

Haggerston School



Year 9 Knowledge Organiser Term 3

2024

Aspiration Creativity Character

Knowledge Organiser - Guidance

- You must bring your Knowledge Planner to school every day in your school bag.
- You should place your Knowledge Planner on your desk at the start of every lesson so that you can refer to it when instructed by your teacher.
- If you lose your Knowledge Planner, you will need to purchase a replacement one from Student Services.
- **In the Study Centre**, you will use your Knowledge Planner to study the relevant subject's Knowledge Organiser and **learn** the information provided.
- Use your blue exercise book to make notes to help revise and learn the information provided in each Knowledge Organiser.

KS3 Knowledge Organiser - Contents

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Term 3



Impressionism is a style of painting that began in France in the early 1860s when artists started painting pictures outside, rather than in their studios. This was called 'en plein air' (which is French for open air). They wanted to capture moments in time. Because the light conditions kept changing, they had to work very quickly, using quick, gestural brushstrokes of paint.



Practical application of art history:

1. Can you accurately recreate the work of Claude Monet using pencil?
2. Can you use pen to recreate the other work by Claude Monet using mark making?
3. Can you create a tonal drawing of the water lilies?
4. Write in full sentences WWW and EBI.

Monet was born in Paris in 1840 and as a child he showed great talent as an artist. In 1872 he painted a picture of a harbour using very loose brushstrokes. He called the picture *Impression, Sunrise* and exhibited it along with paintings by his friends who also painted 'en plein air'. The artists became known as the impressionists after the title of Monet's painting.

This picture of water lilies was part of a series Monet painted of his water garden at his house at Giverny. They are the most celebrated paintings of Monet's career. Today we call these pictures abstract-impressionist paintings, because the surface of the pond fills the entire canvas with light and colour and the picture looks almost abstract.



Claude Monet

If you look closely at the painting, can you see how Monet has tried to capture light and reflection on the surface of the water by using dabs of white paint? Monet painted water-lilies in all seasons and in all weathers for over 30 years. This particular painting of water-lilies was painted after 1916, during a very sad time in Monet's life. His wife had died and his son had been killed in the First World War. The fighting was so close to Monet's house that he could hear the guns from his garden.

Do you think it is strange that he painted such a calm and beautiful picture when there was chaos all around him? Perhaps he wanted to paint something that made him happy, like his pond.

Self Quiz:

1. What were the impressionist painters trying to achieve with their art?
2. What was Monet inspired by?
3. Can you explain what abstract art is? Is Monet's work abstract? Why/why not?
4. Where did Monet paint most of his artwork? Why?
5. Can you describe one of Monet's artworks? What do you feel when looking at it and how to the formal elements (colour, line, tone, composition) help create that feeling?

Section A: Key vocabulary	
Tier 3 vocab	Definition
Client	The user machines on a network
LAN	Local Area Network (Single location)
HUB	A central connection for a small network, which broadcasts all data to all clients
Router	Receives and forwards packets across a network
Switch	A smart hub for larger networks which only sends the data to the intended client
Twisted pair	The most common transmission media
WAN	Wide Area Network (Multiple connected locations)
WAP	Wireless Access Point
Tier 2 vocab	Definition
Internet	A worldwide collection of networks
Network	A collection of machines which can communicate with one another
Node	A device on a network (PC or other device)
Stand Alone	A single machine, not connected to another

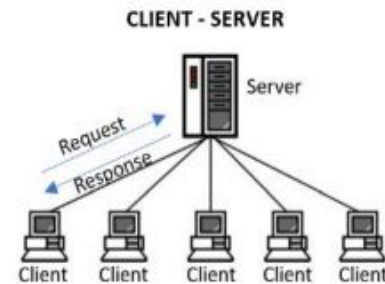
Section B: Why Network?	
Positives	Negatives
•Communication between users	•Higher cost than single machines
•Sharing of files / devices	•Requires additional hardware
•Monitoring user activity	•Requires administration
•Centralised administration of machines	•Open to attacks
•Multiple work stations available for users	•Client-Server systems are vulnerable to server failure
•Possible to distribute workload for large tasks	

NETWORK HARDWARE

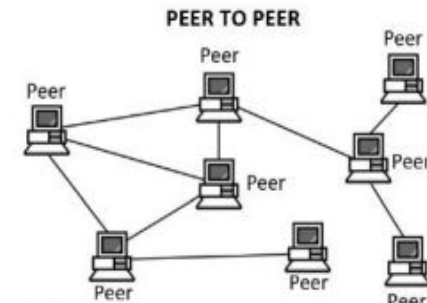


All clients need an NIC to connect to a ROUTER. This could be a wireless adapter or a network card. The Router in this simple connection can host multiple clients, but more advanced hardware is needed for bigger networks

NETWORK ORGANISATION



A single high-spec machine is designated the server, which includes the main file storage. Each client then *requests* data from the server which *responds* and fulfills the request.



A *distributed* system where each node is equal. Every computer can serve and request data from all others. The system is easy to set up, but slow and difficult to administer.

Beginner's Python Cheat Sheet

Variables and Strings

Variables are used to store values. A string is a series of characters, surrounded by single or double quotes.

Hello world

```
print("Hello world!")
```

Hello world with a variable

```
msg = "Hello world!"
print(msg)
```

Concatenation (combining strings)

```
first_name = 'albert'
last_name = 'einstein'
full_name = first_name + ' ' + last_name
print(full_name)
```

Lists

A list stores a series of items in a particular order. You access items using an index, or within a loop.

Make a list

```
bikes = ['trek', 'redline', 'giant']
```

Get the first item in a list

```
first_bike = bikes[0]
```

Get the last item in a list

```
last_bike = bikes[-1]
```

Looping through a list

```
for bike in bikes:
    print(bike)
```

Adding items to a list

```
bikes = []
bikes.append('trek')
bikes.append('redline')
bikes.append('giant')
```

Making numerical lists

```
squares = []
for x in range(1, 11):
    squares.append(x**2)
```

Lists (cont.)

List comprehensions

```
squares = [x**2 for x in range(1, 11)]
```

Slicing a list

```
finishers = ['sam', 'bob', 'ada', 'bea']
first_two = finishers[:2]
```

Copying a list

```
copy_of_bikes = bikes[:]
```

Tuples

Tuples are similar to lists, but the items in a tuple can't be modified.

Making a tuple

```
dimensions = (1920, 1080)
```

If statements

If statements are used to test for particular conditions and respond appropriately.

Conditional tests

equals	x == 42
not equal	x != 42
greater than	x > 42
or equal to	x >= 42
less than	x < 42
or equal to	x <= 42

Conditional test with lists

```
'trek' in bikes
'surly' not in bikes
```

Assigning boolean values

```
game_active = True
can_edit = False
```

A simple if test

```
if age >= 18:
    print("You can vote!")
```

If-elif-else statements

```
if age < 4:
    ticket_price = 0
elif age < 18:
    ticket_price = 10
else:
    ticket_price = 15
```

Dictionaries

Dictionaries store connections between pieces of information. Each item in a dictionary is a key-value pair.

A simple dictionary

```
alien = {'color': 'green', 'points': 5}
```

Accessing a value

```
print("The alien's color is " + alien['color'])
```

Adding a new key-value pair

```
alien['x_position'] = 0
```

Looping through all key-value pairs

```
fav_numbers = {'eric': 17, 'ever': 4}
for name, number in fav_numbers.items():
    print(name + ' loves ' + str(number))
```

Looping through all keys

```
fav_numbers = {'eric': 17, 'ever': 4}
for name in fav_numbers.keys():
    print(name + ' loves a number')
```

Looping through all the values

```
fav_numbers = {'eric': 17, 'ever': 4}
for number in fav_numbers.values():
    print(str(number) + ' is a favorite')
```

User input

Your programs can prompt the user for input. All input is stored as a string.

Prompting for a value

```
name = input("What's your name? ")
print("Hello, " + name + "!")
```

Prompting for numerical input

```
age = input("How old are you? ")
age = int(age)
```

```
pi = input("What's the value of pi? ")
pi = float(pi)
```

Python Crash Course

Covers Python 3 and Python 2

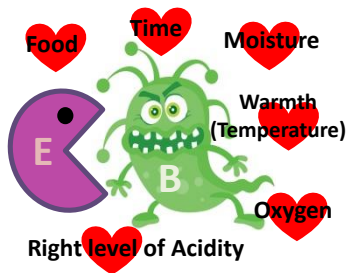
nostarchpress.com/pythoncrashcourse



Cooking & Nutrition

Food Spoilage

When a food deteriorates in quality or becomes unsafe to eat it is called **spoiled**. This can happen through natural **decay** caused by **enzymes** or **bacterial contamination**. Both **enzymes** and **bacteria** need the right **conditions** to work. If these conditions are changed then the rate of food spoilage will change. Speeding up if in excess or slowing down if reduced.



When foods become spoiled they change texture, shape, taste and their aroma will become more pungent. Strawberries will become very soft, furry, they may start to grow fur, shrink in size whereas bread becomes dry and starts to grow mould



Above: **Conditions** needed to cause Food Spoilage (**FAT-TOM**)

Bacteria: pathogenic microorganism that can cause illness if consumed.

Enzymes: Biological catalysts in living things that speed up chemical reactions. Depending on the circumstance the chemical reaction could start the process of decay, ripening and also browning*.



Ripening



Enzymic Browning

***Enzymic Browning:** The discolouration (browning) in fruit and veg due to the reaction of enzymes with cut flesh (e.g half an apple) and oxygen.

Consider where would you store vegetables to make them last longer?

Food Poisoning: an illness that is caused by consuming food or water that has been contaminated by specific **pathogenic bacteria** (examples of which are below)

Campylobacter: found in raw poultry and meat, milk and untreated dirty water
E. Coli: found in beef (especially mince beef) raw milk (milk that has not been heat treated), dirty water.

Salmonella: found in raw and undercooked poultry, eggs and raw milk
Listeria: soft cheeses, cheese made from unpasteurised milk, salad vegetables and pates
Staphylococcus Aureus: found on people (especially on hands, nose, mouth, skin, in cuts and skin infections), raw milk, cold cooked meats and dairy products

Contamination: The transfer and subsequent presence of harmful bacteria or chemicals in food or preparation area. There are 4 types of contamination:



Biological Contamination: Any transfer of bacteria from human, animal or food to food or preparation area. Including sneezing, coughing, blood, pus/transfer of bacteria from animal to their food product -meat, eggs, milk/transfer of bacteria from unclean hands

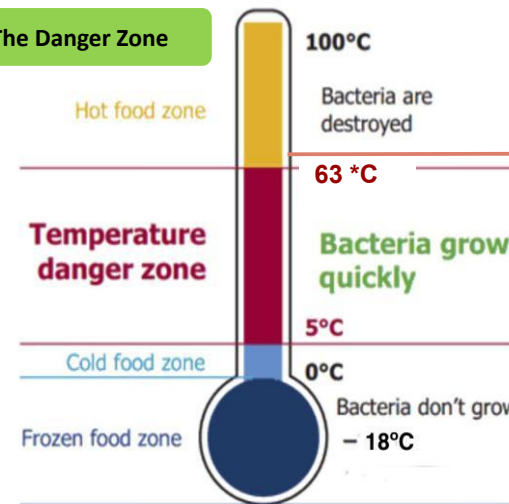
Cross contamination: is an example of biological contamination, it refers to the transfer of bacteria from raw meat to ready to eat foods

Physical Contamination: when a tangible object (you can see or feel) falls into food eg. hair, finger nails, plasters, plastic, dirt. Physical contaminants can act as vehicles to transfer of bacteria

Chemical Contamination: any transfer of chemicals eg, bleach, pesticides, cleaning product and perfume.

The Danger Zone

- The **temperature danger zone** is between 5°C and 63°C, when it is easiest for harmful bacteria to grow in food
 - Minimise the time that food spends at these temperatures in order to keep food safe
 - Refrigerated food needs to be kept at 5°C of below
 - Hot food needs to be kept at 63°C of above



High Risk Foods



High Risk Foods are foods that have the ideal conditions for the growth of bacteria. They often are high in protein and moisture. Preventing **cross contamination** is especially important when using high risk foods.

NB: The risk is reduced when food is cooked thoroughly however can return unless consumed or stored correctly. Think **FAT-TOM!**

Food Science: Carbohydrates in Cooking

Dextrinization



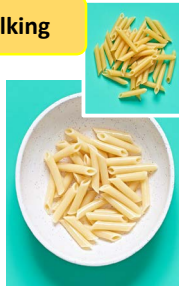
When **dry** (toaster, oven, grill) heat is applied to a **starchy** food (bread/pizza dough, cake, biscuit), the **starch molecules** are broken down into sugars called **dextrins**. This is called **Dextrinization**. The dextrins change the colour (brown) and taste of the food. If the food is overcooked the **starch** turns to **carbon**

Gelatinisation



The absorption of water by starchy Foods causing the volume to increase (and becomes softer in texture) eg. Pasta and potatoes. This is known as **Bulking**.

Bulking



When **starch molecules** are heated and surrounded by a liquid (like milk) they begin to absorb the liquid, eventually bursting and thickening. This is called **Gelatinisation**. Potatoes are used to thicken soups, cornflour or flour for sauces eg. Cheese sauce, gravy, custard

Kneading

When **flour** and **water** are mixed **gluten** is formed. Through **kneading**, gluten is stretched and the dough is more **elastic**. It also creates gluten networks which trap CO2 released by the yeast.



Caramelisation



When dry heat reacts with **sugar** it caramelizes causing a **sweeten taste** and some change in colour.

