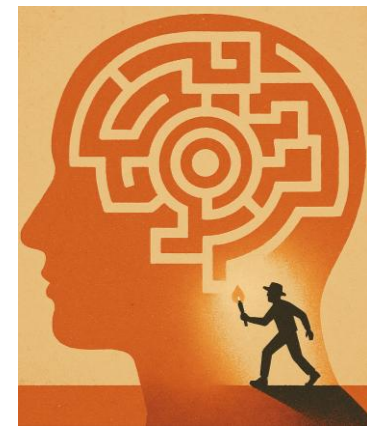


YEAR 9



BHA's Knowledge Quest

**Autumn 1
(Sept - Oct)
2026-2027**



How to use your Knowledge Quest Booklet

To support you in making progress in each of your lessons, your teachers have produced Knowledge Organisers which contain all of the main facts, knowledge and information that you need to know to be successful and make progress this half term. There are lots of ways to use these Knowledge Organisers, but the most important thing is that you are revising the knowledge and you are able to recall it in your lessons. Please see below details of how to use this booklet; what your half termly homework looks like and how to secure lots of positive Class Charts points!

English: 30 minutes of Sparx Reader, every week.

Maths: 30 minutes of Sparx Maths, every week.

Science: 30 minutes of Seneca Science, every week.

MFL: 1 list of vocabulary to learn for a test in lesson AND 1 quiz to complete on Language Nut, MFL platform every fortnight.

History: 30 minutes of Seneca revision, every week. Additional revision provided for assessments.

Geography: 1 hour of Seneca per fortnight.

RE: Holistic quiz using Knowledge Organiser and lesson on teams, every 4 weeks.

PSHE: Independent self quizzing from Knowledge Organiser.

DT: Food Studies- Seneca assignment set as part of each 9-week rotation.

Art: To research/find and create resource images for projects when required.

All other subjects: Revise the information in this booklet using the revision sheets included with each subject.

Timetable

Use this page to copy out your lessons and room numbers

[illegible]

Dates to remember this half term:

September

October

Attendance record



Term	Attendance %
Autumn 1	
Autumn 2	
Spring 1	
Spring 2	
Summer 1	
Summer 2	

Sparx Check!

Remember to click: 'Login with Microsoft' using your academy email address and password!

In the boxes below, write the XRP score that you achieved for each subject. Your form tutor will award you additional CC points for the more XRP points you achieve in addition to the set points for each weekly homework.

	Sparx Reader Points:	Sparx Maths Points:
Week 1		
Week 2		
Week 3		
Week 4		
Week 5		
Week 6		
Week 7		
Week 8		
Total this half term:		

Seneca Check!

Remember to click: 'Login with Microsoft' using your academy email address and password!

In the boxes below, write the titles of the assignments that you complete for each subject and your overall percentage scores. Your form tutor will award you additional CC points for the highest percentages you achieve in addition to the set points for each weekly homework.

	Science Assignments:	History Assignments:	Geography Assignments:
Week 1			
Week 2			
Week 3			
Week 4			
Week 5			
Week 6			
Week 7			
Week 8			
Total assignments completed this half term:			

Language Nut Check!

Remember to click:
'Login with Microsoft'
using your academy
email address and
password!

In the boxes below, write out how many points you have achieved from your weekly homework. Your form tutor will award you additional CC points for the highest scores you achieve in addition to the set points for each weekly homework.

	MFL Homework:
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Total assignments completed this half term:	

Independent Study Check!

Your form tutor and your parent/carer will also check that you are completing your independent study within this booklet. Additional positive CC points will be awarded for beautiful presentation and your ability to demonstrate a strong recall of the knowledge within this booklet.

	End of Half term Form Tutor Check:	Parent/Carer Check:
Independent Study Completed?		
Beautiful Presentation?		
Recall of Knowledge?		

Personal Reflection: What are you most proud of within your Independent Study Booklet?

Homework Log

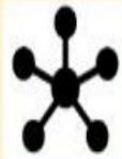
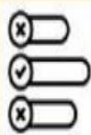
Use this page to record any homework this half term

[illegible]

Homework Log

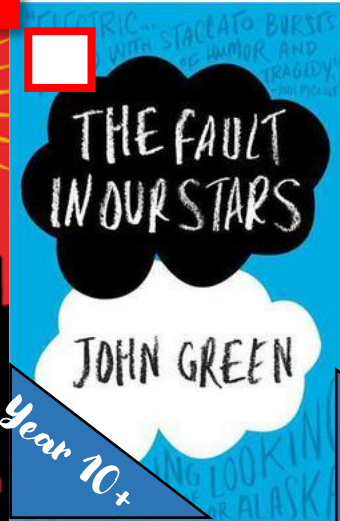
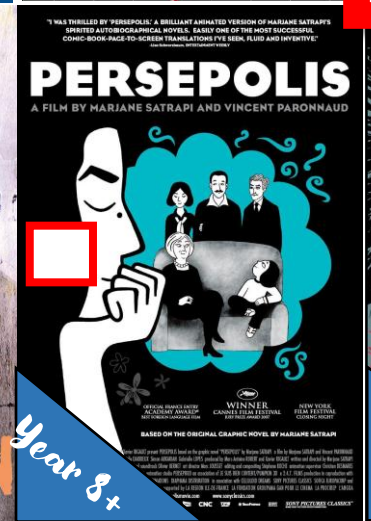
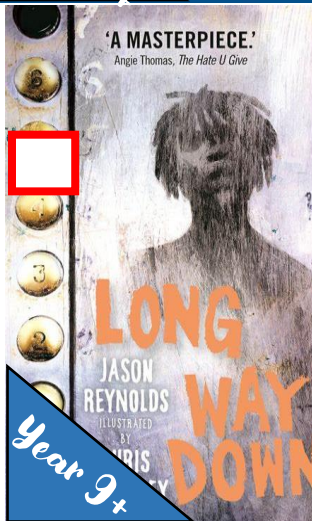
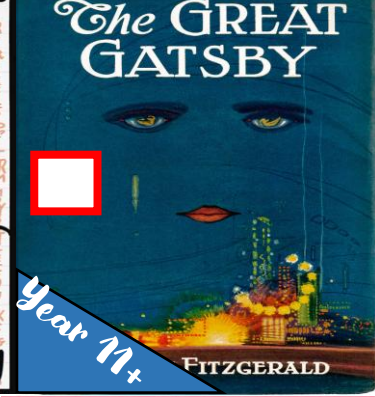
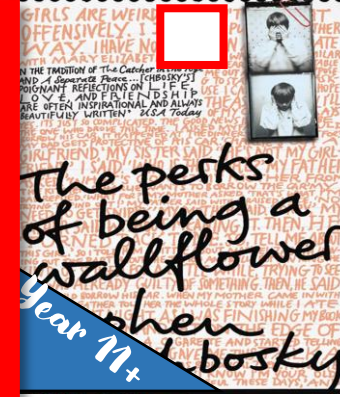
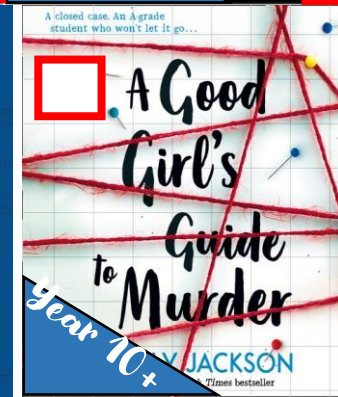
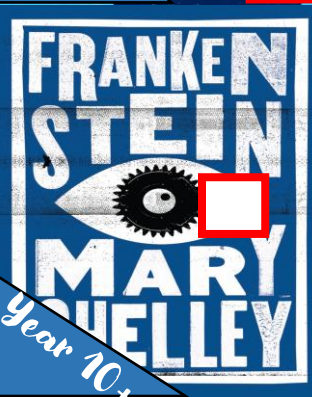
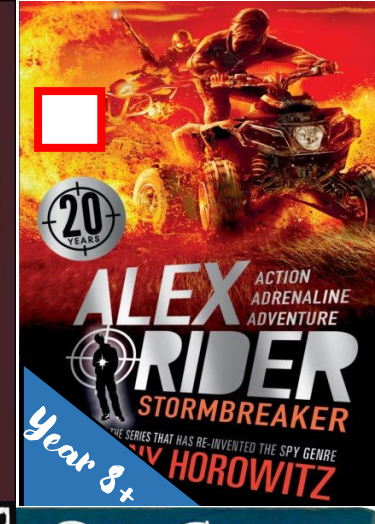
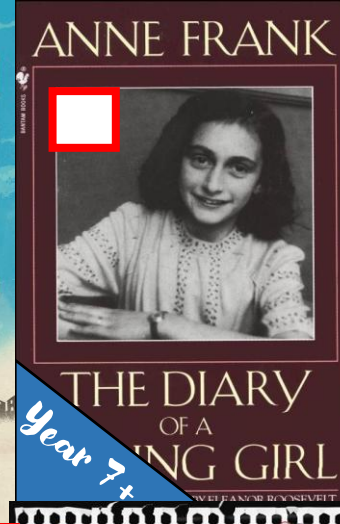
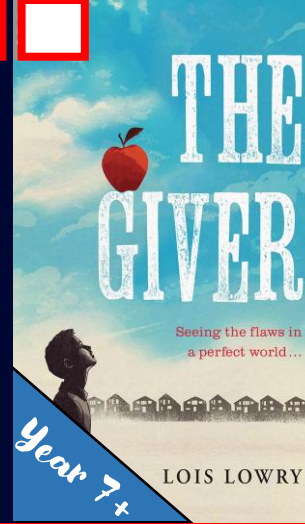
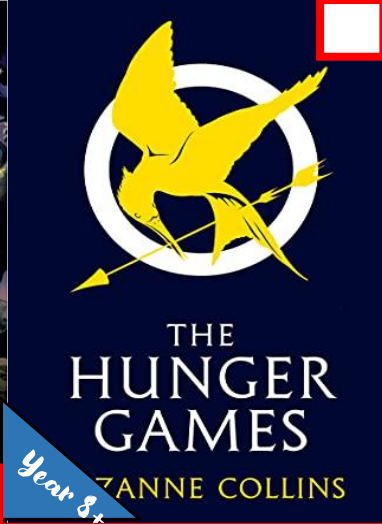
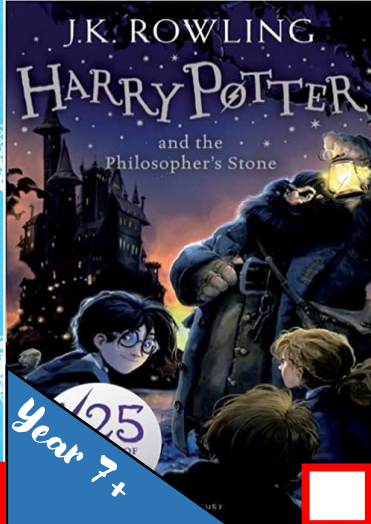
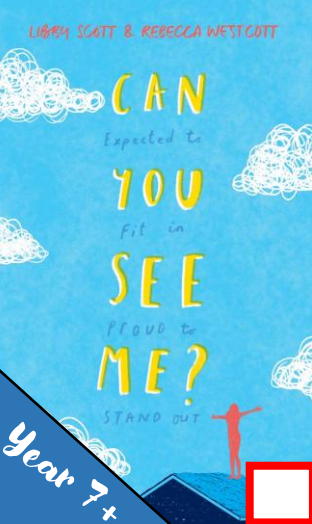
Use this page to record any homework this half term

