9	Ar 18	Rn 222	Gd 157	Bh 264	Hg 200	Tl 205	Fr 223

Group I	Group II	Group III	Group IV	Group V	Group VI	Group VII	Group VIII
Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe
Rb	Sr	Y	Zr	Nb	Mo	Tc	Cu
Cs	Ba	La	Hf	Ta	W	Re	Zn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hg

Mendeleev

Modern day

Periodic table																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Hydrogen	Helium																Neon
Lithium	Beryllium											Boron	Carbon	Nitrogen	Oxygen	Fluorine	Neon
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hl	Mc	Cn	Fl	Uue	Uub	Uut	Uuq	Uur	Uus	Uuo

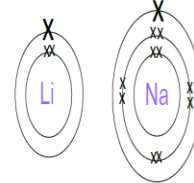
3
7
Li

Group 1 - The Alkali Metals

11
23
Na

Structure

All group one elements have **one electron** in their outer shell (**Valence electron**).



19
39
K

37
85
Rb

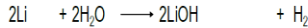
55
133
Cs

87
223
Fr

Reactivity

All of these **shiny** metals react with water.

Lithium + Water → Lithium Hydroxide + Hydrogen

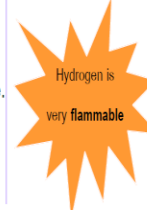


As you go down group one, the elements get more **reactive**.

This is because the **electrons** are further from the nucleus

and are therefore easier to **remove**.

The Metal 'Hydroxide' produced is **alkaline**.
So turns **purple** with Universal Indicator.



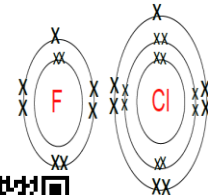
9
19
F

Group 7 - The Halogens

17
35
Cl

Structure

All group seven elements have **seven electrons** in their outer shell (**Valence electrons**).



35
80
Br

53
127
I

85
210
At

117
294
Uus

Reactivity

As you go down group seven, the **reactivity** and **boiling point** decreases.

Chlorine Bromine Iodine



They are often used as **bleaches** and **disinfectants**.

Ununseptium (element 117) discovered in 2010, has recently been confirmed to exist, even if it is only for a few milliseconds!

It is set to be given a name in 2014.

2
4
He

10
20
Ne

18
40
Ar

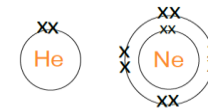
36
84
Kr

54
131
Xe

Group 8 - The Noble Gases

Structure

All group 8 elements have a **full outer shell** of electrons (**Valence electrons**).



Reactivity

All of these **gases** are extremely **unreactive**.

Uses

These gases are often **ionised** and used in 'Neon' lights.

He Ne Ar Kr Xe

Argon is also often used for **welding** because it **protects** the metal from oxidising.



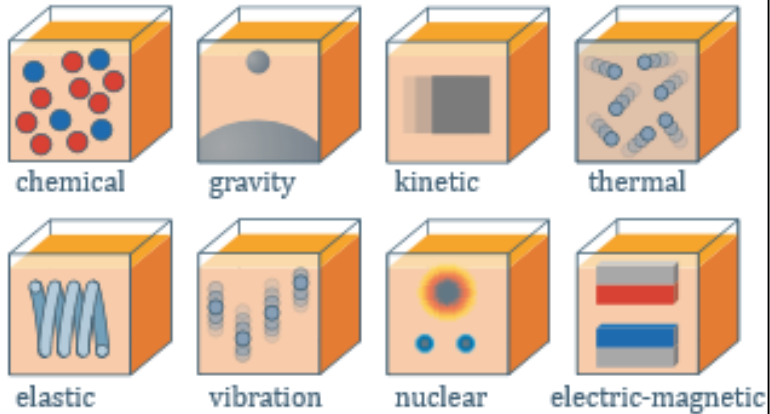
Summary



AQA Physics – Energy

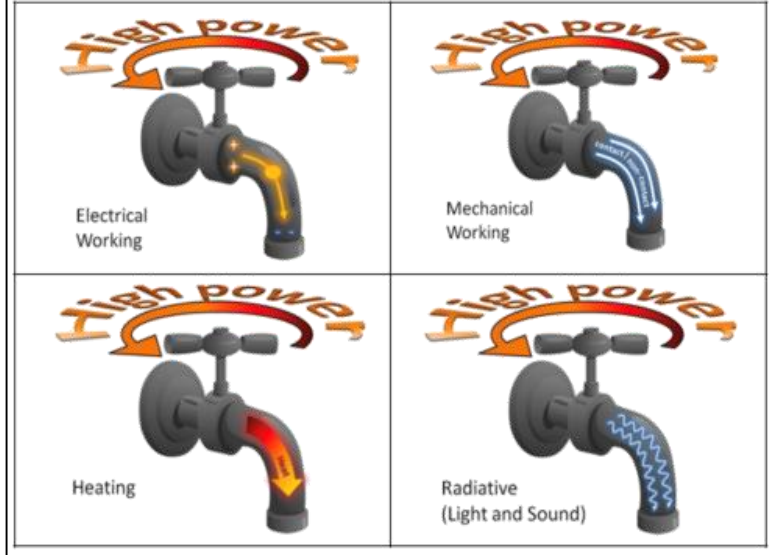
Energy stores

Energy stores are places where energy can be measured.