Viscosity

Viscosity refers to the flow and thickness of a sauce. The viscosity will be determined by the amount of starch, liquid & level of heat. Using a ratios will help to balance the ingredients



Food in the Wider World: Food Waste

Minimising food waste not only saves the consumer money but also reduces the impact on the environment.

Ways to reduce food waste:

- Plan meals in advance
- Use a shopping list when buying food
- Freeze any leftovers
- Use leftovers in other dishes
- Understand the difference between best before dates and use by dates so to ensure food is eaten in time

Packaging also should be considered to reduce wastage eg. buying food with minimal packaging or packaging that can be easily recycled

Rather than putting old (not spoiled) food in the bin, it can be reused in other dishes for instance 'bendy' veg could be used in a stew or soup.



Leftovers can also be saved to make other meals for instance the beef ragu from a bolognese could be used to make a cottage pie or lasagne. Again not wasting food!

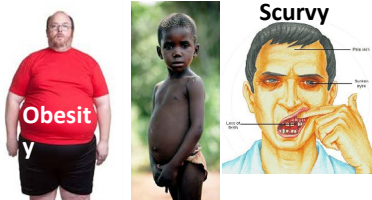


Nutrition & Malnutrition

Food provides your body with the nutrients it needs to work.

Malnutrition is a serious condition that happens when your diet does not contain the right amount of nutrients, this could be too few or too many. Somebody who suffers from malnutrition is malnourished.

Too many nutrients consumed through too much food can result



Too little protein (macronutrient) can result in the condition Kwashiorkor and too little vitamin C (micronutrient)

Nutrient	Function
Carbohydrates Bread, Pasta, Potatoes, Rice, Cereals	-Broken into Starch and Sugar -Starch foods are called complex carbohydrates and release energy over a long period of time. -Sugar are called simple carbohydrate. They release energy quickly. Lactose, Fructose and Sucrose are all Sugars.
Fibre Whole grain products, skins of fruit & veg	-Prevents constipation -Absorbs poisonous waste from digestive food -Stays undigested but helps move digested food through our system
Protein Meat, Dairy, Eggs, Beans, Chickpeas	-Helps repair and grow new cells (muscles and body tissue) -Acts a secondary source of energy
Fat Dairy, Meat, Oily Fish, Avocados, Olive Oil	-Insulates the body from the cold -Cushions your bones and organs from any damage caused by knocks. -Stores energy
Vitamins Fruit & Veg	They are generally used to: -Controls chemical reactions -Keeping the body healthy and preventing some diseases linked to a poor diet -Regulate the function and repair of cells
Minerals Fruit, Veg, Meat	They are generally used to: -Turn the food we eat into energy -Build strong bones and teeth -Control body fluids
Water	-Our bodies are 65% water. It is vital for our body to stay hydrated. -Chemical reactions in our cells take place in water. -Waste products are passed out of our bodies in water. -Our blood transports substances that are dissolved in water. -Water is in sweat that cools us down

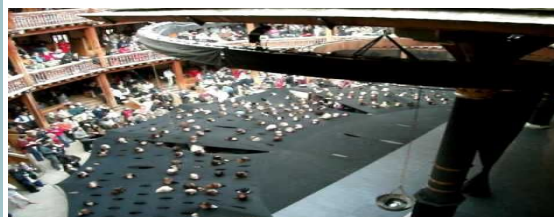
MACRONUTRIENTS:
Needed by the body in large amounts

MICRONUTRIENTS:
Needed by the body in small amounts

Act	Plot	Macbeth	Characters														
1	Macbeth and Banquo are praised as brave and loyal warriors. They meet three witches who reveal the first set of prophecies: Macbeth will be Thane of Cawdor, then King. They tell Banquo his descendants will be kings. Soon after, the prophecies start to come true. Lady Macbeth receives Macbeth's letter; and plans to manipulate Macbeth. King Duncan arrives at Macbeth's castle. Macbeth's soliloquy: Macbeth tells Lady Macbeth he will not commit regicide, but she persuades him and convinces him that they can frame Duncan's servants.		<table border="1"> <tr> <td>Macbeth</td> <td>A brave and ambitious Scottish nobleman. He murders and usurps King Duncan. The witches' prophecies transform him from a loyal warrior to an immoral tyrant.</td> </tr> <tr> <td>Lady Macbeth</td> <td>She represents ambition, manipulation and guilt. She is a rebel, challenging the submissive role of women and the divine right of kings.</td> </tr> <tr> <td>King Duncan</td> <td>He symbolises nobility, dignity and trust.</td> </tr> <tr> <td>Banquo</td> <td>He symbolises nobility, loyalty and trust. Through his loyalty and rejection of the prophecies, he is a foil to the character of Macbeth.</td> </tr> <tr> <td>The Macduffs</td> <td>They symbolise family, loyalty and vengeance. The Macduffs serve as a contrast (and foils) to the Macbeths:</td> </tr> <tr> <td>Malcolm</td> <td>The son of Duncan. He flees after Duncan's murder, and becomes King at the end of the play.</td> </tr> <tr> <td>The Three Witches</td> <td>They represent the supernatural, evil and equivocation. The witches' prophecies never give the full answer (they 'equivocate') and tempt Macbeth towards his tragic end.</td> </tr> </table>	Macbeth	A brave and ambitious Scottish nobleman. He murders and usurps King Duncan. The witches' prophecies transform him from a loyal warrior to an immoral tyrant.	Lady Macbeth	She represents ambition, manipulation and guilt. She is a rebel, challenging the submissive role of women and the divine right of kings.	King Duncan	He symbolises nobility, dignity and trust.	Banquo	He symbolises nobility, loyalty and trust. Through his loyalty and rejection of the prophecies, he is a foil to the character of Macbeth.	The Macduffs	They symbolise family, loyalty and vengeance. The Macduffs serve as a contrast (and foils) to the Macbeths:	Malcolm	The son of Duncan. He flees after Duncan's murder, and becomes King at the end of the play.	The Three Witches	They represent the supernatural, evil and equivocation. The witches' prophecies never give the full answer (they 'equivocate') and tempt Macbeth towards his tragic end.
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2	Macbeth sees a vision of a dagger leading him to Duncan's chamber. Macbeth murders King Duncan and Lady Macbeth plants blood-stained daggers on the servants; Macbeth begins to experience guilt, but Lady Macbeth manipulates him by questioning his courage and masculinity. Duncan's sons, Malcolm and Donalbain, flee from Scotland because they fear for their lives – this makes them look guilty. Macbeth takes the throne.																
3	Macbeth is anxious about Banquo because of the witches' prophecy and orders assassins to murder Banquo and his son, Fleance. Banquo is murdered, but Fleance escapes! Macbeth learns of Fleance's escape and then sees Banquo's ghost at the banquet he is hosting – his reaction reveals his guilt to his guests.																
4	Macbeth visits the Witches again; they each tell another prophecy: one, beware Macduff; two, no one born from a woman can harm him; three, he can't be beaten until Birnam Wood moves to Dunsinane Hill. Macbeth sends murderers to kill Macduff's wife and children. In England, Macduff proves his loyalty to Malcolm. Macduff learns of his family's murder. He and Malcolm vow revenge on Macbeth.																
5	Lady Macbeth has gone mad. She sleepwalks and keeps washing invisible blood from her hands. Macbeth hears about the approaching English army but he isn't scared because of the Witches' prophecies. Malcolm tells the soldiers to cut down branches from Birnam Wood and hide behind them as they march towards Macbeth's castle. Macbeth finds out that LM has killed herself Macbeth and Macduff meet on the battlefield. Macbeth discovers that Macduff was born by caesarean. They fight and Macbeth is killed. Malcolm is made King of Scotland.																

Task 1: Look, cover, write and check the plot and character points.

Task 2: Here are photographs of recent productions of Macbeth. One is set in a military hospital and one puts the audience under a canopy. THINK about why the directors did this - how does it link to what happens in the play? Brainstorm 2-3 ideas for your own production concept and explain how each links to what happens in the play.



Power and Protest

Animal Farm - Key plot details



1. Old Major, the prize boar, calls a secret meeting of all the farm animals on Manor Farm. He states that a rebellion against their human master, Mr Jones, will one day come.
2. A cow starts the rebellion by walking into the store-shed. The animals end up chasing Mr Jones off the farm.
3. Now they are free, the animals all agree on the Seven Commandments that they will live by. The farm is renamed 'Animal Farm'. There is hope for a better future.
4. The pigs start to order the other animals around and take more food than they should.
5. The animals bravely fight off a human attempt to retake the farm, this becomes known as 'The Battle of the Cowshed'.
6. The animals set to work building a windmill and Napoleon takes charge.
7. Napoleon reduces the rations and rights of the animals and starts breaking the commandments. There is another invasion by the men and the windmill is blown up. Boxer collapses whilst rebuilding it for the second time.
8. Napoleon and the other pigs learn to walk on their hind legs, wear human clothes and carry whips. Despite all their hard work, the animals of the farm are right back to where they began, hungry, scared and exploited by those in charge.

Animal Farm was written by George Orwell and published in 1945. This novel is an **allegory**, even though it is set on a farm and stars a cast of farm animals, it reflects the events of the Russian revolution of 1917. The animals are all clever representations of Russian **politicians**, voters and workers. Orwell used the novel to make his opinions on Russian leaders heard. **Power** and **protest** are themes in the novel.

Key Words:

Allegory – A story or poem which has a hidden (usually political) meaning.

Politicians – The people associated with the governance of a country or area.

Power – Strength, control, ability or an official right.

Protest – To do/ say something to show disagreement, disapproval or opposition.

Context

Marxism is based on the ideas of a man called Karl Marx. It is an economic system opposing capitalism. Marx's theories informed communism, a political and economic system in which the people own the means of production and there is no trade. A communist government regulate this but there is no private ownership or social hierarchy. There is an emphasis on collective responsibility not individualism.

Power in Russia (Manor Farm) was held by a wealthy few called Tzars (Mr Jones, the farmer) whilst the majority of people were impoverished and oppressed peasants (the animals). Lenin (Old Major, boar) led a revolt, seized Russia (Manor Farm) and renamed it The Soviet Union (Animal Farm). He died and Stalin (Napoleon) and Trotsky (Snowball) took control but Stalin soon banished Trotsky. Stalin and his party (the pigs) became the new ruling class abandoning the founding principles of the Russian revolution (animalisms). They led through fear, manipulation of the people.

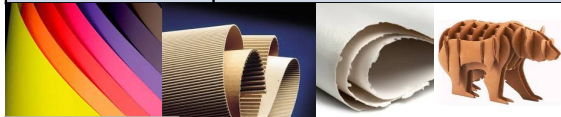
1. Self Quiz – LOOK, COVER, WRITE, CHECK & CORRECT

Make sure you understand the plot points, characters, the allegorical meaning and context.

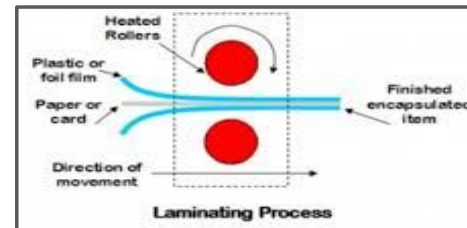
2. Links to the wider world: Can you link the allegory to other events in the wider world?

MATERIALS - PAPERS and BOARDS and their PROPERTIES

PAPERS		
USES	PHYSICAL and WORKING PROPERTIES	ADVANTAGES and DISADVANTAGES
Layout Paper - for tracing design ideas to develop them further	Smooth finish and some transparency, able to see the image or drawing underneath to further develop a sketch.	Strong, low cost but can smudge if altering a drawing with eraser
Copier Paper - for inkjet printing, photocopying	White or coloured with a smooth finish, lightweight and inexpensive in bulk	Readily available and can be printed on easily but not strong and lacks quality
Tracing Paper - for tracing images to copy them	Smooth finish and very transparent, easy to see the image and trace	All sizes readily available but can be expensive for better quality types
Recycled Paper - for toilet paper, paper towels, paper bags	Rough surface, grainy and flexible, can be printed on and coloured	Benefits to the environment and inexpensive but not very strong



BOARDS		
USES	PHYSICAL and WORKING PROPERTIES	ADVANTAGES and DISADVANTAGES
Mounting Board - for mounting work and pictures, model making	Coloured surface with white board behind, thick, strong and lightweight	Good quality and available in many colours, but expensive and does not bend easily
Folding Boxboard - for food box packaging	Good printing surface, can be scored, bent and creased easily	Relatively inexpensive but not very strong
Corrugated Board - for packaging boxes, the protection of parcels	Layered card with crimped structure inside, good strength with the option of different thicknesses	Readily available with good impact resistance, but bends easily in one direction and is not water resistant



THE FIVE MATERIAL AREAS

- Papers and Boards
- Timbers and Manufactured Boards
- Thermoforming and Thermosetting
- Plastics
- Metals
- Natural and Synthetic Fabrics and Fibres

PHYSICAL PROPERTIES	
Absorbency	The ability of a material to soak up moisture, heat or light. Natural materials such as cotton or paper tend to be much more absorbent than synthetic materials such as acrylic or polystyrene.
Density	How solid a material is. This is calculated by dividing mass (grams) by volume (cm ³). Lead and iron are dense materials.
Electrical Conductivity	The ability to conduct electricity. E.g. copper is a good conductor of electricity and is used in electronic products and wiring.
Fusibility	The ability of a material to be heated and joined to another material when heated. E.g. heated lead free solder can be used to join an electronic component to a circuit board
Thermal Conductivity	The ability to conduct heat. E.g. Steel is a good conductor of heat whereas pine is not. As steel or aluminium saucepans get very hot and conduct heat, their handles need to be made from a non-conductive or <i>insulating</i> material.