[illegible]

	Look, Cover, Write, Check	Definitions to Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	Look at and study a specific area of your knowledge organiser. 	Write down the key words and definitions. 	Use your knowledge organiser to condense and write down key facts and or information on your flash cards. 	Use your knowledge organiser to create a mini quiz. Write down questions using your knowledge organiser. 	Create a mind map with all the information you can remember from your knowledge organiser. 	Ask a partner or family member to have the knowledge organiser or flash cards in their hands. 
Step 2	Cover or flip the knowledge organiser over and write down everything you remember. 	Try not to use your knowledge organiser to help you 	Add pictures to help support. Then self quiz yourself using the flash cards.. You can write questions on one side and answers on the other. 	Answer the questions and remember to use full sentences. 	Check your knowledge organiser to see if there were any mistakes with the information you have made. 	They can test you by asking you questions on different sections of your knowledge organiser. 
Step 3	Check what you have written down. Correct any mistakes in green pen and add anything you missed. Repeat. 	Use your green pen to check your work. 	Use a parent/carer or friend to help quiz you on the knowledge. 	You can also use family to help quiz you. Keep self quizzing until you get all questions correct. 	Try to make connections that links information together. 	Write down your answers. 

WORLD MAP

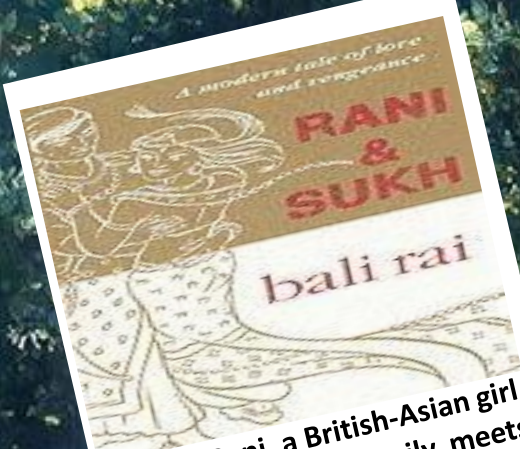




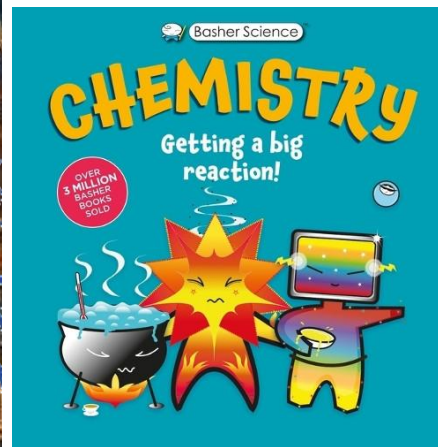
Contents page

Subject	Page
Further Reading List	1
English	2
Maths	3-4
BRAIN DUMP	5
Science	6-8
COP AND ROBBERS	9
MFL	10-13
History	14-15
Geography	16
Geog your memory/ Hi-story Lane	17
Art	18-19
Engineering	20-22
Textile	23
Catering	24-26
DT RETRIEVAL	27
Music	28
Dance	29-30
PE	31-32
Computing	33
THE KNOWLEDGE MAP	34
RE	35
KEY WORDS	36
VOCABULARY	37-38

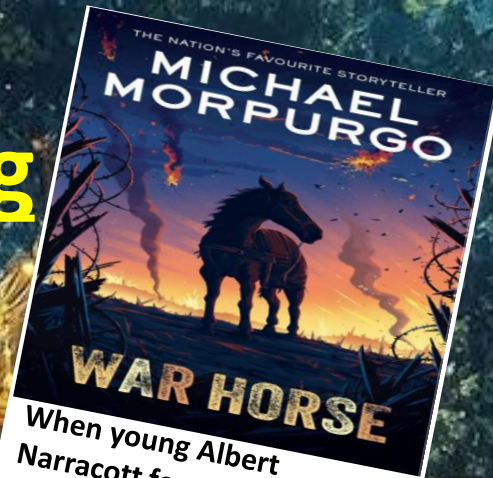
YEAR 9 Recommended Reading



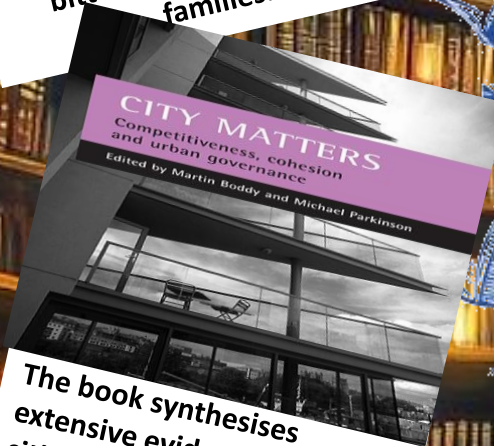
When Rani, a British-Asian girl from a strict Sikh family, meets Sukh, a boy from a rival Punjabi clan, the two are drawn together despite generations of bitterness between their families.



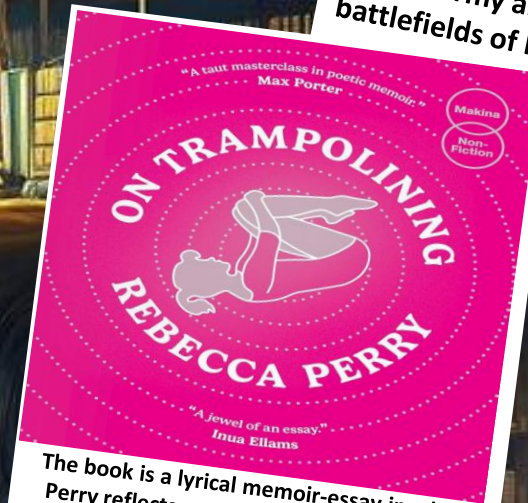
This book is a lively, character-driven introduction to the world of chemistry, turning abstract scientific ideas into memorable, cartoon-style personalities.



When young Albert Narracott forms a deep connection with a spirited horse named Joey, the two become inseparable. But when World War I breaks out, Joey is sold to the British Army and sent to the battlefields of France.



The book synthesises extensive evidence on how cities grow, compete, and maintain social cohesion, examining themes such as economic performance, innovation, housing, migration, social exclusion, and governance structures.



The book is a lyrical memoir-essay in which Perry reflects on her years competing as a national and international trampolinist. She explores what it means to "choose air over earth," weaving together memories of intense training, the physical and emotional demands of elite sport, and the sensations of flight, pain, expectation, and grief.

Challenge yourself by reading these topic-related books for this half term!

Run Rebel by Manjeet Mann

The novel explores the **conflict of cultures** between Amber's challenging, and at times, abusive family life at home. Her school life is filled with friendships, teen crushes and a passion for athletics. Throughout the novel, Amber must learn to navigate these two opposing cultures and develop the strength to grow and build her own identity in the face of these major obstacles.