Law of conservation of energy
Energy cannot be created or destroyed but it can be transferred or transformed.

Energy pathways
Energy pathways are the methods of moving energy from one energy store to another.



Specific heat capacity
Energy used to heat a substance or released when a substance cools.

$$E = mc\Delta T$$



m = mass (kg)
c = specific heat capacity (J kg⁻¹ °C⁻¹)
ΔT = temperature change (°C)

Gravitational potential energy
Energy due to position (height).

$$E_p = mgh$$



E_p = Potential Energy
m = Mass
g = Gravitational Field Strength
h = Vertical Height

7
Summary

Kinetic energy
Energy due to movement

$$E_K = \frac{1}{2}mv^2$$

E_K = Kinetic Energy
m = Mass
v = velocity



Efficiency
A measure of the proportion of energy that is usefully transferred

$$\frac{\text{Useful energy output}}{\text{Total energy input}}$$

OR

$$\frac{\text{Useful power output}}{\text{Total power input}}$$


Elastic energy
Energy due to stretching or squashing.

$$E_p = \frac{1}{2}Fx$$

E_p = Potential Energy
F = Force applied on spring
x = extension of spring





Life in other countries is not always as it is in this one, often in countries around the world it's citizens don't have the same rights as us. Spend some time researching the ways in which other countries treat people in their country.



Democracy



Monarchy



Dictatorship



Anarchy



THERMOSETTING PLASTICS 5

Polyester resins. If resins are combined with a material such as fibre glass, the result is a very tough material that can resist impact. Known as Glass Reinforced Plastic (GRP) and is used in car body repairs, sailing boats and corrugated sheet, because of its lightness, toughness and resistance to water.



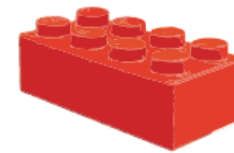
THERMOSETTING PLASTICS 4

Urea Formaldehyde has physical properties of high hardness and high toughness, making it suitable for strong, knock-resistant electrical fittings. It is also scratch resistant and a very good electrical insulator. Electrical fittings manufactured from this polymer are safe to use.



WHAT ARE THERMOPLASTICS ?

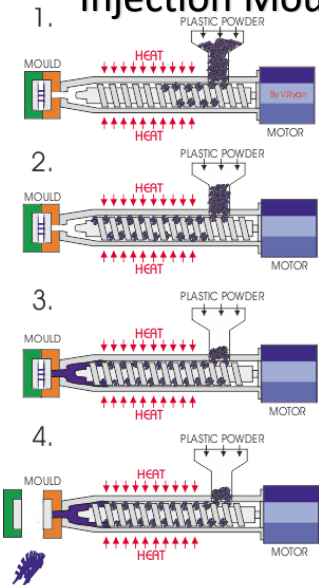
These plastics can be re-heated and re-shaped in various ways. They become mouldable after reheating as they do not undergo significant chemical change. Reheating and shaping can be repeated. The bond between the molecules is weak and becomes weaker when reheated, allowing reshaping. These types of plastics can be recycled.



PLASTIC PROCESSES

Extrusion Moulding

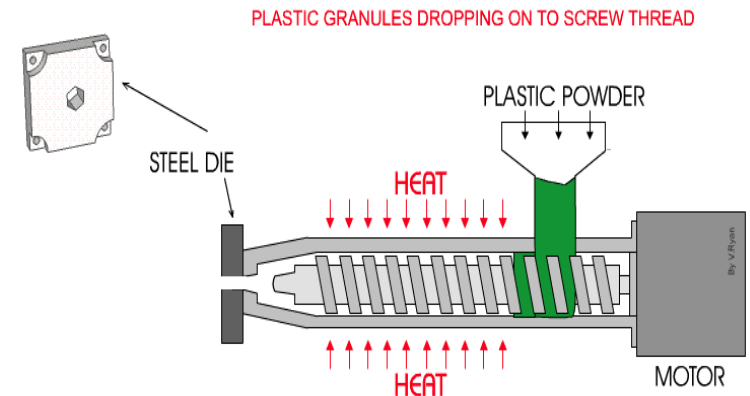
Injection Moulding



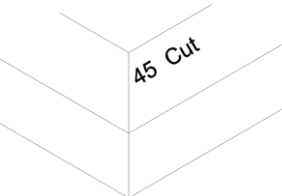
1. Granules of plastic powder (note the plastics listed above) are poured or fed into a hopper which stores it until it is needed.
2. A heater heats up the tube and when it reaches a high temperature a screw thread starts turning.
3. A motor turns a thread which pushes the granules along the heater section which melts then into a liquid. The liquid is forced into a mould where it cools into the shape (in this case a DVD storage unit).
4. The mould then opens and the unit is removed.