WORKING PROPERTIES	
Strength	The ability of a material to withstand compression, tension or shear. Mild steel for example is a good material to make furniture frames because it is strong and can withstand human weight.
Toughness	Materials that are hard to break or snap are tough and can absorb shock. Kevlar in a bullet-proof vest is an extremely tough and impact-resistant material. Phone cases need to be tough.
Hardness	Hardness is the ability of a material to withstand scratching. Phone screens and spectacle lenses need to be hard.
Malleability	Malleability is the ability of a materials to be bent or formed into shape. They will then retain that form. A paper clip is malleable. Car body panels need to be malleable.
Ductility	Ductility is the ability of a material to drawn into a wire or length. Copper is a very ductile material and is used for electrical wiring and cabling.

DT

Size	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1	A0	2/A0	4/A0
Length (mm)	37	52	74	105	148	210	297	420	594	841	1189	1682	2378
Width (mm)	26	37	52	74	105	148	210	297	420	594	841	1189	1682

most common sizes used by designers

Social and Ecological Issues

A great number of trees have to be cut down in order to manufacture **'virgin' paper**. Paper and board can only be recycled seven times before it has to be mixed with new fibres. It is important to **recycle** paper and boards as this will have less impact on the environment through factors such as deforestation, which can then lead to soil erosion.

Deforestation has a huge effect on the ecosystem and the people and specific breeds of animals that rely on them, affecting the **biodiversity**.

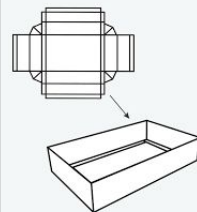
Design Context - Situation that creates opportunities for design.

Design Brief - An instruction from a client to a designer. A short statement of intention.

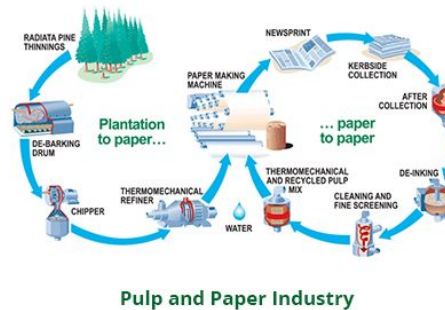
Stakeholders - Anyone interested in, connected to, involved with or affected by a design situation.

Primary User - The person who will need and use the product the most. The person with the greatest design need.

Design Specification - A list/set of design requirements that come researching the needs of stakeholders or primary users.



Pulp and Paper Manufacturing Process



Pulp and Paper Industry

Tools and Equipment

Craft Knives, Safety Rulers, Cutting Maps, Masking Tape, Paper Fasteners.

DESIGN CONSIDERATIONS

- Cost
- Availability
- **Aesthetic**
- Functionality
- Environmental
- Social
- Cultural
- Ethical



Sources and Origins

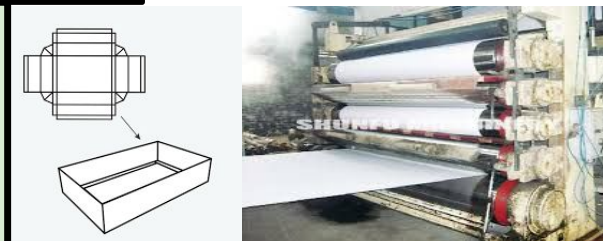
Paper is made from new fibres or **recycled** material. **Wood pulp** is obtained by cutting down trees and breaking down the wood. The bark and chippings are then removed and ground down or cooked with chemicals to extract the **cellulose** fibres. **Softwood trees** are traditionally used to create wood pulp as the fibres are longer, making stronger paper; some manufacturers plant new trees for each one they chop down.

The pulp is filtered, squeezed, bleached and pounded before other materials, such as chalk or chemicals, are added to change the **opacity** and **absorbency** of the paper. The excess water and chemicals are drained out of the pulp by pushing it through sets of rollers, called **'calenders'**, before being shaken and blown to dry out the fibres. This process is repeated until the pulp is fully dried, and then it is pressed to create a smooth finish.


mechanical pulp - by **mechanically grinding** the wood chips down into paper pulp, used for lower grade papers such as newspapers.

chemical pulp - uses **chemicals** to reduce the wood chips down and dissolve into cellulose fibres to make the paper pulp, used for higher quality paper.

Additional **treatments**, or **'coatings'**, can be added to give the paper different **aesthetics**.

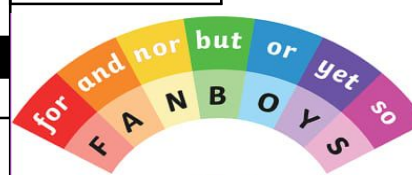
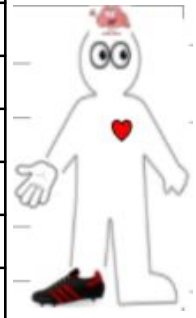


DT

The Dark Lady		Characters		Vocabulary	Context DPR3
Plot		Henry	A 15 year old boy of African heritage. He is a skilled pick pocket, with a magical gift; he can read and translate any language.	marginalised: treated as insignificant	Akala: writer, poet and hip hop artist. Akala is passionate about Shakespeare. He believes both Shakespeare and Hip Hop use language effectively to tell stories, that relate to everyone.
1-3	We are introduced to Henry, Mary and Matthew who are three young pickpockets living in Elizabethan London. They watch Romeo and Juliet at The Globe and Henry experiences discrimination as he tries to buy bread. Henry falls out with Matthew during a football match.	Mary	Henry's cousin, she is loyal and keen to prove herself in a masculine society.	discrimination: unfair treatment	Elizabethan London: There were two sides of London, one where the nobility and gentry lived in luxury and on the other side; the poor who were the majority. They lived in dirty slums where disease and criminality was rife.
		Matthew	Mary's brother. Matthew is boisterous and disloyal.	hypocrisy: when people behave in a way that they tell others not to	
4-6	Matthew discusses his dreams with Graham. Henry has a magic gift of being able to translate any language which he uses to help Joan. Joan consoles Henry and he completes his sonnet.	Joan	Joan is Henry's foster parent and a witch	justice: fairness	Race in Elizabethan England: People of different races were in the minority but some lived free and fulfilling lives. Examples include J. Blanke, a prestigious trumpeter to the monarch and others who set up successful businesses including needle making and silk weaving.
		Agnes	Joan's sister, also a witch although less powerful than Joan.	notorious: famous, typically for a bad quality or deed.	
7-9	Matthew and Henry make up at a dog-fight. They break in to the Duke's house but get caught. Matthew escapes but Henry is kept prisoner. He reveals his gift to the Duke.	Graham	Henry's role model. A needle maker who has created a successful business as a Black man in Elizabethan London.	duality: having two sides	William Shakespeare: A playwright, poet and actor. His work continues to be influential and relevant today.
		Duke Charles Wilmslow	A member of the Nobility, who has a secret interest in magic.	nobility: higher social class	
10-11	Henry remains imprisoned and Camilla brings him food. Dr Dee and Dr Gilbert visit. Henry continues to translate books. He hopes Mary will meet him at midnight but she does not turn up.	Dr John Dee	Good friends with the Duke. Dr Dee is excited to experiment with Henry's magic powers.	compassion: sympathy and concern	Hierarchy and Class Systems: England's strict class system is called 'The Great Chain of Being'. The Monarch is at the top as they have 'divine right' (chosen by God), the nobility beneath, then gentry and yeomans and the largest group; the poor at the bottom.
		Dr Gilbert	Good friends with the Duke, but is a traditionalist, uncomfortable with views that challenge the teachings of religion.	xenophobia: a dislike of people from other countries	
12-14	The Duke takes Henry on a ride to town to a secret meeting where Henry meets Shakespeare. Henry is served by Mary and is told he is of a higher rank. Henry visits a brothel and meets Lucia.	Camilla	The Duke's housekeeper, she shows Henry and Mary compassion.	dichotomy: contrast	Language/Slang: The Nobility spoke Latin and French. After the Bible's translation to English it became more widely spoken. Shakespeare wrote in English and included slang words so everyone could access his plays.
		Lucia	An immigrant from Venice, Italy. She is seductive and Henry's love interest.	deprivation: poverty	
15-17	Henry is told by the Duke that Matthew set him up. Henry runs away and is shown a letter from his mother by Joan. Henry decides to sail to Venice to find his mother. Graham gives him a potion to help with seasickness. Lucia offers to sell the golden bird to help Henry get the money to go to Venice.	Themes		prejudice: assumptions about certain groups	The Dark Lady: A Sonnet written by William Shakespeare, some interpretations of the sonnet suggest that Shakespeare is talking about a seductive woman of African descent.
		Class		Division	
18-19	Lucia does not turn up and Henry now feels that everyone is against him. He goes on a pickpocket spree. Henry spots Matthew and sends over wine that has the potion in. Matthew convulses and Joan uses witchcraft to try and save him but the crowd attack Joan. Henry is hit on the head but wakes up on a ship with Mary and a letter from Shakespeare.	Race		social class: a division of a society based on social and economic status.	
		Otherness		Betrayal	
		Ambition		Power	
				Social mobility: moving between social classes	

Descriptive techniques (DPRO1)		Persuasive techniques: AFOREST (DPRO1)	
Technique:	Example:	Technique:	Example:
Personification - a metaphor attributing human feelings to an object.	<i>The gates were stubbornly locked, teasing and taunting the prisoners.</i>	Alliteration – when more than one word in a row starts with the same letter.	<i>Their are cruel consequences of these catastrophic choices.</i>
Onomatopoeia - words that sound a little like they mean.	<i>The audience hissed and booed when the villain came on stage.</i>	Facts	<i>Women could first perform on stage in the early 1600s.</i>
Pathetic fallacy - using the weather to create or reflect a certain mood.	<i>The mist merged with rain and grew thicker and heavier while Mary sobbed.</i>	Opinion (expert)	<i>Professor Hart, of Oxford University, says "..."</i>
Metaphor - a descriptive technique that names a person, thing or action as something else.	<i>The poet was described as having a 'heart of gold.'</i>	Repetition – repeating a word or phrase.	<i>A unified society will help abolish class systems, a unified society will support all people, a unified society means equality.</i>
Simile - a descriptive technique that compares one thing with another, usually using 'as' or 'like'.	<i>To Henry, sonnet's came naturally like water in a river.</i>	Emotive Language – appealing to your audience's emotions.	<i>You are not innocent if you do not challenge the brutal and unjustifiable treatment of some members of our society.</i>
		Statistics – using numbers and percentages (invent them).	<i>In 2020, 30% of children in the UK lived in poverty.</i>
		Three (rule of) – using three descriptive words or repeating three times.	<i>Ensuring equality of the sexes requires continued progress, development and openness to change.</i>

Vocabulary (DPRO1)
Non-Fiction Texts
Disillusion
Persecute
Intolerant
Hierarchy
Oppression
Impression
Appeal
Interpretation
Acknowledge
Illuminate
Reveal
Misogynistic
Privilege
Tragic
Responsibility



Coordinating Conjunctions - words that join two main clauses to create a compound sentence

Subordinating Conjunctions - start subordinate clauses which help create complex sentences.

How to Structure your Writing: The Body Plan (DPRO2)







Section	Techniques	Starter
The handshake: A powerful introduction	Direct address Refer to the purpose of the piece: (readers / audience / name of the person if it's a letter')	<i>Imagine a world where...</i>
The brains of the matter: Sound knowledgeable	Facts and statistics The opinion of an expert	<i>Evidently, ...</i>
Appeal to the heart: An emotive argument	Emotive language Anecdote (personal or about a real/made up other person)	<i>Take (me / name of person) ...</i>
Kick the opposing argument off the pitch	Acknowledge the other side of the argument but state why your case is stronger	<i>While some people may say...</i>
Look to the future: Finish with a call to action	Imperative language Refer to the purpose of the piece: <i>Readers, as you put down this magazine I want you to... Audience members. As you leave this assembly hall today I want you to... (Name of person) as you finish reading this letter I want you to...</i>	



Sentences (DPRO3,4)	
Technique:	Example:
Subject - noun the sentence is about.	<i>The <u>waves</u> danced.</i>
Verb - word expressing action/ doing.	<i>The waves <u>danced</u>.</i>
Main clause - Part of a sentence containing one subject and one main verb (makes sense by itself).	<i><u>The car stopped</u> because the lights were at red.</i>
Subordinate clause - Part of a sentence which does not make sense by itself.	<i>The car stopped because <u>the lights were at red</u>.</i>


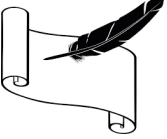



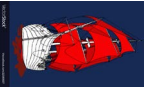
The Dark Lady: Fundamental Quotes

(The things you need to know!)