Themes

Revolution and rebellion

Women and sport

Domestic abuse

Cultural stereotypes

Friendships and relationships

Key wordsDefinition**Culture**

The shared beliefs, values, customs, behaviours and traditions, characterised by a particular group of people or society.

Duality

Refers to the presence of two contrasting or opposing ideas, characters, or themes within a single narrative or character.

Revolution

A forcible overthrow of a government or social order, in favour of a new system.

Liberation

The action of setting someone free from imprisonment, slavery or oppression.

Oppression

Prolonged cruel or unjust treatment or exercise of authority.

This book is written in prose.

Prose: a form of written or spoken language that follows natural speech patterns and grammatical structure, without the rhythmic or metrical patterns found in poetry.



PEZEL

POINT: Make a clear statement that answers the question.

EVIDENCE: Use a quotation from the book that proves the point you have made, imbed them in and include quotation marks.

ZOOM: Zoom in on a key word/ phrase, identify what TYPE of word it is OR identify any language features and analyse the meaning. Provide at least two interpretations.

EXPLORE: Use your quote explosion/rainbow analysis to explain the effects on the reader. What/ how will it make think, feel, understand?

LINK: Explain why the writer has done this and link back to the context of the novella OR link to another part of the text, how is it developed, emphasised or contrasted

*PEZEL is a structure to ensure you cover all aspects of a mark scheme.

Characters

- **Amber Rai** – The protagonist.
- **Amber's Father** – A controlling and abusive man.
- **Amber's Mother** – Submissive and silent for much of the story.
- **Ruby**-Amber's sister who is married to **Jas**.
- **David** – A classmate and love interest.
- **Tara**-a friend.



Run Rebel is written in **eight sections**, following each stage of the Anatomy of a Revolution:

1. Restlessness
2. Dissatisfaction
3. Control
4. Momentum
5. Honeymoon
6. Terror
7. Overthrow
8. Peace



What do I need to be able to do?

- By the end of this unit you should be able to:
- Identify integers, real and rational numbers
 - Work with directed number
 - Solve problems with number
 - Find HCF / LCM
 - Odd/ Subtract fractions
 - Multiply/ Divide fractions
 - Write numbers in standard form

Integers, real and rational numbers

Rational — root word: ratio

Real numbers: $\frac{2}{3}$ stems from $2 \frac{1}{3}$ (of the whole)

Irrational numbers: $\sqrt{2}$ the solution is a decimal that never ends and does not repeat

The square root of a negative is not a real number and cannot be found

HCF/LCM

1 is a common factor of all numbers

Common factors are factors two or more numbers share

HCF — Highest common factor

HCF of 18 and 30

18 1, 2, 3, 6, 9, 18

30 1, 2, 3, 5, 6, 10, 15, 30

LCM — Lowest common multiple

LCM of 9 and 12

9 9, 18, 27, 36, 45, 54

12 12, 24, 36, 48, 60

The first time their multiples match

LCM = 36

Standard form

Any number between 1 and less than 10 $\rightarrow A \times 10^n$ Any integer

$6 \times 10^5 + 8 \times 10^5$

$(1.5 \times 10^3) \div (0.3 \times 10^3)$

$-600000 + 800000$

$15 \div 0.3 \times 10^5 \div 10^3$

-1400000

-5×10^2

Keywords

Integer: a whole number that is positive or negative

Rational: a number that can be made by dividing two integers

Irrational: a number that cannot be made by dividing two integers

Inverse operation: the operation that reverses the action

Quotient: the result of a division

Product: the result of a multiplication

Multiples: found by multiplying any number by positive integers

Factor: integers that multiply together to get another number

Directed number

Addition

Consolidation

$+$ $-$ $=$ $-$

Two $\times$ 1 left $- -2$

Zero pair $(-1 + 1 = 0)$

Subtraction

$2 - -1 = 3$

Take away one

Representation for calculation

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

$2 - -1 = 3$

Multiplication

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

$-2 \times -3 = 6$

Brackets around negative substitutions helps remove calculation errors

$2a - b = 2 \times 5 - (-4) = 10 + 4 = 14$

Addition/ Subtraction of fractions

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

$\frac{4}{5} - \frac{2}{3}$

Multiplication/ Division of fractions

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

$\frac{3}{4} \times \frac{2}{3}$

Remember to use reciprocals

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

Represented

$\frac{8}{15}$

$\frac{8}{15}$

$\frac{8}{15}$

$\frac{8}{15}$

$\frac{8}{15}$

$\frac{8}{15}$

Multiplying by a reciprocal gives the same outcome

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

$2 \div \frac{3}{4}$

What do I need to be able to do?

By the end of this unit you should be able to:

- Solve speed, distance, time questions
- Use distance time graphs
- Solve density, mass, volume problems
- Solve flow problems
- Use flow graphs
- Interpret rates of change and their units

Convert: change

Mass: a measure of how much matter is in an object. Commonly measured by weight

Origin: the coordinate (0, 0)

Volume: the amount of 3D space a shape takes up

Substitute: putting numbers where letters are — replacing numbers into a formula

Speed, Distance, Time

“per” for every

e.g. 80 miles per hour (mph)

Travel 80 miles every hour



You can use a double number line to help you calculate distance

e.g. A boat travels at a constant speed for 2.5 hours. It travels 300 miles.



Bar models can help to calculate mph

Each part is half an hour
Each part is 60 miles

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Speed, Distance, Time



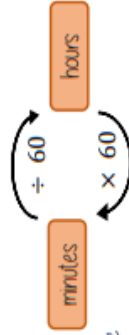
Before calculations — make sure you are working in the same units as the speed

Learn or learn how to rearrange the formula for speed, distance and time

Substitute in the variables given

$$\text{time} = \frac{\text{distance}}{\text{speed}}$$

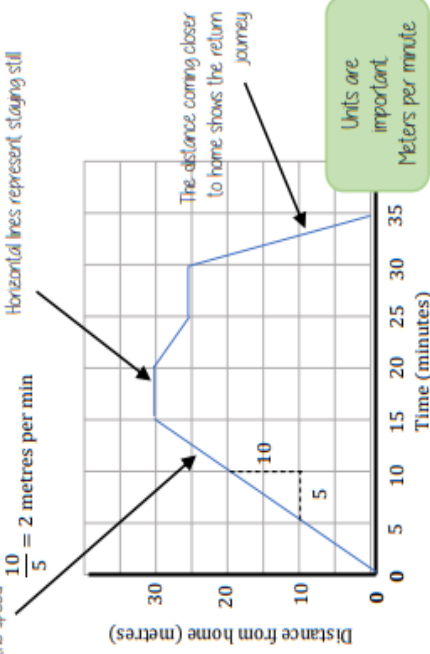
$$\text{distance} = \text{speed} \times \text{time}$$



Distance — Time graphs

The steeper a gradient, the faster the speed

Horizontal lines represent staying still

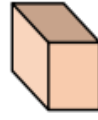


Density, Mass, Volume

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{volume} = \frac{\text{mass}}{\text{density}}$$

$$\text{mass} = \text{volume} \times \text{density}$$

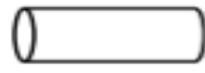


$$\text{volume of prism} = \text{Area of cross section} \times \text{Depth}$$

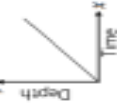
Flow problems & graphs



This will fill at a constant rate, then as the space decreases it will speed up and the neck of the bottle fill at a faster constant speed



The cylinder will fill at a constant speed

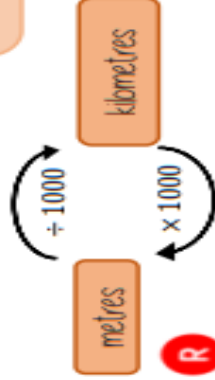


Units are important
Ensure any volume calculations are the same unit as the rate of flow

Rates of change & units

Common rates of change relationships

Revisit your conversions between units of length and capacity

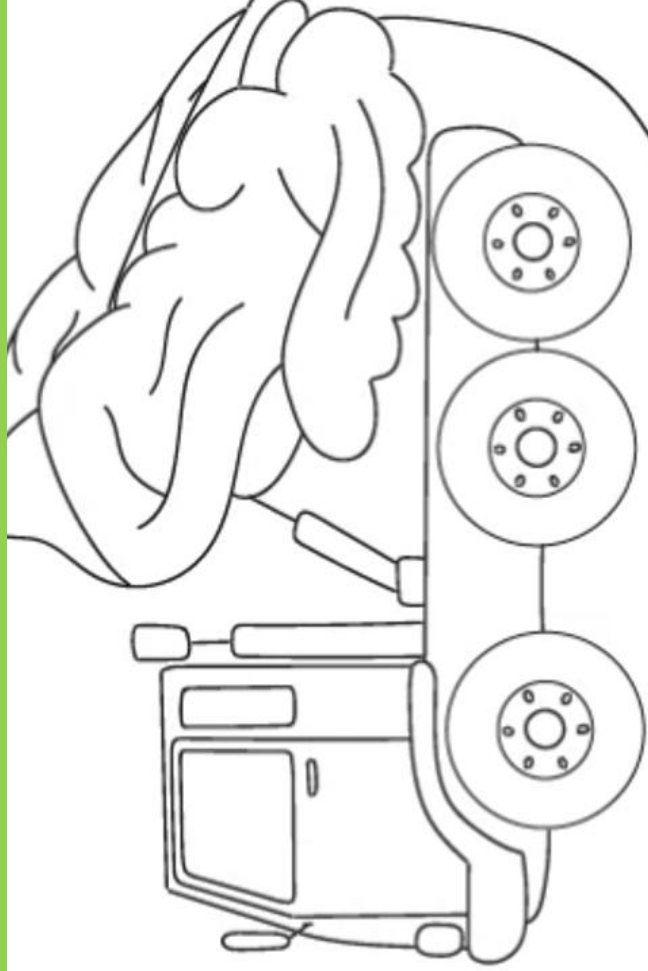


Speed: miles per hour

Exchange rates: euros per pounds

Density: mass per volume

Within the 'brain dump', add all the knowledge you can remember from *English* and *Maths* without looking back at the sheets. Once you have added everything you can remember, look at these pages again and using a different colour pen, add in the knowledge that you missed out. This is the knowledge you should now continue to revise. Continue this process until you can remember everything on the page.