Materials such as polystyrene, nylon, polypropylene and polythene can be used in a process called extrusion. These are thermoplastics - this means when they are heated and then pressured in a mould they can be formed into different shapes and sections

A machine used to extrude materials is very similar to the injection [moulding machine](#). A motor turns a thread which feeds granules of plastic through a heater. The granules melt into a liquid which is forced through a die, forming a long 'tube like' shape. The extrusion is then cooled and forms a solid shape. The shape of the die determines the shape of the tube.

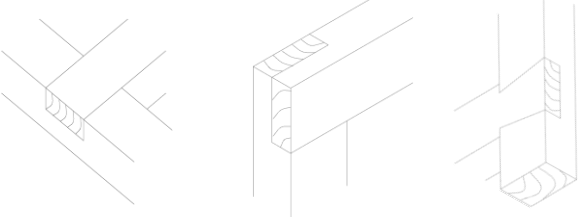


Mitre Joint



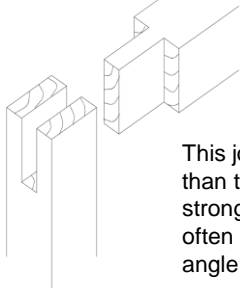
This joint looks good but it is not interlocking so lacks strength. It can be used to produce any shape frame. It can be strengthened by adding veneer keys or dowels as below.

Cross Halving Joint



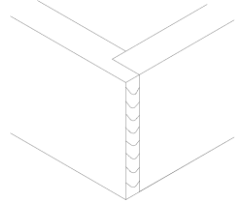
This joint can be used to produce corners, 'T' shapes or '+' shapes. In a corner joint it is not interlocking so relies on the glue for strength. It is side grain to side grain so gives a fairly strong joint. The most common use is in the '+' form. There are better joints for corners or 'T' sections.

Bridle Joint



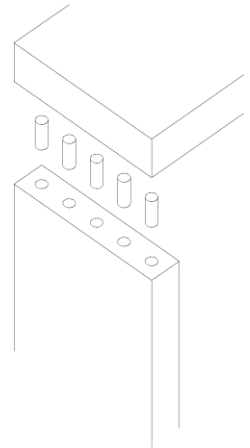
This joint has double the gluing area than the cross halving joint so it is a lot stronger. It is an interlocking joint. It is often used if the joint is not a 90 right angle as the example shows below.

Lap Butt Joint

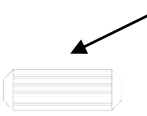


A fairly easy joint to cut but it lacks strength. It is not interlocking so relies on the glue.

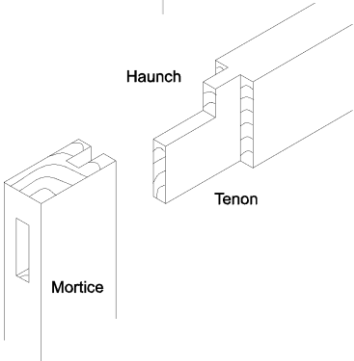
Dowel Joint



A Dowel joint is created by drilling matching holes in both boards then inserting dowels to provide some strength. It is not a very strong joint and requires a lot of accuracy to manufacture well. It is more suited to machine made, mass produced furniture



The dowels have chamfered ends and grooves cut along the sides. This is to allow air and glue to escape from the hole.



Mortice & Tenon Joints

This is the most common frame joint in use. It has the same gluing area as the bridle joint but it is contained within the frame.

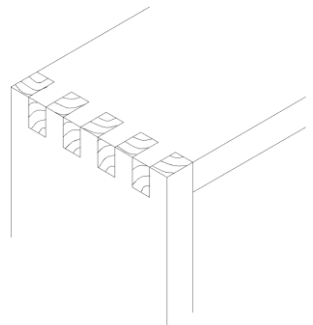
Through and Lap Dovetail Joint



This is a very strong and attractive joint. It has a large gluing area and is interlocking. The wedge shape of the Dovetail prevents the joint being pulled apart even without glue.