Quote (DPR1b)	When	What to say? (DPR2)
<p>"London stank...The constant whiff that hit his nose like a dull ache all year round."</p> 	<p>Chapter 1, Pg 1</p>	<p>The powerful verb 'stank' emphasises the unpleasantness and poverty of some parts of London during the Elizabethan era.</p> <p>The simile 'like a dull ache all year round' highlights the imposing nature of the smell and may symbolise the lack of freedom and painful realities some members of society faced.</p>
<p>"In the mountains of litter from busy markets and slum houses, he saw potential."</p> 	<p>Chapter 1, Pg 1</p>	<p>The metaphor 'mountains of litter' highlights the poor living conditions of some areas of London and evokes an image of something that might potentially be large and dangerous.</p> <p>The pause before 'he saw potential' contrasts Henry's hopeful belief in his area of London with how others may have negatively viewed it.</p>
<p>"The whole family had been on the brink of starvation, thin and emaciated, barely strong enough to walk"</p> 	<p>Chapter 3, Pg 29</p>	<p>The adjectives 'thin' and 'emaciated' create an image of desperation and helplessness.</p> <p>'Barely strong enough to walk' emphasises the mistreatment and difficulties the lower classes faced due to poverty and the plague.</p>
<p>"The man spat out those words as if Henry were a rat infecting the city with another bout of plague."</p> 	<p>Chapter 3, Pg 31</p>	<p>The comparison of Henry to a rat highlights the racist views held by some members of society in believing that 'foreigners' were a danger or threat.</p> <p>The verb 'spat' reinforces the clearly prejudiced attitudes.</p>
<p>"He charged at Matthew with all the force he could muster; with all the pent-up aggression of all the times Henry had looked the other way."</p> 	<p>Chapter 3, Pg 41</p>	<p>Henry finally standing up to Matthew symbolises how he can no longer hold back his frustrations with society as a whole.</p> <p>'All the times Henry had looked the other way' highlights how he previously did not react when he had received unjust treatment. Perhaps Akala is encouraging society to challenge discrimination in all forms.</p>
<p>"The duke looked strong and proud, like a soldier. He had a large nose and bird-like eyes, small and sharp."</p> 	<p>Chapter 8, Pg 104</p>	<p>The simile 'like a soldier' conveys to the reader the duke's power.</p> <p>The sibilance of 'small and sharp' may foreshadow the duke's evil and untrustworthy nature.</p>

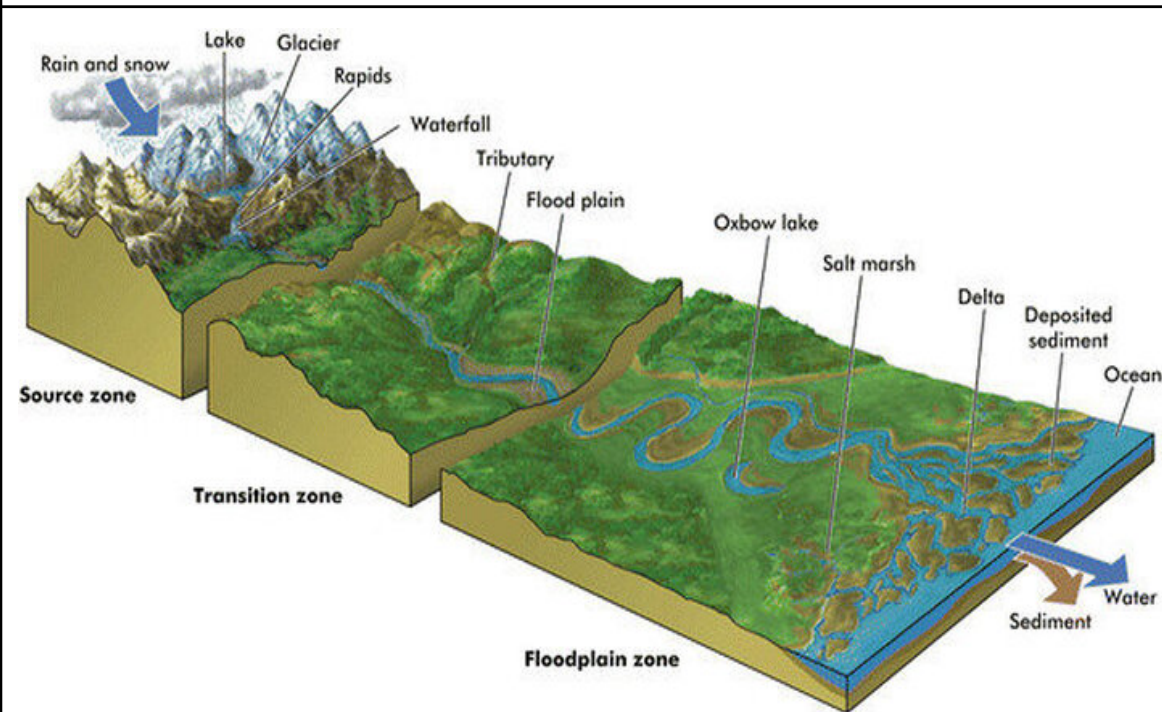
The Dark Lady: Fundamental Quotes

(The things you need to know!)

<p>"Everything about this house screamed of outrageous wealth."</p> 	<p>Chapter 8, Pg 106</p>	<p>The grand house where the duke lives contrasts with the slums of London and represents duality and inequality within the city.</p> <p>The dramatic verb 'screamed' personifies the sickening wealth that upper class members of society had.</p>
<p>"Henry wrote and wrote, powered by a feverish energy. He even forgot the pain of his wounds."</p> 	<p>Chapter 10, Pg 136</p>	<p>The repetition of 'wrote and wrote' emphasises the importance of language and Henry's ability to write.</p> <p>'He even forgot the pain of his own wounds' highlights the importance of language and how the ability to read and write grants you opportunities and freedoms, something that Akala is extremely passionate about.</p>
<p>"And, Mary, " Dr Dee said calmly, "take a leaf out of this woman's book and learn some gratitude."</p> 	<p>Chapter 11, Pg 149</p>	<p>Dr Dee's treatment of Mary and Camilla is representative of the unfair treatment women received during the Elizabethan era, especially those from the lower classes.</p> <p>Dr Dee does not say Camilla's name but instead says '...this woman..' indicating that he does not believe her to be worthy of naming.</p>
<p>"The sweet shame in her acceptance that she was too dirty to hug him stung Henry more than an open insult."</p> 	<p>Chapter 14, Pg 207</p>	<p>The juxtaposition of 'sweet shame' emphasises the hurt and distance that Mary now feels from Henry.</p> <p>The metaphor 'stung' highlights the extreme pain he feels at realising he has let down a true friend whilst being blinded by the opportunities that the duke and upper class society have given him.</p>
<p>"Henry felt something stronger than fear flood his veins and it took him a moment to understand what it was. Powerlessness."</p> 	<p>Chapter 19, Pg 286</p>	<p>The metaphor 'flood his veins' creates an image of something that is unstoppable and dangerous, like rising flood waters.</p> <p>The fragment sentence 'Powerlessness,' emphasises how alone and vulnerable Henry feels. This may also symbolise the vulnerability and isolation of other minorities and the lower classes during the Elizabethan era.</p>
<p>"The smell of salt water overtook the city's fading stench. Henry was going to get away from that stink, once and for all."</p> 	<p>Chapter 19, Pg 299</p>	<p>The cyclical structure of the novel brings the reader back to Henry's experience of the 'stink' of London. At the beginning it seemed to be something Henry could not escape, however, the ending gives him hope and power. Akala may want this to act as a symbol of hope and power for the reader.</p>

Rivers

There are 3 courses of a river. These are the Upper, Middle and Lower course.



Keywords

Erosion is the process that wears away the river bed and banks. There are 4 types:

Hydraulic action - the power of the water as it hits the river banks. Air trapped in faults causes the rock to break apart

Abrasion - when pebbles grind along the river bank and bed wearing it away in a sandpaper effect

Attrition: when pebbles hit each other becoming smoother and rounder as parts of the rock break off

Solution - chemicals in the water dissolve certain types of rock e.g. limestone

Transportation is the movement of sediment through the river. There are 4 ways:

Traction - large heavy stones are rolled along the river bed. Most common in the upper course.

Saltation - smaller pebbles bounce or leapfrog along the river bed

Suspension - lighter material is carried within the water

Solution - when soluble rocks have dissolved in the water

Deposition happens when the river loses energy and sediment builds up.

A. Upper Course

This is where the river starts and is often in an upland or mountainous area. The **channel** is narrow and shallow as the discharge is low. The main process occurring is vertical erosion as the river cuts downwards. The gradient of the river is steep. **V shaped valleys** are formed as the river erodes downwards. Where there are areas of harder more resistant rock the river bends around it creating **interlocking spurs** of land which link together the teeth of a zip. Where there are alternating layers of hard and soft rock the river erodes the soft rock more quickly creating a step and the beginning of a **waterfall**. As the soft rock continues to erode making a plunge pool the hard rock overhanging has nothing to support it and eventually collapses.

B. Middle Course

In the middle course the river has more water (greater discharge) and so more energy. The gradient is less steep here. There is now lateral erosion which widens the river and deepens the **channel**. Large bends in the river called **meanders** form, and when flooding occurs, can be cut off by erosion from the main river channel to form a horseshoe shaped called an **oxbow lake**.

C. Lower course

The river is widest and the volume of water at its greatest. The gradient is flat. The **floodplain** is wide and flat after many years of flooding building up the alluvium making very fertile land. High ridges called **levees** form when a river floods building up the sides of the bank. An **estuary** is a wide, sheltered area of water where the river meets the sea. It is a mix of salt and fresh water and **mudflats** and **saltmarshes** form in these areas.

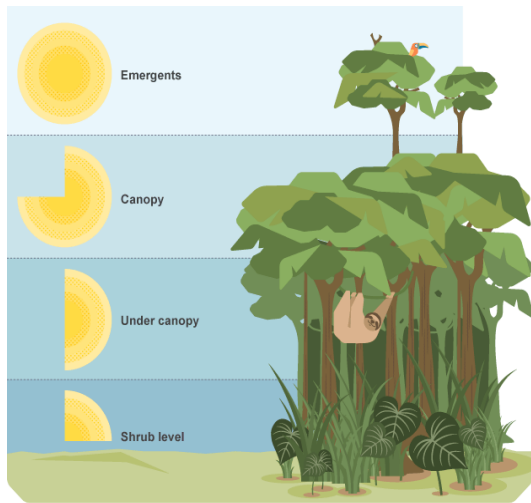
Tropical Rainforests

Tropical Rainforests Characteristics

High **biodiversity** (lots of species)

The climate is very wet with over 2,000mm of rainfall a year. The average daily temperature is over 28°C

The soil is not very fertile, most of the nutrients are washed away (leaching) quickly due to the heavy rainfall.



The rainforest has 4 distinct layers. The **emergents**, **canopy**, **under canopy** and the **shrub layer**. Emergent trees can grow over 50 m tall to reach the sunlight. Most animals and plants live in the canopy as there is plenty of light for photosynthesis and plenty of food to eat.

Plant Adaptations

Drip tip leaves: Plants have pointy tips to allow the water to run off the leaves quickly to avoid them breaking in thunderstorms.

Buttress roots : Large wide roots above the ground which creates a large surface area to stop it falling over in the strong winds.



Animal adaptations

The **sloth** uses **camouflage** and moves very slowly to make it difficult for **predators** to spot. They have long claws to help them climb trees and hold on for many hours each day.

The **spider monkey** has long, strong limbs and a long tail to help it to climb through the rainforest trees. It stretches out in the canopy to reach the many types of fruit to eat.



Causes of deforestation

- **Farming** - large areas are cleared for **pastoral farming**. As the global demand for meat has increased many cattle farms have opened in the Amazon Basin for beef farming. **Arable farming** is also responsible for the loss of tropical rainforest as many farmers are clearing land to grow cash crops, such as soya beans.
- **Logging** - tropical rainforests are cut down so that valuable trees like mahogany can be sold for timber to make furniture. Other trees are cut down for making paper products.
- **Mining** - the Amazon Basin is rich in natural resources such as iron ore, copper, tin, aluminium, manganese and gold. This has led to the development of mines which results in the clearance of tropical rainforest. The Carajas mine in Brazil is the world's largest iron ore mine.
- **Roads** - the construction of access roads for farmers, loggers and miners results in large parts of the tropical rainforest being destroyed.
- **Hydroelectric power (HEP)** - The creation of HEP stations in the Amazon Basin has resulted in large areas of forest being flooded to create the reservoirs and dams. The flooding of the Balbina dam in Brazil resulted in the loss of 920 square miles of tropical rainforest.
- **Population** - population growth has resulted in the loss of tropical rainforest as land is cleared to build houses and infrastructure.

Impacts of Deforestation








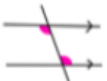

- **Soil erosion** - As trees are removed the soil is left bare and the nutrients are washed away (leached) so fewer plants grow. This means there is less food for animals.
- **Loss of biodiversity** - The habitats of animals are lost so they cannot reproduce in such large numbers. When trees are felled, plants are damaged which can kill them.
- **Increase levels of CO2** - Trees store CO2 but when they are felled, this CO2 is released back into the atmosphere. This increases the Greenhouse Gases which worsens climate change
- **Loss of oxygen** - As less oxygen is produced by the forests, the air quality declines which can increase cases of asthma.

KS3 History - Power to the People

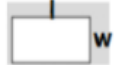
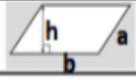
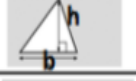
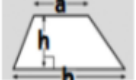
Summary: Over the last 400 years, people have protested across the globe for various reasons. We will investigate the why people protested, how they protested and what they managed to achieve. This module has really important links to what we are all living through at the moment, and will give you a crucial understanding of why we fight for our rights and what we can achieve when we do. We will be studying the following movements: Chartism, Suffragists, Suffragettes, Gandhi's peace movement, Civil Rights Movement, Black Power Movement, Stonewall, Miners Strikes, Feminist Movements.