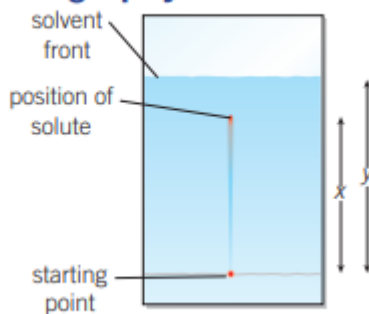
BRAIN DUMP

Mixtures

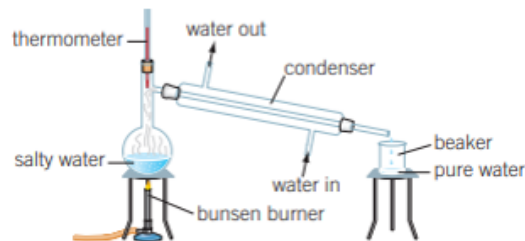
- **Mixtures** are different **substances** which are together, they are not chemically bonded and so are easy to separate.
 - The substances which make up a mixture keep their own **properties** unlike those in a compound.
 - A mixture is an **impure** substance as it does not have a fixed melting point, instead it has a range.
-
- A **solution** is a type of mixture which is made up of two parts.
 - A **solute** is the part which has dissolved in the solution.
 - A **solvent** is the liquid part which the solute has dissolved into.
-
- The **solubility** of a substance is a measure of how much of it will **dissolve**.
 - Not all solutes will dissolve in all solvents.
 - Solutes which do not dissolve are known as **insoluble**.
 - Substances which do dissolve are known as **soluble**.
 - The **solubility** of a substance can be increased by increasing the temperature of the solution or by stirring the solution.
 - A **saturated solution** is one where the maximum amount of solute has dissolved in it, no more solute will be able to dissolve.

Knowledge organiser: Separating techniques

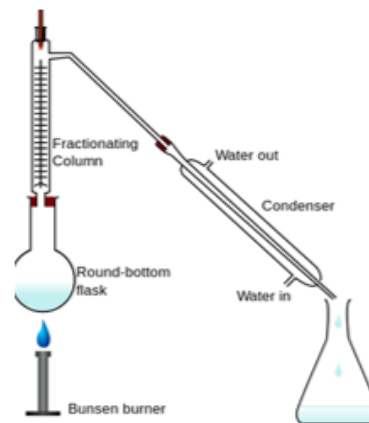
Chromatography



Simple distillation

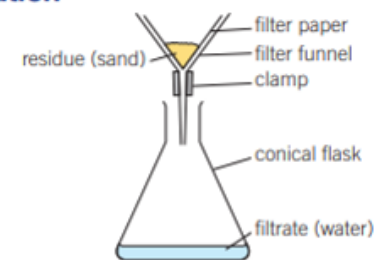


Fractional distillation



Separating Mixtures

Filtration



Crystallisation or Evaporation



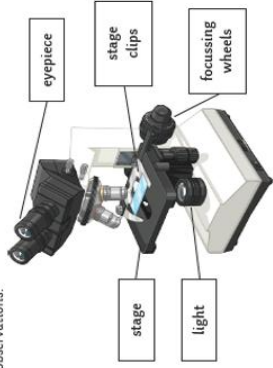
Notes

Cell Biology Knowledge Organiser – Foundation and Higher

Required Practical

Microscopy Required Practical

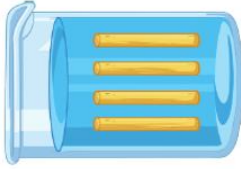
- Includes preparing a slide, using a light microscope, drawing any observations – use a pencil and label important observations.



Osmosis and Potato Practical

- Independent variable – concentration.
- Dependent variable – change in mass.
- Control variable – volume of solution, temperature, time, surface area of the potato.

The potato in the sugar solution will lose water and so will have less mass at the end; the potato in the pure water solution will gain water.



Specialised Cells

When a cell changes to become a specialised cell, it is called

Saved to \\lbhas-smr45-01\Staff Data\5

Specialised Cell	Function	Adaptation
sperm	To get the male DNA to the female DNA.	Streamlined head, long tail, lots of mitochondria to provide energy.
nerve	To send electrical impulses around the body.	Long to cover more distance. Has branched connections to connect in a network.
muscle	To contract quickly.	Long and contain lots of mitochondria for energy.
root hair	To absorb water from the soil.	A large surface area to absorb more water.
phloem	Transports substances around the plant.	Pores to allow cell sap to flow. Cells are long and joined end-to-end.
xylem	Transports water through the plant.	Hollow in the centre. Tubes are joined end-to-end.

Equations and Maths

Equation



Maths Skills

Conversions:
Micrometres to millimetres: divide by 1000.

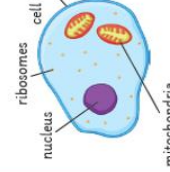
Standard Form:

$$0.003 = 3 \times 10^{-3}$$

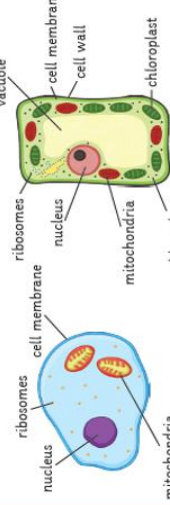
$$5.6 \times 10^{-5} = 0.00056$$

Prokaryotic and Eukaryotic Cells

Animal Cells



Plant Cells

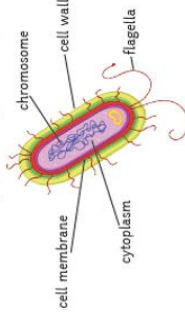


Plant and animal cells have similarities and differences:

	Animal	Plant
nucleus	✓	✓
cytoplasm	✓	✓
chloroplast	✗	✓
cell membrane	✓	✓
permanent vacuole	✗	✓
mitochondria	✓	✓
ribosomes	✓	✓
cell wall	✗	✓

Bacterial Cells

Bacterial cells do not have a true nucleus, they just have a single strand of DNA that floats in the cytoplasm. They contain a plasmid.



Stem Cells

Embryonic stem cells are undifferentiated cells, they have the potential to turn into any kind of cell.



Adult stem cells are found in the bone marrow, they can only turn into some types of cells e.g. blood cells.

Uses of stem cells:

- Replacing faulty blood cells;
- making insulin producing cells,
- making nerve cells.

Some people are against stem cell research.

For Stem Cell Research	Against Stem Cell Research
Curing patients with stem cells - more important than the rights of embryos.	Embryos are human life.
They are just using unwanted embryos from fertility clinics, which would normally be destroyed.	Scientists should find other sources of stem cells.

Stem Cells in Plants

In plants, stem cells are found in the meristem. These stem cells are able to produce clones of the plant. They can be used to grow crops with specific features for a farmer, e.g. disease resistant.

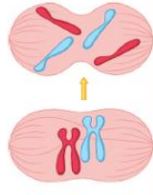
Chromosomes and Mitosis

In the nucleus of a human cell there are 23 pairs of chromosomes. Chromosomes contain a double helix of DNA. Chromosomes have a large number of genes.



The cell cycle makes new cells.

Mitosis: DNA has to be copied/replicated before the cell carries out mitosis.



Key Vocabulary

active transport

alveoli

chromosome

diffusion

eukaryotic

gas exchange

mitosis

multicellular

osmosis

prokaryotic

undifferentiated

replicated

specialised

villi

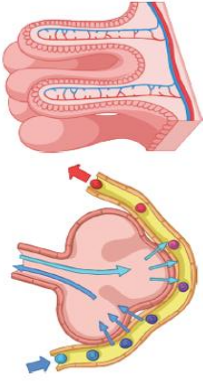
Exchange – Humans

Multicellular organisms have a large surface area to volume ratio so that all the substances can be exchanged.

Gas exchange: Lungs

The alveoli are where gas exchange takes place.

They have a large surface area, moist lining, thin walls and a good blood supply.

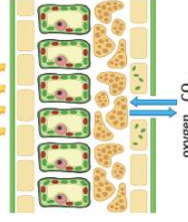


Villi: Small Intestine

Millions of villi line the small intestine increasing the surface area to absorb more digested food.