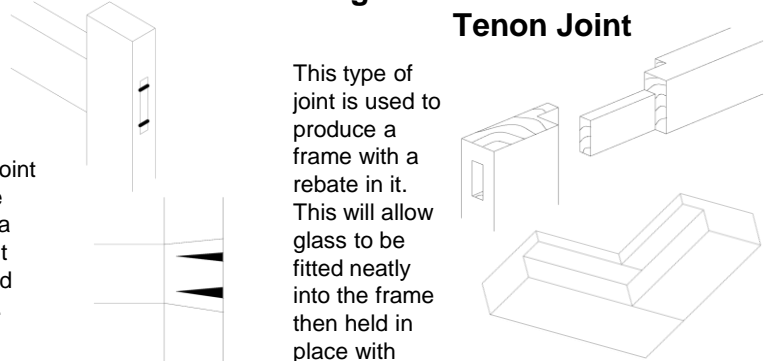
A Lap Dovetail is used when strength is required but you do not want to see the joint, for example on a drawer front. It is very strong and interlocking whilst having an unbroken front face.

Comb or Finger Joint



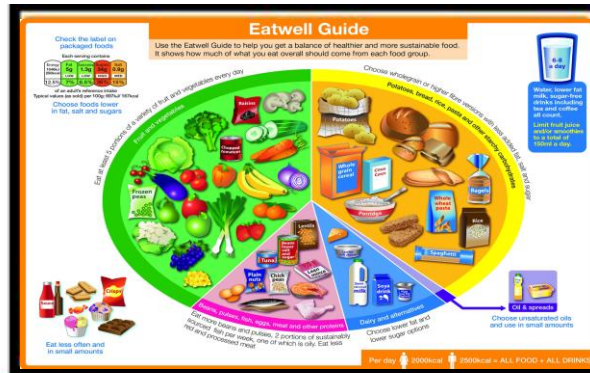
This is a joint used in mass produced machine made furniture. Machines are set up to cut multiple slots at the same time that will interlock with each other. It is interlocking and very strong when glued but it does not have the wedging action of the Dovetail joint. It is quite difficult to cut by hand.

Long & Short Shoulder Mortice & Tenon Joint



This type of joint is used to produce a frame with a rebate in it. This will allow glass to be fitted neatly into the frame then held in place with some beading

A balanced diet consists of a variety of different types of food, providing adequate amounts of the nutrients necessary for good health –carbohydrates, fats, proteins, vitamins, minerals, fibre and water.



CARBOHYDRATES

Types of food: Bread, Rice, Pasta, Potato



Benefits: Carbohydrates are needed for energy, there are two types which are starches and sugars. Carbohydrate provides an important source of energy for the body. Carbohydrate provides 16kJ per gram which is used both for energy to move and be active as well as energy for body processes such as breathing, heart beating. Vitamin B (thiamine and riboflavin) help release the energy to the body. All carbohydrates are converted to **glucose** when digested and this is converted to energy. If the energy is not used up then it is stored as body fat

TYPE OF MACRONUTRIENT

FATS

GOOD FATS: Fish, nuts, olive oil, avocado
BAD FATS: Fried food, chips, chocolate, butter, cheese



Benefits: source of energy, all fats need to be eaten in moderation.

TYPE OF MACRONUTRIENT

Protein

Types food: Eggs, fish, meat, cheese, nuts



Benefits: **Protein** provides the amino acids for the body to grow especially in children and pregnancy. Protein is used to repair the body tissues after illness, injury or surgery. It also produces enzymes for digesting foods. It is a secondary source of energy for the body. Protein contains a variety of amino acids with different forms of protein containing all or some of the amino acids needed by the body.

TYPE OF MACRONUTRIENT

Macronutrients -Carbohydrate, protein and fat (macro means large)
Micronutrients –Vitamins and minerals (micro means small)

VITAMINS

TYPES:

A–Fruit and Vegetables

B–Dairy, eggs, fish

C–Fruit

D–Dairy, fish

E–Fruit, Vegetables, cheese, oil, dairy

K–Fruit, vegetables, cheese, chicken

Benefits:

A –treats eye disorders and skin infections

B–relief from Kidney and Liver disorders plus anaemia

C–helps treat scurvy, common colds and cancer

D–helps relieve arthritis and diabetes

E–helps blood circulation and ageing process

TYPE OF MICRONUTRIENT



WATER / FIBRE

Types of food–cereals, bread, fruit and vegetables

Benefits: Water-hydrates the body, 70% of our body weight is water. Stops overheating, helps waste disposal. **Fibre**-regulates the digestive system and intestines helping with the removal of waste products



TYPE OF MICRONUTRIENT

MINERALS

TYPES: Calcium –milk, cheese, broccoli

Sodium –salt, bacon, fruit, vegetables

Iron –red meat, chicken, broccoli, spinach, fish

Benefits: Calcium–forms bones and teeth

Sodium–regulates body fluid

Iron–helps oxygen transportation



TYPE OF MICRONUTRIENT

Macronutrients -Carbohydrate, protein and fat (macro means large)
Micronutrients –Vitamins and minerals (micro means small)