Key concepts		Key words	
Chartist	Aim; To obtain equal voting rights for working class men Method: The 6 Point charter, Petitions, mass gatherings, pamphlets and posters Achievements: Inspired other movements and did ultimately achieve aim but 50 years later	non-violent resistance	Protesting oppression using peaceful but active methods
Suffragists	Aim; To obtain equal voting rights for women Method: Peaceful protest, petitions to Parliament, Achievements: Progress was slow and had to pause movement due to the war, they inspired the more successful Suffragettes	Decolonisation	Process of gaining independence from colonising country.
Suffragettes	Aim; To obtain equal voting rights for women Method: "Deeds not Words," protests which clashed with police, hunger strikes, damaging churches and government buildings, Emily Davison throwing herself in front of a horse, chaining to railings Achievements: In 1918 some middle class women got the vote, in 1928 all women over 21 won the right to vote.	Segregation	Separation of people into racial or other ethnic groups in daily life.
Gandhi's peace movement	Aim: To win independence for India Method: non-violent satyagraha, hunger strikes, Mass marches e.g. Salt March, Achievements: India achieved independence in 1948 however the Partition of India and Pakistan caused long-lasting issues.	Discrimination	The unfair treatment of groups of people based on their race, age or sex
Civil Rights Movement	Aim: To achieve equal rights for African Americans-focussing on obtaining full voting rights for black people, Complete desegregation and Labor Rights Method: Peaceful Direct Action including boycotts (Montgomery), Sit Ins (Greensboro) and marches (the March on Washington) Achievements: The Civil Rights Act (1964) and Voting Rights Act (1966) secured the vote and segregation however slow progress socially and economically.	Suffrage	The right to vote.
Black Power Movement	Aim; to achieve equal rights for African Americans focusing on the promotion of unity, self reliance and black pride. Method: Felt violence was sometimes the only option, Self Defence Programmes, Protests (Free Huey) Achievements: The Equal Employment Opportunity Act and the Equal Opportunity Act, Social initiatives helped thousands of people, raised international awareness as seen at the Mexico Olympics	Civil Rights	Guarantees under the law of equal social opportunities and protection under the law, regardless of race, religion, or other characteristics
Pride Movement	Aim;To gain legal and social equality for LGBTQ+ people. Method: Pride Marches, education programmes, peaceful protest and disruption, support groups and organisation Achievements: Gender Recognition Act (2004) Same Sex Marriage Bill (2014), socially have made progress in terms on education however the community still faces discrimination	Liberation	Setting someone free from imprisonment, slavery, or oppression
Miners Strike	Aim; Prevent the closure of the mines Method: Mass strikes, protests and legal action Achievements: Mines continued to close down and mining towns were economically impacted. The strikes have had a large scale cultural impact, especially in the north of England.	Campaign	A series of organised actions which are carried out for a purpose
Second Wave Feminism	Aim; Continued quest for equality for women but socially and legally. Focussing on issues such as abortion and workplace rights. Method: Lobbying politicians, mass protests, sits in. Achievements: Roe Vs Wade, security of workplace rights, The Abortion Act in the UK	Activist	A person who campaigns to bring about social or political change
		strike	Refusing to work




1. Angles

	Angles on a straight line add up to 180°
	Angles around a point add to 360°
	Vertically opposite angles are equal
	Angles in a triangle add up to 180°
	Angles in a quadrilateral add up to 360°
	Base angles in an isosceles triangle are equal
	Corresponding angles are equal
	Alternate angles are equal
	Co-interior angles add up to 180°

2. Area

	Rectangle	$l \times w$
	Parallelogram	$b \times h$
	Triangle	$\frac{b \times h}{2}$
	Trapezium	$\frac{1}{2}(a + b) \times h$

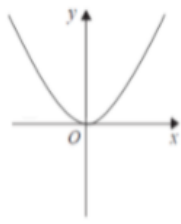
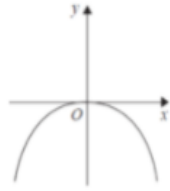
3. Circle Definitions

Area of a circle	πr^2
Circumference of a circle	πd or $2\pi r$
	Diameter
	Radius
	Circumference

4. Angles in Polygons

Sum of interior angles	$(n-2) \times 180$
Each interior angle in regular polygon	$\frac{(n-2) \times 180}{n}$
Sum of exterior angles	360°
Each exterior angle in regular polygon	$\frac{360^\circ}{n}$
Number of sides in a regular polygon	$\frac{360}{\text{exterior angle}}$
Interior + exterior angle	180°

5. Quadratic graphs (Higher Only)

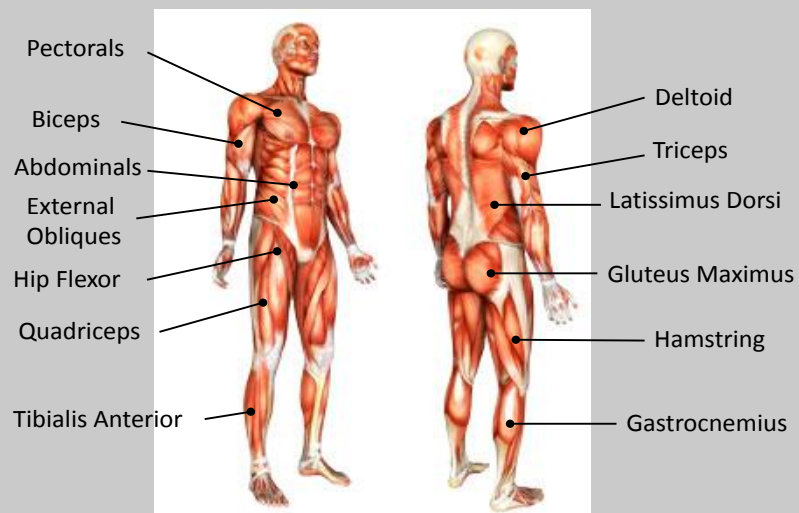
	$y = x^2$
	$y = -x^2$

Blues and Choral Music

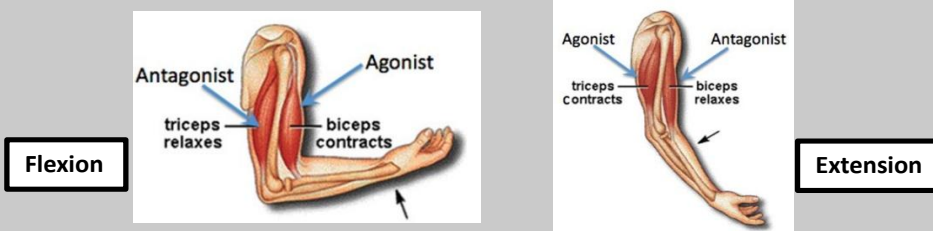
Element	Core knowledge [this will be in your assessment]	Blues Context
Melody	<ul style="list-style-type: none"> Blues scale - <i>a set of notes used in blues</i> Riff - <i>a short repeating melody</i> Walking bass - <i>a bassline based on chord tones and playing on every beat</i> Fill - <i>short, improvised solo</i> 	<ul style="list-style-type: none"> Grew from work songs sung by slaves in the US Later included instruments Often sad lyrics <p>Recommended Listening:</p> <ul style="list-style-type: none"> Chuck Berry BB King Elizabeth Cotten Billie Holiday
Articulation	<ul style="list-style-type: none"> Pitch bend - <i>bending a string to change its pitch</i> Double stopping - <i>playing two strings at once</i> 	
Dynamics	<ul style="list-style-type: none"> Stabs - <i>sudden, loud chords</i> Forte/ Piano - <i>Loud/ Soft</i> Mezzo Forte/ Mezzo Piano - <i>quite loud / quite soft</i> 	
Texture	<ul style="list-style-type: none"> Polyphonic - <i>many layers of sound</i> Monophonic - <i>one layer of sound</i> Homophonic - <i>melody and accompaniment</i> 	
Structure	<ul style="list-style-type: none"> Stop time - <i>alternating between stabs and</i> Call and response - <i>a group responds to a call from a single musician</i> 12 bar blues - <i>the typical blues chord sequence, uses primary chords (I, IV, V)</i> 	<h3>Choral Music Context</h3>
Harmony	<ul style="list-style-type: none"> 7th Chords - <i>four note chords with a root, 3rd, 5th and 7th</i> 4 part harmony - <i>chords performed by 4 voices or instruments</i> 	<ul style="list-style-type: none"> Gospel - American South, late 19th century Long history of classical choral music <p>Recommended Listening:</p> <ul style="list-style-type: none"> Oh Happy Day from Sister Act II Hallelujah chorus, Handel
Instrumentation	<ul style="list-style-type: none"> Soprano / Alto - <i>high/ low female voice</i> Tenor / Bass - <i>high/ low male voice</i> 	
Rhythm	<ul style="list-style-type: none"> Syncopation - <i>notes on an offbeat</i> Swing - <i>alternating long and short notes</i> 	
Tempo/ Time Signature	<ul style="list-style-type: none"> Allegro - <i>fast</i> Andante - <i>walking pace</i> Adagio - <i>slow</i> 	

The structure and functions of the muscular system

Structure of the muscular system



Antagonistic pairs - Muscles are arranged in antagonistic pairs. As one muscle contracts (shortens) its partner relaxes (lengthens) *i.e.* **Biceps and Triceps**.



Agonist = the muscle that contracts to produce movement.
Antagonist = the muscle that relaxes to allow the movement to occur.

Examples in the body:

- Biceps & Triceps
- Quadriceps & Hamstring
- Hip Flexor & Gluteus Maximus
- Tibialis Anterior & Gastrocnemius

Types of muscle

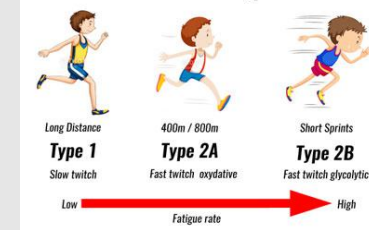
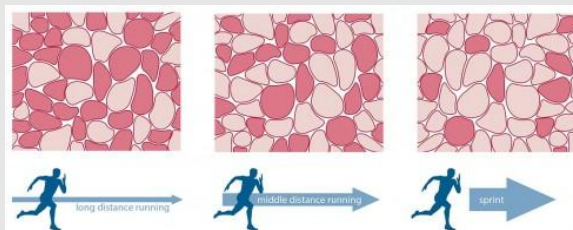
Voluntary muscles enable movement throughout the body.	Involuntary muscles are essential in maintaining healthy body systems.	Cardiac muscle is vital in sport because it makes the heart pump. Fitness training will strengthen cardiac muscle making the heart more efficient at pumping blood around the body.

The short term effects of exercise on the muscles:

1. Working muscles produce heat
2. Increased muscle fatigue due to lactate accumulation
3. Blood is redistributed to working muscles (Shunting)

Muscle fibre types

Slow twitch muscle fibres (Type I)	Fast twitch muscle fibres (Type IIa)	Fast twitch muscle fibres (Type IIx/b)
<ol style="list-style-type: none"> 1. Smaller in size. 2. Work aerobically with high fatigue resistance. 3. Have a good oxygen supply = deep red in colour. 4. They contract slowly, but can work for long periods. <p>Marathon runner</p>	<ol style="list-style-type: none"> 1. Larger in size 2. Work anaerobically & linked to high intensity activities. 3. Are paler in colour and have limited oxygen supply. 4. They contract quickly and powerfully, but tire easily. <p>400/800m runner</p>	<ol style="list-style-type: none"> 1. Large in size 2. Work anaerobically & linked to extreme high intensity activities. 3. Very high speed of contraction but low fatigue resistance. <p>100m Sprinter</p>



Link of the muscular and skeletal system – both systems work together to produce movement. *i.e.* a contracting muscle pulls on a bone which changes the angle at a joint.