They are a single layer of cells with a good blood supply.

Exchange in Plants



The surface of the leaf is flattened to increase the surface area for more gas exchange by diffusion.

Oxygen and water vapour diffuse out of the stomata. Guard cells open and close the stomata, controlling water loss.

Key Processes

Diffusion is the spreading out of particles from an area of higher concentration to an area of lower concentration.

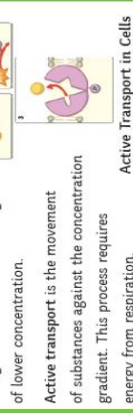
Cell membranes are semi-permeable, only small molecules can get through.

Osmosis is the movement of water molecules across a partially permeable membrane from a region of higher concentration to a region of lower concentration.

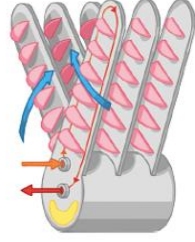
Active transport is the movement of substances against the concentration gradient. This process requires energy from respiration.

Active Transport in Cells

Exchange in Fish



Fish have a large surface area for gas exchange. These are called gills. Water enters the fish through the mouth and goes out through the gills. The oxygen is transported from the water to the blood by diffusion. Carbon dioxide diffuses from the blood to the water. Each gill has gill filaments which give the gills a large surface area. Lamellae cover each gill filament to further increase the surface area for more gas exchange. They have a thin surface layer and capillaries for good blood supply which helps with diffusion.



AQA Combined Science: Physics Topic 3 Particle Model of Matter

Particles

Solids have strong forces of attraction. They are held together very closely in a fixed, regular arrangement. The particles do not have much energy and can only vibrate.



Liquids have weaker forces of attraction. They are close together, but can move past each other. They form irregular arrangements. They have more energy than particles in a solid.

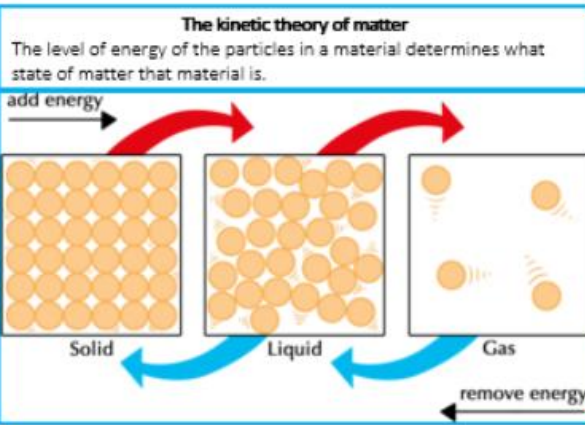


Gases have almost no forces of attraction between the particles. They have the most energy and are free to move in random directions.

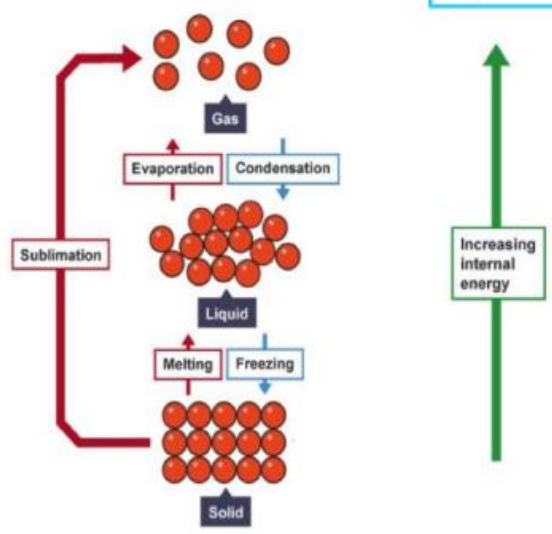


Density
Density is a measure of how much mass there is in a given space.
 $\text{Density (kg/m}^3\text{)} = \frac{\text{mass (kg)}}{\text{volume (m}^3\text{)}}$
A more dense material will have more particles in the same volume when compared to a less dense material.

notes



Changing State
If a system gains more energy, it can lead to a change in temperature or change in state. If the system is heated enough, then there will be enough energy to break bonds.
When something changes state, there is no chemical change, only physical. No new substance is formed. The substance will change back to its original form. The number of particles does not change and mass is conserved.



Measuring the density of a liquid:

- Measure mass of the empty beaker with a balance.
- Add the liquid and measure the mass of the liquid and beaker.
- Calculate the mass of the liquid (mass of the liquid and beaker - mass of the empty beaker).
- Measure volume of the liquid with the measuring cylinder.

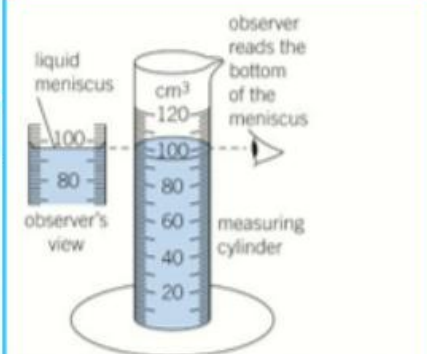


Figure 3 Using a measuring cylinder

Required Practical
Measuring the density of a regularly shaped object:

- Measure the mass using a balance.
- Measure the length, width and height using a ruler.
- Calculate the volume.
- Use the density ($\rho = m/V$) equation to calculate density.

Measuring the density of an irregularly-shaped object:

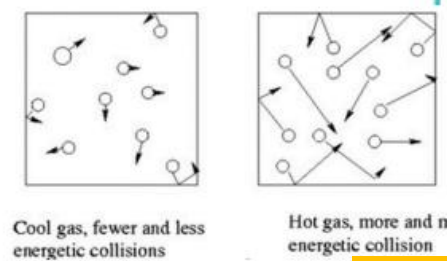
- Measure the mass using a balance.
- Fill a eureka can with water.
- Place the object in the water - the water displaced by the object will transfer into a measuring cylinder.
- Measure the volume of the water. This equals the volume of the object.
- Use the density ($\rho = m/V$) equation to calculate density.



Particles
Gas particles can move around freely and will collide with other particles and the walls of the container. This is the pressure of the gas.
If the temperature of the gas increases, then the pressure will also increase. The hotter the temperature, the more kinetic energy the gas particles have. They move faster, colliding with the sides of the container more often.

$$\rho = \frac{m}{V}$$

density mass
 volume



COPS AND ROBBERS

This **retrieval practice tool** will help you test and build your memory of a specific topic in **Science**.



Cops: Write down everything you can remember about the topic from your long-term memory, without looking at notes.

Robbers: Now *“Steal”* missing facts or ideas from the KO you have been studying. This will give you information about the points you need to develop.

Opinions

j'adore – *I love*



j'aime bien – *I really like*



j'aime – *I like*



je n'aime pas – *I don't like*



je déteste – *I hate*



Justifications

car c'est – *because it's*
 parce que c'est – *because it's*
 car ce n'est pas – *because it's not*
 *ce sera – *it will be*
 *c'était – *it was*

Intensifiers

très – *very*
 assez – *quite*
 trop – *too*
 vraiment – *very*

Connectives

et – *and*
 aussi – *also*
 mais – *but*
 cependant – *however*

Reasons



amusant – *fun*
 intéressant – *interesting*
 fantastique – *fantastic*
 excellent – *excellent*
 chouette – *great*



nul – *rubbish*
 horrible – *horrible*
 ennuyeux – *boring*
 affreux – *awful*
 terrible – *terrible*

Instructions Ecrivez – *Write!* Ecoutez – *Listen!* Regardez – *Look!* Lisez – *Read!*

Faites correspondre – *Match up!* Traduisez – *Translate!* Répétez – *Repeat!* Copiez – *Copy!*

Questions

Qu'est-ce que c'est...? *What is it...?*

Comment dit-on.. En anglais/français? *How do we say... in English/French?*

Classroom language

Bonjour monsieur / madame – *Hello Sir / Miss*

Oui / non – *Yes / No*

S'il vous plaît – *Please*

Merci – *Thank you*

J'ai besoin de... – *I need a/some...*

stylo (vert) – *(green) pen*

papier – *paper*

dictionnaire – *dictionary*

règle – *ruler*

cahier – *exercise book*

Est-ce que vous pouvez répéter?

– *Can you repeat?*

Je ne comprends pas – *I don't understand*

Est-ce que vous pouvez m'aider?

– *Can you help me?*

Puis-je aller aux toilettes?

– *Can I go to the toilets?*

J'ai fini – *I have finished*

Puis-je enlever ma veste?

– *Can I take off my blazer?*

Qu'est-ce que c'est en français / anglais?

– *What is ... in French / English?*

Les numéros

0	Zero	11	Onze	30	Trente
1	Un	12	Douze	40	Quarante
2	Deux	13	Treize	50	Cinquante
3	Trois	14	Quatorze	60	Soixante
4	Quatre	15	Quinze	70	Soixante-dix
5	Cinq	16	Seize	80	Quatre-vingts
6	Six	17	Dix-sept	90	Quatre-vingt-dix
7	Sept	18	Dix-huit	100	Cent
8	Huit	19	Dix-neuf		
9	Neuf	20	Vingt		
10	Dix				

Year 9 French: School Knowledge Organiser

Ways to practise vocabulary: 1. Look cover, write check 2. Log onto Memrise 3. Getting people at home to test you 4. Log onto language nut

Big Questions:

- How do I talk about my studies?
- How do I describe life at school?
- How do I describe my school/teachers?
- How do I talk about my options when I leave school?
- How do I talk about my successes?