Marriage and the Family – Christianity

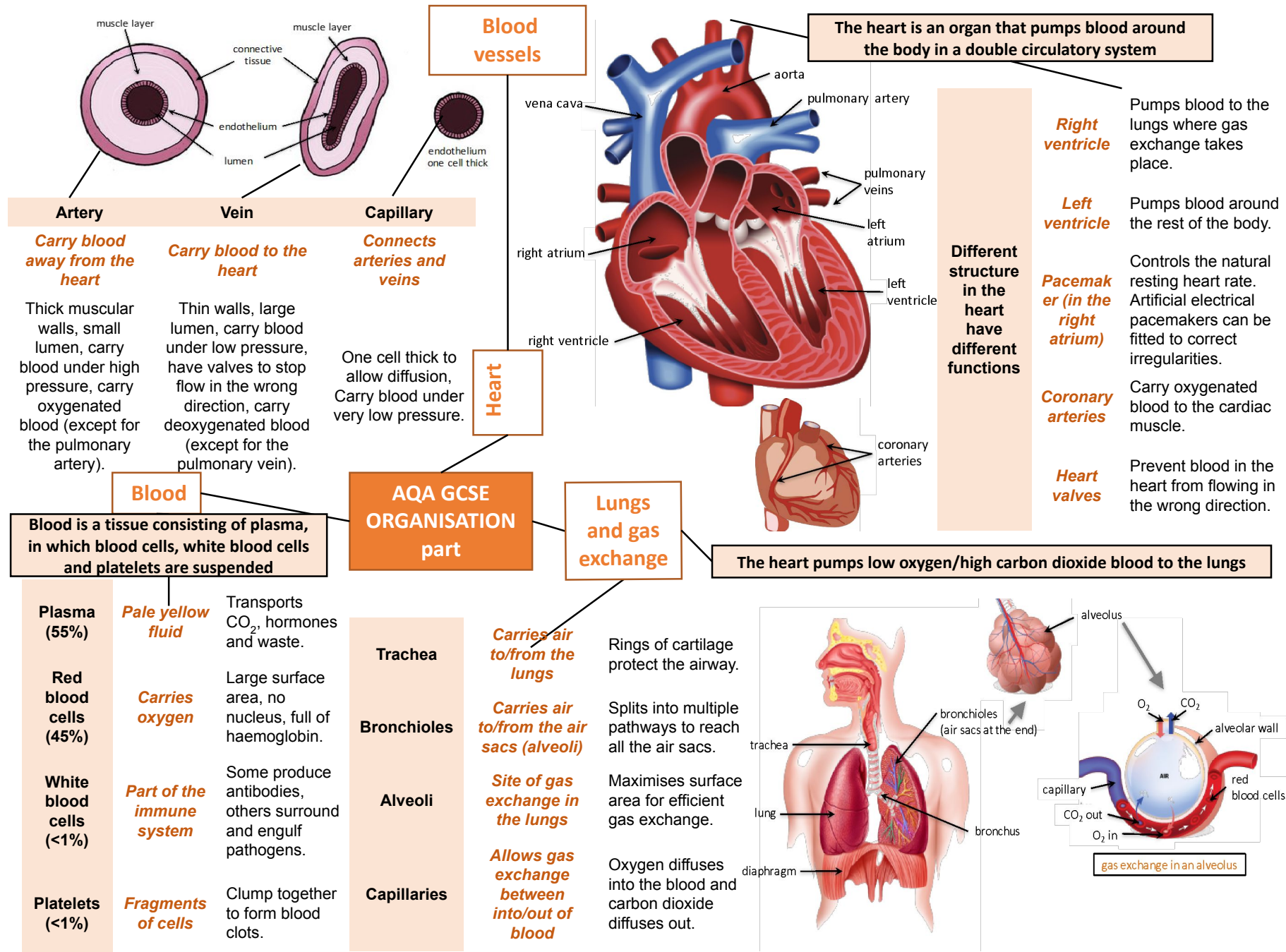
Topic	Christian Arguments	Arguments Against Christianity
Marriage	<ul style="list-style-type: none"> Christians think marriage is a holy gift from God Married couples should be faithful to one another for life. God intended from creation that men and women should marry. God joins the couple together and their relationship should be respected by others. Some say people should only live together if they are married. 	<ul style="list-style-type: none"> Marriage is a way of two people showing their commitment to each other publically, but doesn't hold religious significance. Atheists and Humanists see marriage as a legal contract. Faithfulness is important in as much as it avoids harm for a partner. Cohabitation is acceptable as couples can get to know each other.
Sexual relationships	<ul style="list-style-type: none"> Most think sex should be within a marriage. Most think a marriage should be for life and be heterosexual. Liberal view is that sex outside of marriage is ok if the couple love each other and are committed to a long term relationship. Adultery is wrong. Some class remarriage as adultery. Homosexuality is interpreted differently by Christians: <ul style="list-style-type: none"> Catholics condemn acting on homosexual feelings. Some see homosexuality as a variation of God's plan. 	<ul style="list-style-type: none"> Humanists think that freedom of sexuality is ok as long as harm is not caused. This might make promiscuity ok. Gay pride advocates would encourage the celebration of gay relationships. Humanists would encourage freedom of expression (including sexual relationships). So would condemn states who make homosexuality illegal. Some Atheists may oppose homosexuality due to culture or social reasons.
Families	<ul style="list-style-type: none"> Families are recognised in different ways: nuclear, same sex, extended, single-parent and blended. Christians believe family life is important and Catholics believe this can only be possible in a heterosexual family. 	<ul style="list-style-type: none"> Humanists believe that the family is any unit which shares resources and supports each other. People should not be forced to form families if they don't want to. Sometimes there are legitimate reasons like hereditary genetic illnesses, infertility or career focus which stands in the way.
Contraception	<ul style="list-style-type: none"> Most opposed artificial methods until the 20th Century. Catholics only approve natural contraception (e.g withdrawal). Anglican churches (e.g. Church of England) allow artificial methods. Most Christians would follow their conscience if they were unsure. 	<ul style="list-style-type: none"> Most non-religious views focus on the wider implication of contraception. If the result of the baby not being born would produce more pleasure or less pain, utilitarians would accept it. Humanists would make their decision based on all children being wanted.
	<ul style="list-style-type: none"> Situation Ethics would make the decision based on the most loving outcome for everyone involved. So this could be either to use it or not. 	
Divorce	<ul style="list-style-type: none"> Most Christians believe that divorce is not encouraged. Catholics think breaking the vows partners say in front of God is a sin and contravening God's law. Only nullifying a marriage is accepted (if the marriage wasn't acceptable in the eyes of God). Remarriage is not accepted by Catholics if divorce has happened. Protestants accept divorce as God is forgiving. 	<ul style="list-style-type: none"> Divorce is legal in the UK on 5 grounds: Adultery, unreasonable behaviour, desertion, 2 years' separation with consent and 5 without. Humanists would say that adults should be able to divorce if they feel it is right for them and will end a negative relationship. Some atheists may disapprove divorce for social or cultural reasons.
Equality in the family	<ul style="list-style-type: none"> Most Christians believe that men and women are equal as they were created equally by God. Some believe that God created men first and so men are more superior. This is added to by Eve's transgression of encouraging man to sin. Other Christians believe that women are equal but different. This includes different roles but the belief that equality of women should be observed 	
Gender, Prejudice and discrimination	<ul style="list-style-type: none"> The bible teaches equal respect for men and women (Jesus and St Paul). Some Christian traditions suggest discrimination towards women. Women vow to 'obey' their husbands and are not able to be clergy in Catholicism. 	

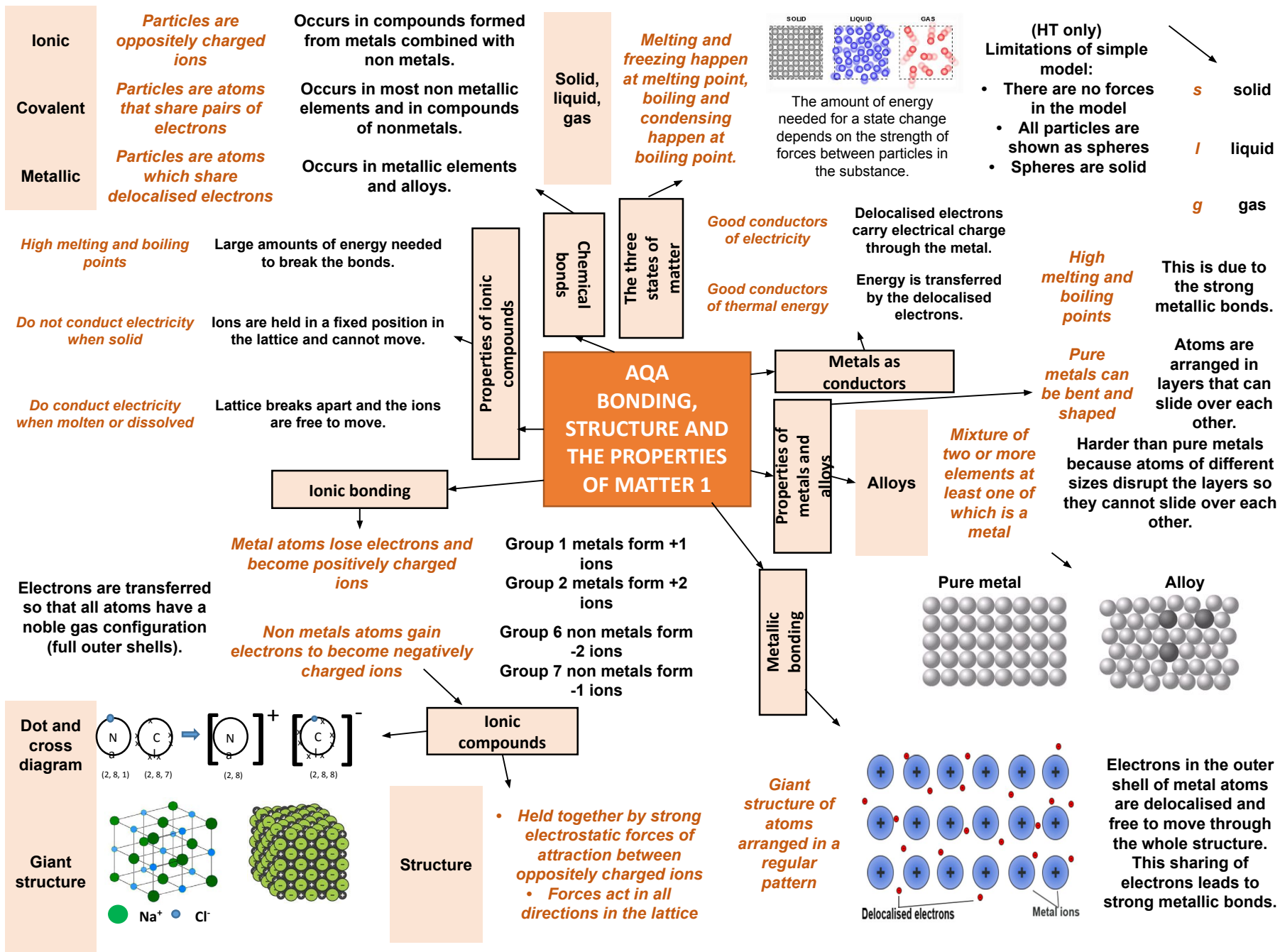
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Key Quotes	Linked Topics
<i>'For this reason a man will leave his father and mother and be united to his wife, and the two will become one flesh' (Genesis 2:24)</i>	Marriage, sexual relationships, divorce
<i>'Therefore what God has joined together, let no one separate' (Mark 10:6-9)</i>	Marriage, sexual relationships, divorce
<i>'You should not commit adultery' (exodus 20:14)</i>	Marriage, sexual relationships, divorce
<i>'The sexual act must take place exclusively within marriage. Outside marriage it always constitutes a grave sin. (Catechism of the Catholic Church)</i>	Marriage, sexual relationships, divorce
<i>'Do not have sexual relations with a man as one does with a woman; that is detestable' (Leviticus 18:22)</i>	Marriage, sexual relationships
<i>'Whoever sins sexually, sins against their own body...therefore honour God with your bodies' (1 Corinthians 6: 18-20)</i>	Sexual relationships
<i>'Be fruitful and increase in number' (Genesis 1 27:28)</i>	Contraception, families, sexual relationships
<i>'Anyone who divorces his wife, except for sexual immorality' (Matthew 19: 6-9)</i>	Divorce, sexual relationships
<i>'There is neither Jew nor Gentile, neither slave, nor free, nor is there male or female, for you are all one in Christ Jesus' (Galatians 3: 26-29)</i>	Gender and Equality
<i>'Though marriage is a useful social institution, humanists do not believe that it is 'sacred'. (British Humanist Association)</i>	Marriage, Divorce, Sexual relationships

Key Words	Meaning
Annulment	Declaration that a marriage is null and void; in effect, as if it had never happened, for reasons such as being underage or forced to marry.
Divorce	The legal ending of a marriage.
Faithfulness	Not having a sexual relationship with anyone other than a partner.
Marriage	The legal union of a man and a woman or a same-sex couple.
Sanctity of Marriage	The idea that marriage has a special significance as a holy gift of God.
Cohabitation	Living together in a sexual relationship but without legalising the union through marriage.
Humanist	A non-religious person who looks to reason and empathy in order to live a meaningful life.
Abstinence	Choosing to restrain oneself from doing something, for example, having sex or eating food (fasting).
Heterosexuality	Sexual attraction to members of the opposite sex.
Homosexuality	Sexual attraction to members of the same sex.
Promiscuity	Sexual relations with multiple partners on a casual basis.
Pride or Gay Pride	A social movement encouraging homosexual people to express their sexuality openly and with self-esteem.
Procreation	To have sex and produce children.
Nuclear family	Two parents who may be married or unmarried, and their children all living together.
Blended family	Parents living together with children that one or both of them had in previous relationships.
Christingle	A lighted candle symbolising Jesus as the light of the world. Often carried by children in church celebrations around Christmas time.
Rites of Passage	Events marking key stages in the life of a Christian.
Conception	The moment when a sperm fertilises an egg, creating an embryo that can develop into a baby.
Contraception	Artificial and natural methods of preventing pregnancy; also known as birth control.
Situation Ethics	Ethical decisions made according to the specific context of the decision. With the most loving thing in mind.
Equality	Treating people in the same way irrespective of differences such as sex, race, education or sexuality.
Prejudice	Making judgements about people on the basis of differences such as sex, race, education or sexuality.
Discrimination	Acting upon prejudice and causing harm to the target.

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AQA BONDING, STRUCTURE AND THE PROPERTIES OF MATTER 2

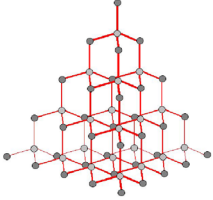
Very large molecules

Solids at room temperature

Atoms are linked by strong covalent bonds.

C=C
 \rightarrow
 $(\text{C}_n\text{H}_{2n})_n$

Each carbon atom is bonded to four others



Very hard.

Very high melting point.

Does not conduct electricity.

Rigid structure.

Strong covalent bonds.

No delocalised electrons.

Usually gases or liquids

Covalent bonds in the molecule are strong but forces between molecules (intermolecular) are weak

Low melting and boiling points.

Do not conduct electricity.

Larger molecules have higher melting and boiling points.

Due to having weak intermolecular forces that easily broken.

Due to them molecules not having an overall electrical charge.

Intermolecular forces increase with the size of the molecules.

Properties of small molecules

Polymer

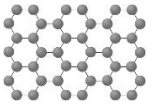
Diamond

Giant covalent structures

Diamond, graphite, silicon dioxide

Covalent bonding

Graphene



Single layer of graphite one atom thick

Excellent conductor.

Very strong.

Contains delocalised electrons

Contains strong covalent bonds.