Key vocabulary

Les matières—subjects	
j'étudie	I study
le théâtre	drama
les sciences physiques	physical sciences
la chimie	chemistry
les sciences et vie de la terre	natural sciences
l'allemand	German
l'EPS	PE
les langues	languages
l'histoire-géo	history-geography



adjectifs—adjectives	
c'est/ce n'est pas	It is/it is not
facile	easy
difficile	difficult
fatigant	tiring
utile	useful
sage	wise
méchant	unkind

l'emploi tu temps—timetable	
ma matière préférée c'est...	my favourite subject is...
le prof	the teacher
le récré	break
le déjeuner	lunchtime
un cours	a lesson
commencer	to start
finir	to finish
après	after
avant	before
puis/ensuite	then
suivi(e)s de	followed by

une visite—a visit	
visiter	to visit
voir	to see
acheter	to buy
essayer	to try
louer	to rent/hire

l'uniforme—uniform	
je porte	I wear
un chandail	a cardigan
un collant	tights
un polo	a polo shirt
en tissu facile à laver	in easy to wash material
en tissu facile à repasser	easy-iron material



les clubs—clubs	
j'assiste	I attend
au club d'échecs	chess club
au club de l'escrime	fencing club
la chorale	the choir
l'orchestre	the orchestra
aller (je vais)	to go (I go)
chanter	to sing
je joue dans l'équipe de foot	I play in the football team



les installations—facilities	
mon collège a	my school has
un gymnase	a gym
un hall	a hall
un terrain de sport	sports pitches
une cantine	a canteen
un cours	a playground
une bibliothèque	a library
une salle de sport	a sports hall
une piscine	a swimming pool
les salles	classroom
les labos	laboratories
les vestiaires	changing rooms

RULES

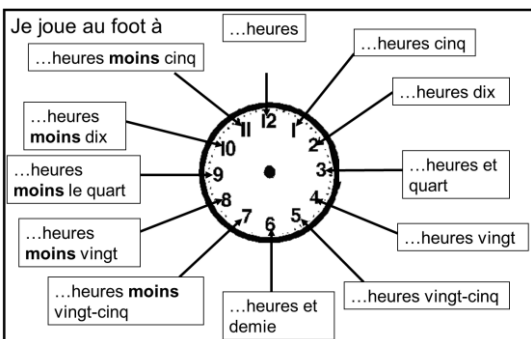
le reglement—rules	
il faut	you must
c'est interdit de	it's forbidden to
être à l'heure	to be on time
faire les devoirs	to do homework
écouter en classe	to listen in class
porter l'uniforme	to wear uniform
macher le chewing gum	to chew gum
porter des bijoux	to wear jewellery
manquer les cours	to skip classes
sortir pendant la journée scolaire	to go out during the school day
courir dans le couloir	to run in the corridors

Intensifiers

très—very	assez—quite
un peu—a little	beaucoup—a lot

False Friends

une licence	a degree
un stage	a course
une note	a mark/grade





Problèmes—Problems	
je pense que	I think that
le problème le plus grave est...	the most serious problem is...
les examens sont difficiles	the exams are difficult
les bâtiments sont vieux	the buildings are old
l'harcèlement	harassment
pression de groupe	peer pressure
les bagarres	fight

Tricky pronunciation:

science	see-ohn-suh (anglicism)
chewing-gum	shoe-in-gum (anglicism)

Key Questions	
qu'est-ce que tu étudies?	What do you study?
que feras-tu quand tu quittes le collège?	What will you do when you leave school?
qu'est-ce que tu portes comme uniforme?	What do you wear as a uniform?
parle moi de règlement au collège	Talk to me about the rules
comment sont tes profs?	What are your teachers like?

Tricky spelling

apprentissage	double p/s
---------------	------------

après le collège	
je vais/je voudrais	I'm going /want to...
aller au lycée	to go to college
faire une licence	to do a degree
faire un apprentissage	to do an apprenticeship
faire du bénévolat	to do voluntary work
avoir ma propre entreprise	to have my own business
voyager autour du monde	to travel the world

Étudier—to study			Étudier—to study			Key verbs	
Past (perfect tense)	Present	Future	Past (perfect tense)	Present	Future		
J'ai étudié (I studied)	J'étudie (I study)	Je vais étudier (I am going to study)	Nous avons étudié (we studied)	Nous étudions (we study)	Nous allons étudier (we are going to study)	porter	to wear
Tu as étudié (you studied)	Tu étudies (you study)	Tu vas étudier (you are going to study)	Vous avez étudié (you (plural) studied)	Vous étudiez (you (plural) studies)	Vous allez étudier (you (plural) are going to study)	jouer	to play
Il/elle a étudié (s/he studied)	Il/elle étudie (s/he studies)	Il/elle va étudier (s/he is going to study)	Ils ont étudié (they had studied)	Ils/elles étudient (they study)	Ils/elles vont étudier (they are going to study)	penser	to think
						aller	to go

Useful Grammar

Negatives
When you use a negative structure in French (ne...pas, ne...jamais) you need to make sure the **ne...pas** sandwich the **main verb**.
Je **ne** fais **pas** Je **n'**étudie **jamais**

Modal verbs
Falloir is a **modal verb**. It is used to say what we have to do. A verb of obligation. It is always followed by an **infinitive**
Il faut **porter** l'uniforme Il faut **écouter** au professeur

The perfect tense (passé composé)
The perfect tense is used to talk about a completed action in the past. These verbs use **avoir** in the perfect tense.
J'**ai** étudié il **a** fait nous **avons** regardé

The Future Tense
To form the future tense we use the present tense of **aller** with **the infinitive**.
Je **vais** étudier—I am going to study
il **va** étudier—he is going to study

Adjectives
Adjectives agree with the **gender** and **number** of the noun in describes. They usually come **after** the noun

un pantalon vert
une jupe **verte**
des collants **verts**
des baskets **vertes**

Year 9 French: School – Test yourself – Fill in the English

l'emploi du temps—timetable	
ma matière préférée	
c'est...	
le prof	
le récré	
le déjeuner	
un cours	
commencer	
finir	
après	
avant	
puis/ensuite	
suivi(e)(s) de	

adjectifs—adjectives	
c'est/ce n'est pas	
facile	
difficile	
fatigant	
utile	
sage	
méchant	

les clubs—clubs	
j'assiste	
au club d'échecs	
au club de l'escrime	
la chorale	
l'orchestre	
aller (je vais)	
chanter	
je joue dans l'équipe de foot	

les installations—facilities	
mon collège a	
un gymnase	
un hall	
un terrain de sport	
une cantine	
un cours	
une bibliothèque	
une salle de sport	
une piscine	
les salles	
les labos	
les vestiaires	

le reglement—rules	
il faut	
c'est interdit de	
être à l'heure	
faire les devoirs	
écouter en classe	
porter l'uniforme	
macher le chewing gum	
porter des bijoux	
manquer les cours	
sortir pendant la journée scolaire	
courir dans le couloir	

une visite—a visit	
visiter	
voir	
acheter	
essayer	
louer	

l'uniforme—uniform	
je porte	
un chandail	
un collant	
un polo	
en tissu facile à laver	
en tissu facile à repasser	

Knowledge Organiser: WW1 (1914-1918)

M	Militarism
A	Alliances
I	Imperialism
N	Nationalism



Schlieffen Plan - Schlieffen's plan involved using 90% of Germany's armed forces to attack France. Fearing the French forts on the border with Germany, Schlieffen suggested an attack through Holland, [Belgium](#) and Luxembourg. The rest of the German Army would be sent to defend against the Russians. Once France had been overrun, the German Army could focus on Russia. Failed because the British and Belgians were stronger than they thought, and the Russians mobilised quicker.



Long-term	A cause that happened a long time before an event.
Short-term	A cause that happened a short time before an event.



28th June 1914 – Archduke Franz Ferdinand assassinated.

28th July 1914 – Serbia declares war.

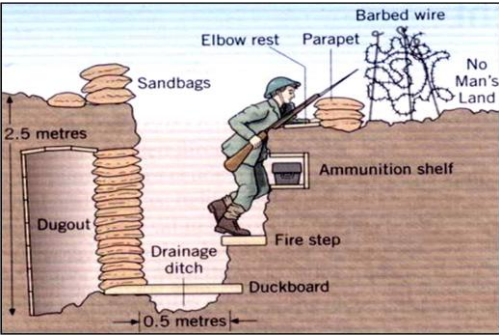
1st August 1914 – Germany declares war on France.

4th August 1914 – Germany invade Belgium.

12th August 1914 – France and Britain declares war on Austria-Hungary.



Trenches



Living in the Trenches



"Cold nights, the discomfort of wet clothes, dragging minutes of fear on patrol, the sufferings of men ... but most of all the memory of tiredness. The chances of becoming ill were made greater because of the lack of clean water and proper washing and cleaning"

Why did men join the war?

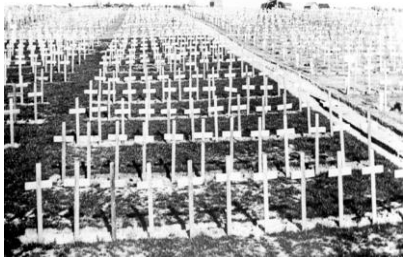
Patriotism- fight for country

The war would be over by Christmas- a quick victory

Propaganda- posters, leaflets



N	Nature
O	Origin
P	Purpose



Battle of the Somme (1916)

1,738,000 shells were fired at the Germans. It was hoped that the artillery guns would destroy the German trenches and barbed wire placed in front of the trenches. When the bombardment stopped, the Germans would have known that this would have been the signal for soldiers to advance. They moved from the safety of their dugouts and manned their machine guns to face the British and French. By the end of the battle, the British had lost 420,000 soldiers. The French lost nearly 200,000 men and the Germans 500,000. They had gained less than 8 miles of land.



The Christmas truce was a name given to a series of unofficial ceasefires upheld by both sides in the week running up to Christmas 1914.

It was initiated by the Germans, and saw both sides exchanging gifts of brandy and cigarettes, swapping addresses and photos, singing carols and playing games

How did WW1 end?

German Ports were blockaded by the British Royal Navy causing severe food shortages. An estimated quarter of a million people died of hunger.



In April 1917, the USA came into the war against Germany

The German population demanded peace and the Kaiser fled the country – German leaders had no choice but to ask for an Armistice.

Homefront

During WWI, the **Home Front** was very important to help Britain win the war in Europe. It wasn't just the soldiers affected by war- everyone in Britain had to help if they wanted to survive. The **Home Front** during **World War One** refers to life in **Britain** during the war itself.



Terms of the Treaty of Versailles (1919)



Russian Revolution

February 1913	Tsar Nicholas II celebrates 300 years of Romanov rule of Russia.
August 1914	Start of World War One . Russia does badly against Germany. Millions of Russians are killed and there are severe shortages on the home front.
March 1917	In St. Petersburg there are mass protests against the food shortages and the war. When the Tsar's troops refuse to fire on the crowds and join in the demonstration it becomes a revolution . The Tsar abdicates and a new Provisional Government takes over. However the new government decides to carry on the war.
April 1917	Lenin , the leader of the Bolshevik Party , returns to Russia. He declares everyone should have an equal share of Russia's wealth, peasants should have a share of the land, workers should have a share of the factory where they <u>worked</u> and the war should end immediately.
October 1917	Lenin and the Bolsheviks seize power using force from the Provisional Government. They set about transforming Russia into the world's first communist state.
March 1918	The Bolsheviks sign the Treaty of Brest Litovsk ending the war with Germany. Many felt it was a shameful peace with Russia forced to give up a huge amount of territory.
July 1918	The Tsar and his family are murdered in Ekaterinberg by the Bolsheviks.
1921	The Bolsheviks rename Russia the ' Union of Soviet Socialist Republics ' (U.S.S.R.) and rename themselves the Communists .

What were the aims of the Big 3 at Versailles?

Country	Aims at the Paris Peace Conference
Britain 	The Prime Minister, David Lloyd George thought it was unwise to be too harsh on Germany but some of the British people wanted to get revenge. They were angry about the war. 
France 	France was keen on getting revenge on Germany because much of North East France was ruined. They wanted money to pay for the damage. 
USA 	The President Woodrow Wilson thought that everyone should discuss their problems rather than fight. He wanted a League of Nations. This would let everyone meet to discuss issues. 

1	G UILT
2	A RMY
3	R EPARATIONS
4	G ERMANY LOST LAND
5	L EAGUE OF NATIONS
6	E XTRAS

Urban Trends Year 9

Urban: In a town or city.

Rural: In the countryside.

Migration: Moving to live somewhere else, either temporarily or permanently.

SOL: Standard of Living is used to measure wealth.

QOL: Quality of life is used to measure happiness.

Urbanisation: When an increasing percentage of a country's population comes to live in towns and cities.

Urban Greening: Process of increasing and preserving open space in urban areas.

ITS: Integrated Transport Systems- Different forms of transport are linked together to make it easy to transfer from one to another.

Greenfield site: A plot of land, often in a rural or on the edge of an urban area that has not been built on before.

Brownfield site: Land that has been used before and now awaits reuse; often found in urban areas.

Urban sprawl: Unplanned growth of urban areas into the surrounding rural areas.

Regeneration: The act of improving a place or system, especially by making it more active or successful.

Investment: Investing money for profit.

Sustainable: Actions that meet the needs of the present without reducing the ability of future generations to meet their needs.



4 R schemes to reduce the amount of waste in the Birmingham

Reduce	Reuse	Recycle	Recover
- Ensuring info is available in Brum to prevent waste. - By 2020, Brum aims to reduce the amount of waste generate PP by 10%	Using material repeatedly by sharing information on how items can be repaired or donated to organisations sometimes with cash incentives.	- By 2030, Brum aims to recycle 70% of all household and municipal waste - Providing a high quality and reliable service that makes it easier for residents to recycle a wide range of materials, green and food waste.	- Recovering energy from waste. - Managing waste in a more sustainable way can reduce climate change, aim to eliminate waste sent to landfill by 2035



Integrated Transport	Advantages	Disadvantages	Geography
HS2 	- The north and south will be connected- It will be easier for people to travel between northern cities and London. - Businesses & services will be spread more evenly around the country. - Provide 50,000 additional jobs (26k in Brum). £4 billion increase in the economy. - Reduced travel time.	- It is estimated to the cost the Government £56 billion, this figure keeps increasing. - Fares are expected to be expensive. - Some people have had to move as they lived along the route. - Some businesses will have to move as their factories are along the route. - Wildlife will be affected as the tracks will run through rural areas.	
Midland Metro 	- Metro operation on battery power removes the need to fix electric wires to the listed buildings along the route. - Supports economic growth by improving accessibility in the west of Brum. - Improved air quality & reduction in noise.	- Limited destinations unlike other ITS schemes. - Building work will be noisy on the extension. - Certain roads will be closed to allow to construction, this may increase traffic.	

Developing Brownfield Sites

Advantages:

- Existing buildings can be put to a range of uses.
- The land is often disused or in a state of dereliction, so any changes are usually an improvement.
- Sites are usually in urban areas, so urban sprawl and also car use for commuting is reduced.

Disadvantages:

- Expensive to build on and building may need demolishing.
- You may need to encourage people back into the area.
- Sites may be contaminated from previous use.



Ladywood: an area containing urban deprivation

Housing:

- Homes are owner-occupied or rented from the council.
- Many homes are poorly insulated.
- 42.5% of children live in poverty 20.1% higher than national average.

Health

- Loses more years of life than Birmingham for infant mortality, lung cancer; and pneumonia.
- During 2013/15 under 75 death rate was 59.4% higher than the rate for England.

Education

- The school census 2016 showed that 65% of pupils of school age had a first language other than English.

Employment & economic

- 6,590 people claim unemployment benefit.

Sutton Coldfield: a very affluent suburb

Housing:

- Homes are owner-occupied or rented from the council.
- Many homes are poorly insulated.
- 12.4% of children are defined as being in poverty.
- None of the population live in deprived neighbourhoods, compared to 40% for the city as a whole.

Health

- Life expectancy is 83.8 years.

Education

81% over pupils gained Grades A*-C in 5 GCSEs, including Maths and English.

Employment & economic

- Unemployment 1.1% and falling.
- English is the main language of 97% of the working age population, and almost 100% can speak it well.

Geog your memory/ Hi-story Lane

Use the LANES to recall key information about a particular topic, in **History** and **Geography** without looking at the sheets. Once you have added everything you can remember, look at these pages again and using a different colour pen, add in the knowledge that you missed out. This is the knowledge you should now continue to revise. Continue this process until you can remember everything on the page.

The page contains a grid of 20 horizontal lines for note-taking, arranged in 4 rows and 5 columns. Each row contains 5 lines, and each column contains 4 lines. The lines are blue and slightly curved, providing a guide for writing notes.

Monoprinting

is the process of making a print using 'mark making'. Mark making is any mark made using any material on any surface, such as:

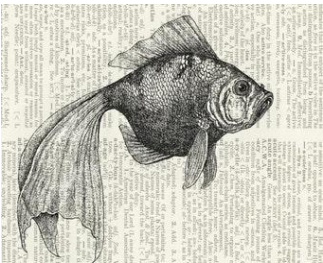
- pencil on paper;
- photoshop brush mark on a screen;
- scratch in clay;
- paint on a canvas.

A mark can be a line, a dot, a scratch, a curve, a thumbprint and so on. Using different tools can help create different thicknesses and types of marks. The colour used to create monoprints is usually water-based ink. A roller is used to apply the ink evenly over the a printing sheet. This is usually an acrylic sheet or other washable flat surfaces.



Etching is the process of printing produced by 'etching' patterns, shapes and designs into the surface of a metal or acrylic plastic plate.

- 1.Scratch your image or design into the surface of the plate;
- 2.Apply colour by rolling ink onto the etched surface;
- 3.Wipe the surface so that only the ink collected in the in the scratched areas is left;
- 4.Carefully place paper on top of the inked sheet;
- 5.Use a printing press to apply pressure and lift the image onto your paper.