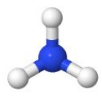
Graphene and fullerenes

Atoms share pairs of electrons

Can be small molecules e.g. ammonia

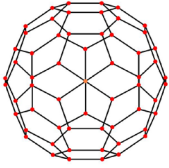
N

2D with bonds:
+ Show which atoms are bonded together
- It shows the H-C-H bond incorrectly at 90°



3D ball and stick model:
+ Attempts to show the H-C-H bond angle is 109.5°

Fullerenes

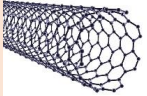


Buckminsterfullerene, C₆₀
First fullerene to be discovered.

Hexagonal rings of carbon atoms with hollow shapes. Can also have rings of five (pentagonal) or seven (heptagonal) carbon atoms.

Can be giant covalent structures e.g. polymers

Carbon nanotubes



Very thin and long cylindrical fullerenes

Very conductive.

High tensile strength.

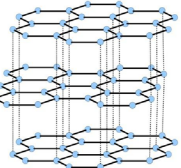
Large surface area to volume ratio.

Used in electronics industry.

Reinforcing composite materials.

Catalysts and lubricants.

Each carbon atom is bonded to three others forming layers of hexagonal rings with no covalent bonds between the layers



Graphite

Slippery.

Very high melting point.

Does conduct electricity.

Layers can slide over each other.

Strong covalent bonds.

Delocalised electrons between layers.

FOUNDATION: Festivales y vacaciones (THEME 1- Festivals / THEME 2: Holidays)

1.1. ¿Has visitado alguna fiesta o festival en España? / Describe un festival español (Have you visited a party/ festival in Spain? / Describe a Spanish festival) [Quizlet list 1.1](#)

El año pasado <i>Last year</i>	Fui a <i>I went to</i>	La Tomatina en Buñol	Me gustó mucho ya que <i>I liked it a lot because</i>	Fue muy emocionante <i>It was very exciting</i>	La Tomatina en Buñol	Consiste en <i>Consists in</i>	Lanzar tomates a distintas personas en la calle y es en Agosto. <i>To throw tomatoes to different people on the street and it is in August.</i>
La semana pasada <i>Last week</i>	Visité <i>I visited</i>	Los Sanfermines en Pamplona		Fue muy entretenido <i>It was very entertaining</i>	Los Sanfermines en Pamplona		Correr delante de los toros y es en julio. <i>To run in front of bulls and it is in July.</i>
El mes pasado <i>Last month</i>	Fuimos a <i>We went to</i>			El día de los Muertos en México			Fue bastante peligroso <i>It was quite dangerous</i>
	Visitamos <i>We visited</i>		No me encantó nada ya que <i>I didn't love it at all because</i>	No fue muy divertido <i>It wasn't very funny</i>			

1.2. ¿Adónde fuiste de vacaciones la última vez? (Where did you go on holiday last time? [Quizlet list 1.2](#))

El verano pasado <i>Last summer</i>	Fui a <i>I went to</i>	México / Japón	Hizo buen tiempo / hizo mal tiempo <i>The weather was good / the weather was bad</i>	Me alojé en un hotel de cinco estrellas <i>I stayed in a five-stars hotel</i>
El año pasado <i>Last year</i>	Visité <i>I visited</i>	Grecia/ Colombia Italia / China India / El Caribe Alemania / Argentina	Llovió mucho <i>It rained a lot</i>	Nos alojamos en un apartamento con dos camas dobles <i>We stayed in an apartment with two double beds</i>
La semana pasada <i>Last week</i>	Mi familia y yo fuimos a <i>My family and I went to</i>	Suiza/ Los Estados Unidos Portugal Perú /España Marruecos/Nigeria	Hizo mucho sol / calor <i>It was sunny / hot</i>	
El mes pasado <i>Last month</i>	Mis amigos y yo visitamos <i>My friends and I visited</i>		Hizo mucho frío <i>It was cold</i>	Nos alojamos en un chalet <i>We stayed in villa</i>

FOUNDATION: Festivales y vacaciones (THEME 1- Festivals / THEME 2: Holidays)

1.3. ¿Qué hiciste y qué te gustaría hacer en tus vacaciones?: (What did you do during your holidays?/ What would you like to do during your holidays?) [Quizlet list 1.3](#)

El verano pasado <i>Last summer</i>	Fui en avión /barco / coche <i>I went by plane / boat /car</i>	Me gustó mucho visitar... <i>I liked visiting a lot...</i>	Los monumentos históricos <i>The historic monuments</i> La catedral antigua <i>The old cathedral</i>	Si fuera posible, me gustaría visitar <i>If I were possible, I'd visit</i>	La Tomatina en Buñol Los Sanfermines en Pamplona El Carnaval de Cadiz	Puesto que es muy turístico <i>Because it is very touristic</i> Porque la comida allí es muy deliciosa <i>Because the food there is very delicious</i>
	El año pasado <i>Last year</i>	Fuimos en tren/autobús <i>We went by train/bus</i>	Nos encantó bastante ir a... <i>We quite liked go to</i>			
El verano próximo <i>Next summer</i>	Me gustaría ir en avión <i>I'd like to go by plane</i>	Sin embargo, me molaría hacer <i>However, I'd like to do</i>	Submarinismo / vela <i>Scuba diving / sailing</i>	Me gustaría ir a... <i>I'd like to go to</i>	Portugal Perú España Marruecos	ya que me encantan sus paisajes <i>Because I love its landscape</i> Puesto que tiene un buen clima <i>Because it has a good climate</i>
	El año que viene <i>Next year</i> Si fuera posible <i>If it were possible</i>	Nos molaría ir en barco <i>We would like to go by boat</i>	Aunque nos encantaría hacer <i>Although we would love to do</i>			

1.4. ¿Cuál es tu rutina durante tus vacaciones? Verbos reflexivos (What is your routine during your holidays?) Reflexive verbs [Quizlet list 1.4](#).

Durante mis vacaciones, primero <i>During my holidays, first</i> Después <i>after</i>	Me levanto a las... + time - <i>I wake up at...</i> Me ducho - <i>I take a shower</i> Me visto- <i>I get dressed</i> Desayuno - <i>I have breakfast</i> Como - <i>I eat / ceno - I have dinner</i> Visitamos- <i>we visit</i> Me acuesto a las + time - <i>I go to sleep at...</i>	Por la mañana- <i>in the morning</i> Por la tarde- <i>in the afternoon</i> Por la noche- <i>in the evening</i>	Me lavo los dientes- <i>I brush my teeth</i> Me peino- <i>I comb my hair</i> Me maquillo- <i>I put makeup on</i> Me acuesto a siesta- <i>I have a nap</i> Me relajo- <i>I relax</i>
Pero en mis últimas vacaciones <i>But in my last holidays</i>	Me levanté a las...+ time - <i>I got up at</i> Me vestí- <i>I got dressed</i> Salí a las.. + time - <i>I went out at</i> Me dormí a las + time - <i>I fell asleep at</i>	Pero mi hermano- <i>but my brother</i> Aunque mi hermana- <i>although my sister</i>	Se lava los dientes- <i>he/she brushes his/her teeth</i> Se peina- <i>he/she combs his/her hair</i> Se maquilla- <i>He/She puts makeup on</i> Se acuesta a siesta- <i>He/she has a nap</i> Se relaja- <i>He/she relaxes</i>

HIGHER: Festivales y vacaciones (THEME 1- Festivals / THEME 2: Holidays)

1.1. ¿Has visitado alguna fiesta o festival en España? / Describe un festival español (Have you visited a party/festival in Spain? / Describe a Spanish festival) [Quizlet list 1.1](#)

El año pasado <i>Last year</i>	Fui a ver <i>I went to see</i>	La Tomatina en Buñol	Me gustó mucho ya que <i>I liked it a lot because</i>	Fue muy emocionante <i>It was very exciting</i>	La Tomatina en Buñol	Consiste en <i>Consists in</i>	Lanzar tomates a distintas personas en la calle y tiene lugar en Agosto. <i>To throw tomatoes to different people on the street and it takes place in August.</i>
La semana pasada <i>Last week</i>	Visité <i>I visited</i>	Los Sanfermines en Pamplona	Me encantó bastante porque <i>I quite loved it because</i>	Fue impresionante <i>It was amazing</i>	Los Sanfermines en Pamplona		Correr delante de los toros hasta llegar a la plaza de toros y tiene lugar en julio. <i>To run in front of bulls until getting to the bullring and it takes place in July.</i>
El mes pasado <i>Last month</i>	Fuimos a ver <i>We went to see</i>	Las Fallas en Valencia	No me moló nada dado que <i>I didn't like it at all because</i>	Fue bastante peligroso <i>It was quite dangerous</i>	Las Fallas en Valencia	Es una fiesta donde <i>It is a party/festival where...</i>	Se tiran petardos, se crean figuras de distintos materiales y se queman de manera controlada. Normalmente ocurren en marzo. <i>Firecrackers are thrown, figures of different materials are created and burnt in a controlled way. It normally happens in March.</i>
Ayer <i>Yesterday</i>	Visitamos <i>We visited</i>	La Feria De abril en Sevilla	No me encantó nada ya que <i>I didn't love it at all because</i>	No fue muy divertido <i>It wasn't very funny</i>	La Feria De abril en Sevilla		La gente se reúne para ir de fiesta, montar a caballo, bailar sevillanas y beber rebujito. Además, tiene lugar en primavera. <i>People gather to party, ride horses, dance Sevillian dances and drink an Andalusian cocktail. In addition, it takes place in spring.</i>
Hace cinco años <i>Five years ago</i>		El día de los Muertos en México		No fue muy interesante <i>It wasn't very interesting</i>	El día de los Muertos en México		Se hace honor a los amigos y familiares muertos poniendo flores y fotos en un altar. <i>Friends and relatives are honoured by putting flowers and pictures in an altar</i>
Hace tres semanas <i>Three weeks ago</i>							
Hace cuatro meses <i>Four months ago</i>							

1.2. ¿Adónde fuiste de vacaciones la última vez? (Where did you go on holiday last time?) [Quizlet list 1.2](#)

El verano pasado <i>Last summer</i>	Fui a <i>I went to</i>	México / Japón	Hizo buen tiempo / hizo mal tiempo <i>The weather was good / the weather was bad</i>	Me alojé en un hotel de cinco estrellas con vistas al mar <i>I stayed in a five-stars hotel with sea views</i>
El año pasado <i>Last year</i>	Visité <i>I visited</i>	Grecia/ Colombia	Llovió mucho <i>It rained a lot</i>	Nos alojamos en un apartamento en una habitación con dos camas dobles <i>We stayed in an apartment in a room with two double beds</i> Nos alojamos en un chalet a diez metros de la playa <i>We stayed in villa that was ten metres away from the beach</i>
La semana pasada <i>Last week</i>		Italia / China	Hizo mucho sol / calor <i>It was sunny / hot</i>	
El mes pasado <i>Last month</i>	Mi familia y yo fuimos a <i>My family and I went to</i>	Francia/ Nigeria	Hizo mucho frío <i>It was cold</i>	Mi hermano/a se alojó en un hostel <i>My brother/sister stayed in a hostel</i> Mi mejor amigo/a se alojó en un camping con una tienda de campaña <i>My best friend stayed in a camping with a tent</i>
Ayer <i>Yesterday</i>	Mis amigos y yo visitamos <i>My friends and I visited</i>	India / El Caribe	Hubo tormentas <i>There were storms</i>	
Hace cinco años <i>Five years ago</i>		Alemania / Argentina	Estuvo nublado <i>It was cloudy</i>	
Hace tres semanas <i>Three weeks ago</i>	Mi hermano/a fue a <i>My brother/sister went to</i>	Suiza/ Los Estados Unidos	Negó demasiado <i>It snowed a lot</i>	
	Mi mejor amiga/o visitó <i>My best friend visited</i>	Holanda		
		Portugal		
		Perú		
		España		
		Marruecos		

HIGHER: Festivales y vacaciones (THEME 1- Festivals / THEME 2: Holidays)

1.3. ¿Qué hiciste y qué te gustaría hacer en tus vacaciones?: (What did you do during your holidays?/ What would you like to do during your holidays?) [Quizlet list 1.3](#)

El verano pasado <i>Last summer</i> El año pasado <i>Last year</i> Durante mis últimas vacaciones <i>During my last holidays</i>	Viajé en avión /barco / coche <i>I travelled by plane / boat /car</i> Fui en en avión /barco / coche <i>I went by plane / boat /car</i>	Me gustó mucho visitar... <i>I liked visiting a lot...</i> Me moló mucho ir a... <i>I liked to go a lot...</i>	Los monumentos históricos <i>The historic monuments</i> La catedral antigua <i>The old cathedral</i> Los museos de arte <i>The art museums</i> Las playas tranquilas <i>The calm beaches</i> Las instalaciones deportivas <i>The sport facilities</i>	Si ganara la lotería, iría a <i>If I won the lottery, I'd go to</i> Si fuera rico/a, visitaría <i>If I were rich, I'd visit</i>	La Tomatina en Buñol Los Sanfermines en Pamplona Las Fallas en Valencia La Feria De abril en Sevilla El Carnaval de Cadiz	Puesto que tiene lugar en una zona muy turística <i>Because it takes place in a very touristic area</i> Porque la comida allí es conocida en el mundo entero <i>Because the food there is known in the whole world</i>
	Viajamos en tren/autobús <i>We travelled by train/bus</i> Fuimos en tren/autobús <i>We went by train/bus</i>	Nos gustó bastante visitar... <i>We quite liked visiting</i> Nos encantó bastante ir a... <i>We quite liked go to</i>	Submarinismo / vela <i>Scuba diving / sailing</i> Deportes acuáticos / senderismo <i>Water sports / hiking</i> Equitación <i>Horse riding</i> Compras <i>shopping</i>	Me habría gustado ir a <i>I'd have liked going to...</i> Quisiera ir a... <i>I'd like to go to</i>	Portugal Perú España Marruecos	Debido a la variedad de sus paisajes <i>Due to the variety of its landscape</i> Puesto que tiene un clima agradable <i>Because it has a nice climate</i>
El verano próximo <i>Next summer</i> El año que viene <i>Next year</i> Si fuera posible <i>If it were possible</i> Si tuviera la oportunidad <i>If I had the chance</i>	Me gustaría viajar en avión <i>I'd like to visit by plane</i>	Sin embargo, me molaría hacer <i>However, I'd like to do</i>				
Nos molaría ir en barco <i>We would like to go by boat</i>	Aunque nos encantaría hacer <i>Although we would love to do</i>	Por otro lado, a mi hermana/o le molaría hacer <i>On the other hand, my sister/brother would like to do</i>				
A mi hermana/ hermano le encantaría ir en tren <i>My sister/brother would like to travel by train</i>						

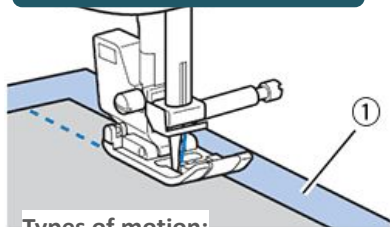
1.4. ¿Cuál es tu rutina durante tus vacaciones? Verbos reflexivos (What is your routine during your holidays?) Reflexive verbs [Quizlet list 1.4.](#)

Durante mis vacaciones, primero <i>During my holidays, first</i> Después <i>after</i> Más tarde <i>Later</i>	Me levanto a las... + time - I wake up at... Me ducho - I take a shower Me visto- I get dressed Desayuno - I have breakfast Como - I eat / ceno - I have dinner Visitamos- we visit Me acuesto a las + time - I go to sleep at...	Por la mañana- in the morning Por la tarde- in the afternoon Por la noche- in the evening Si tengo tiempo- If I have time	Me lavo los dientes- I brush my teeth Me peino- I comb my hair Me maquillo- I put makeup on Me acuesto a siesta- I have a nap Me relajo- I relax
Pero en mis últimas vacaciones <i>But in my last holidays</i> Sin embargo, en el pasado <i>However in the past</i>	Me levanté a las...+ time - I woke up at Me vestí- I got dressed Salí a las.. + time - I went out at Me dormí a las + time - I fell asleep at	Pero mi hermano- but my brother Aunque mi hermana- although my sister Sin embargo, mi padre a veces- However, my dad sometimes	Se lava los dientes- he/she brushes his/her teeth Se peina- he/she combs his/her hair Se maquilla- He/She puts makeup on Se acuesta a siesta- He/she has a nap Se relaja- He/she relaxes

Year 9

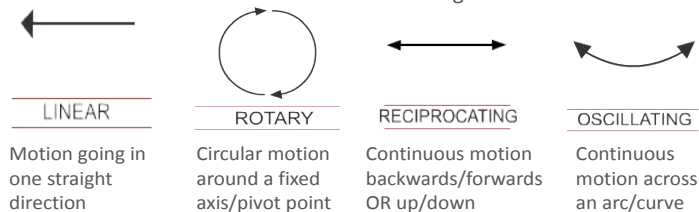
Textiles

Mechanisms in Textiles

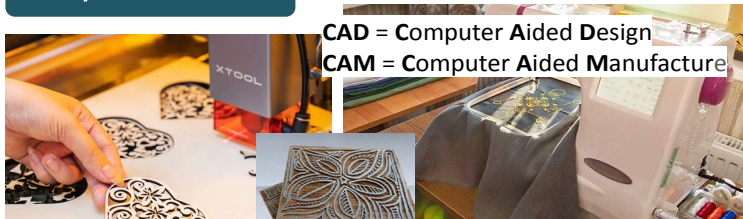


The sewing machine is a complicated piece of equipment that has multiple **mechanisms** working together in a **mechanical system** to convert **motion** and control **forces**. Eg as the foot pedal is pressed this causes needle to move up and down and the feed dogs pull the fabric through, therefore creating a secure stitch

Types of motion:



CAD/CAM in Textiles



CAD = Computer Aided Design
CAM = Computer Aided Manufacture

CAD (2d Design) can be used to create a design or part of your design which can be sent to a machine (**CAM** - laser cutter or CNC embroidery machine) which helps to make the design.

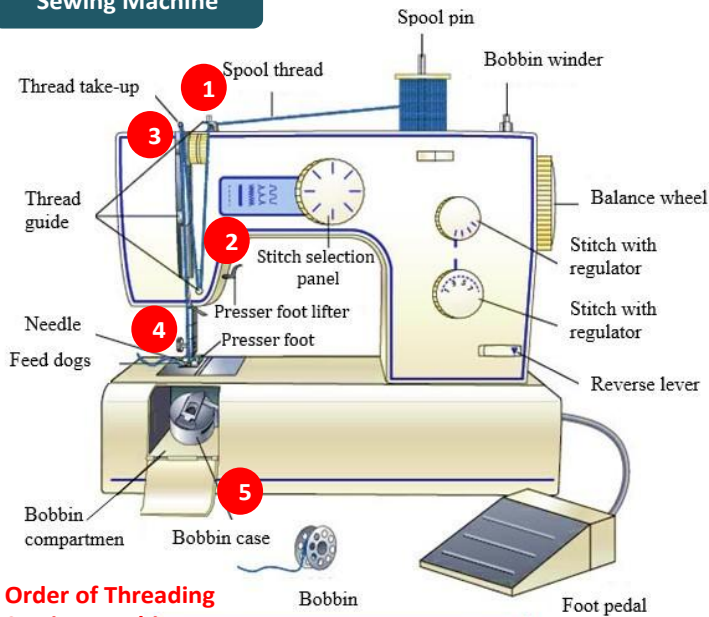
Advantages:

- Quicker
- Changes can be easily made
- More/repeat numbers can be made
- Cheaper as a result of being quicker to make
- Easily customised
- Can be shared internationally via email
- Increased accuracy

Disadvantages:

- Requires training to be confident in software
- Machines/Software can be initially very expensive
- Specialists are needed if machines breakdown
- High use of energy
- Could replace skilled workers with machines

Sewing Machine



Order of Threading Sewing Machine Up

Tie-Dye



Tie-dye is a resist dyeing technique. It is called this because the tying and manipulating of the fabric (twisting, folding, scrunching) stops (resists) the dye from being absorbed.

Block printing is a relief printing technique that uses a carved material (typically wood, linoleum, or rubber) to transfer ink onto fabric or paper.

Block Printing



Applique



1. Cut your pattern piece using paper & scissors
2. Use a pin to attach your pattern to the fabric.
3. Cut around your pattern and once complete, remove your pin
4. Use a pin to attach to your larger piece of fabric
5. Stitch around the edge to secure in place

Embroidery Stitches



Embroidery is the craft of decorating fabric using a needle to apply **thread**. Embroidery stitches can also be used to hold applique in place.

TEXTILES

Classification of Fibres

A **fibre** is fine like hair in structure. Fibres that are **twisted** together are called **thread/yarn**. **Fabric** is **cloth** that is **made from fibres or yarn**. Depending on where they come from and how they are made, gives the fabric different characteristics and therefore suits different functions. Fibres are split into two categories:

Natural Fibres

Spinnable substances existing in **nature**

Animal

Silk
Wool



Plant

Cotton - Cotton Plant
Calico - Cotton Plant
Linen - Flax Plant
Hessian - Jute Plant



Manufactured Fibres

Spinnable substances manufactured by **man**

Synthetic

Synthetic fibres are made from processed chemicals

Polyester
Nylon
Lycra



Regenerated

Regenerated fibers are produced from polymers (fibres) occurring in nature (e.g., viscose, rayon from the cellulose in wood pulp)

Rayon
Viscose



*Felt can be made using Synthetic fibres such as acrylic or Natural fibres such as animal fur
** Leather is not a fabric as it is not made up of fibres or yarns - it is a skin of an animal

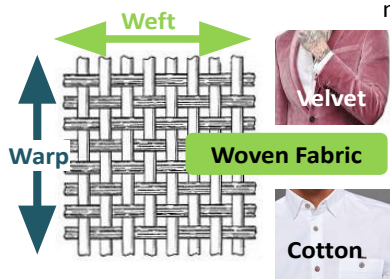
Properties and characteristics of fibres and fabrics.

Fabrics and fibres have different characteristics (soft, smooth, fluffy, shiny) and properties - **what the fabric can do/how it can behave**. For instance **wool** is heat insulating and has some elasticity (property) but it is soft to feel (characteristics).

- Absorbency:** A material that soaks up liquid or moisture
- Water-Repellent:** A material that is completely resistant to water as a result of being hydrophobic
- Strength:** The behaviour of materials when forces are applied to them (pulled, tension, stress)
- Durability:** Long lasting and hard wearing
- Anti-static:** A material that does not build-up of static electricity
- Insulation:** Prevention or reduction of heat loss
- Elasticity:** How much a material can stretch and then return to its original position
- Resistance to:** How well a material can stop or prevent reacting to something - eg. bleach, sunlight, chemicals, creasing
- Flammability:** The ability to ignite and burns rapidly with a flame

Construction of Fabric

Fabrics are made from yarns, which are held together by **weaving** or **knitting**. Fabrics can also be made from **bonded fibres**.



Woven fabrics are made interlacing two sets of yarn, the warp and weft
Different coloured yarns can be woven together to create a pattern. Woven fabric is more structured and will hold its shape, that is why it is often used for shirts, blazers/suits and trousers.

Knitted Fabric



Knitted fabrics are made by interlocking one or more yarns together using loops
As a result of the interlocking loops, knitted fabrics are more flexible and elastic, that is why they are often used for socks, jumpers and sports clothing that allows movement

Bonded Fabric



Bonded fabrics are webs of fibres which are held together by glue, stitches or heat
There are **two** types of Bonded Fabric - Felted and Non Woven Fabrics. Both are formed by through compressions but in felted fabrics no glue is used

	Properties/Characteristics	Uses
Silk	Silk has a smooth texture and is one of the strongest natural fibres. It is also warm and crease resistant. However, it can be static and needs to be dry cleaned.	Evening wear, ties and scarves.
Wool	Heat insulating, soft, however can shrink when washed and it is not as durable as other natural fabrics like cotton and silk	Warm Clothing, suits, blankets and furniture upholstery
Linen	Linen is strong and cool to wear, but not very crease resistant.	tea towels, table cloths and summer clothing.
Cotton	Like linen, cotton is strong and cool to wear, but not very crease resistant.	jeans, shirts, T-shirts, sheets and towels.
Polyester	Polyester tends to feel slippery and silky. It can be blended with other fabrics, for example cotton, to provide more stretch or to reduce skin irritation.	All sorts of clothing, often as part of a blended fabric.
Nylon	lightweight, strong, durable and resistant to damage. It takes dye easily and so is available in a wide range of colours.	swimwear, tights and outdoor clothing and equipment such as tents.
Rayon Satin is made from Rayon	Rayon absorbs moisture so it is cool but warm and washes well. However, it is not very strong, is highly flammable and easily damaged.	blouses, dresses, suit linings, jackets and hats.

SPaG

Grammar: Write in sentences

A sentence is a group of words that make sense. Sentences start with a capital letter and end with a full stop, question mark or exclamation mark. All sentences contain **clauses**. You should try to use a range of sentences when writing. There are three main types of sentences.

Simple sentence: A sentence containing one main clause with a **subject** and a **verb**.
 He **reads**.
 Literacy **is** important.

Compound sentence: Two simple sentences joined with a **conjunction**. Both of these simple sentences would make sense on their own. Varying conjunctions makes your writing more interesting.
 He **read** his book **because** it **was written** by his favourite author.
 Literacy **is** important **so** students **had** an assembly about reading.

Complex sentence: A longer sentence containing a main clause and one or more **subordinate clause (s)** used to add more detail. The main clause makes sense on its own. However, a subordinate clause would not make sense on its own, it needs the main clause to make sense. The subordinate clause is separated by a comma (s) and/or conjunction. The clause can go at the beginning, middle or end of the sentence.
 He **read** his book **even though** it **was late**.
Even though it **was late**, he **read** his book.
 He **read** his book, **even though** it **was late**, **because** it **was written** by his favourite author.

How can you develop your sentences?

- Start sentences in different ways. For example, you can start sentences with adjectives, adverbs or verbs.
Adjective: **Funny** books are my favourite!
Adverb: **Regularly** reading helps me develop a reading habit.
Verb: **Looking** at the front cover is a good way to choose a reading book.
- Use a range of **punctuation**.
- Nominalisation**
 Nominalisation is the noun form of verbs; verbs become concepts rather than actions. Nominalisation is often used in academic writing. For example:
 It is important to **read** because it helps you in lots of ways.
 Becomes: **Reading** is beneficial in many ways.

 Germany **invaded** Poland in 1939. This was the immediate cause of the Second World War breaking out.
 Becomes: Germany's **invasion** of Poland in 1939 was the immediate cause of the outbreak of the Second World War.

Connectives and Conjunctions	
Cause And Effect	Because So Consequently Therefore Thus
Addition	And Also In addition Further (more)
Comparing	Whereas However Similarly Yet As with/ equally/ Likewise
Sequencing	Firstly Initially Then Subsequently Finally After
Emphasis	Importantly Significantly In particular Indeed
Subordinate	Who, despite, until, if, while, as, although, even though, that, which



Year 9 Knowledge Organiser

Haggerston School

Aspiration Creativity Character