Collograph Printing

is a type of printmaking, traditionally made from a collaged printmaking plate. Shapes and textures are layered on a plate (usually metal, masonite or plexiglass) and sealed with a gloss varnish. After the sealed assemblage dries, the surface is inked, and wiped, intaglio style, with tarlatan, which is starched cheese cloth. The wiping removes ink from the uppermost surface area, but leaves plenty of pigment embedded around the textural elements and caught against the curbs of layered shapes on the collage. When the inked and wiped collagraph plate is pressed against paper, usually on a press, the resulting collagraph print is richly textured and wonderful.

PRINTING TECHNIQUES

There is a wide variety of printing techniques to explore... Here are some examples.



The Great Wave, Katsushika Hokusai, 1830-32, woodblock print.

Silkscreen Printing

A print is made using a or **acetate** placed over a mesh cloth stretched over a heavy frame. A stencil can be created by carefully cutting out a design from paper and then attaching it to the silkscreen. The design is printed by having a **squeegee** force colour through the pores of the material in the areas that are not blocked out by the stencil. Silkscreen prints are usually made with acrylic paint that is mixed with a **binder**, to allow the colour to flow easily through the pores and to fix the design. The most successful silkscreen prints use bold, simple shapes and designs with limited colours. For example, Andy Warhol's Cow .

Block Printing

Is the process of carving patterns, shapes and designs into a 'block'. The 'block' could be made of wood, acrylic plastic sheet, lino or metal. Different materials are suited to different results:

- Metal or **acrylic** sheets can produce much finer lines with 'sharper' detail.
- Wood and lino are more suited for bolder images.

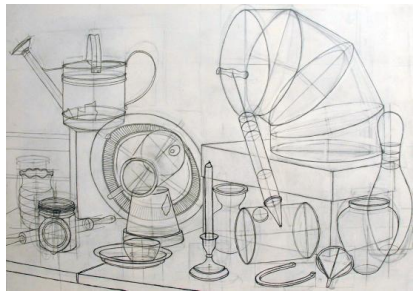
The drawback with all of these materials is that each mark you make on the printing sheet will be printed – you cannot afford to make any mistakes. Block prints are usually made with oil-based ink.

What makes a great drawing?

1) PROPORTION:

Your first stage is to ensure that you get good proportion. Proportion is the size of shapes in relation to others.

This should be achieved using universal shapes as a starting point. While considering the position and size of the shapes in relation to each other.



2) LIGHT LINES:

- Draw lightly and delicately to allow modifications.
- Never create dark cartoon like outlines.

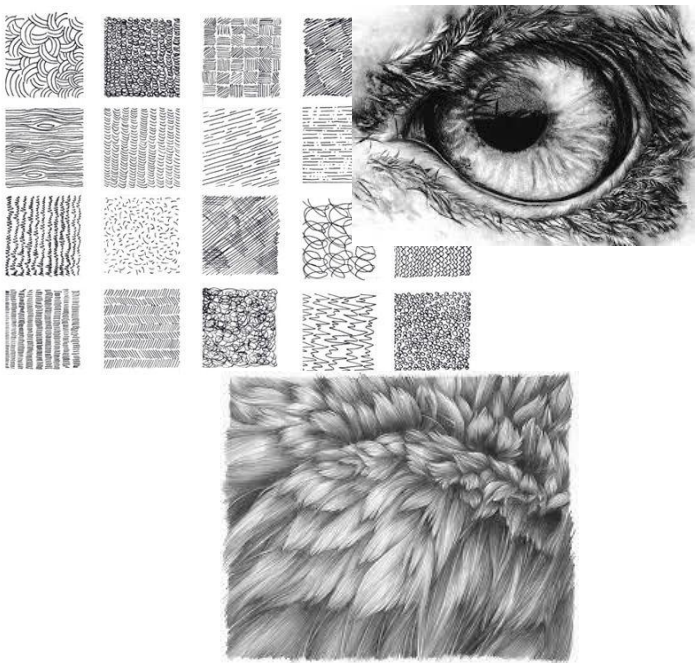
3) STRONG TONAL VARIATION:

- There must be strong tonal variation from very light all the way through to very dark.
- Build up darker tones by layering light delicate layers.



4) TEXTURE:

- Where necessary and appropriate, you need to develop the textures that you see.
- Use appropriate mark-making techniques to create accurate textures.
- Think about how to move your pencil to create marks that record the textures you see.



5) REFINE YOUR WORK

- Never be satisfied, build into your work, develop your work.
- Keep striving for perfection.
- Practice in this case really does make perfect.

Year 9: Photo Frame
User centred design



So, who are the users?
What do they do?



Manufacturer -
Responsible for making the product.



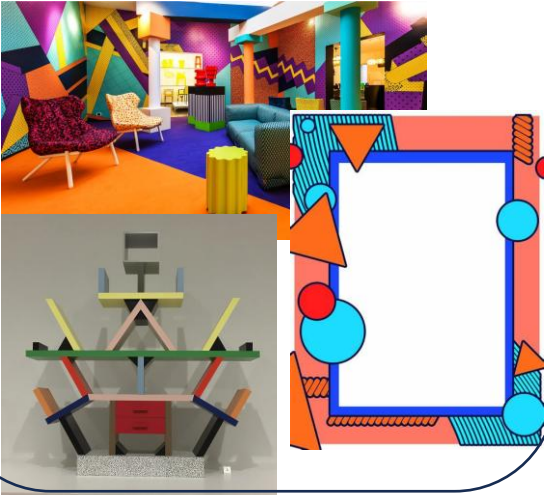
Retailer -
Responsible for selling and advertising the product.



Consumer –
• YOU!
• The person who the product is targeted at.
• The person who will buy the product.



Memphis Design is an influential postmodern style that emerged from the celebrated Memphis Design collective of Milan-based designers in the early 1980s. It was spearheaded by the legendary Italian designer Ettore Sottsass (1917-2007)



Production methods

One off production – a single unique manufacture of a bespoke item.
Batch production - is a manufacturing method where sets of identical goods go through production stages together.
Just in time production - is system of production that makes and delivers just what is needed, just when it is needed, and just in the amount needed.
Mass production - the production of large quantities of a standardised article by an automated mechanical process.

Technology Push is when new developments in materials and technologies improve existing products/create new ones.
Market Pull is when consumers demand improvements/new products. Often found by conducting market research.

Sustainable design: The 6 R's

- Recycle** Reprocess the material and make something else
- Reuse** Take a product and use for a different purpose without reprocessing it
- Repair** If something breaks, try to fix it
- Refuse** Refuse to buy or use something that is not needed
- Reduce** Consider making the item small or using less materials, and less impact on the environment
- Rethink** Look for alternative ways of making something or improving a design

Mitre

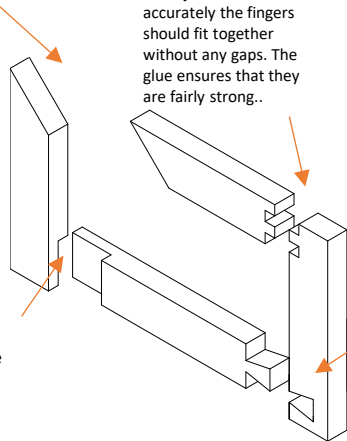
It is made by cutting 2 pieces of timber at angle of 45 degrees to ensure they fit into each other

Finger

If the joint is cut accurately the fingers should fit together without any gaps. The glue ensures that they are fairly strong..

Half lap

This can be used in the construction of picture frames, windows and doors. Half the thickness of the wood is removed from the 2 pieces to be joined. The wood is then fitted together with a resulting joint that is the same thickness as the rest. This can be reinforced by dowels or fasteners.



Manufacturing processes

Vacuum forming is a simplified version of thermoforming, whereby a sheet of plastic is heated to a forming temperature, stretched onto or into a single-surface mould, and held against the mould by applying a vacuum between the mould surface and the sheet. The vacuum forming process can be used to make most product packaging and speaker casings.

Laser Cutting is a technology that uses a laser to vaporize materials, resulting in a cut edge.

3d Printing process of making a physical object from a three-dimensional digital model, typically by laying down many thin layers of a material.

Line Bending It involves passing an electric current through a conductive wire creating a low heat. The plastic to be formed is then placed over the wire at the precise place where the bend is required.

Injection moulding the shaping of rubber or plastic articles by injecting heated material into a mould.

Die Cutting is a manufacturing process where a die is customised through cutting, forming or shearing to craft a desired shape.

Dovetail

The joint is very strong because of the way the 'tails' and 'pins' are shaped. This makes it difficult to pull the joint apart and virtually impossible when glue is added. This type of joint is used in box constructions such as drawers, jewellery boxes, cabinets and other pieces of furniture where strength is required. It is a difficult joint which requires practice. There are different types of dovetail joint and when cut accurately they are very impressive and attractive

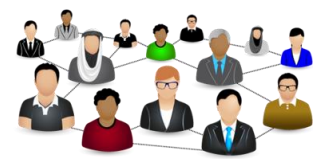
Year 9: Photo Frame User centred design

Engineering Vocabulary: Talk like an Engineer

A client profile is a summary of a specific customer type that is based on available statistical information. It helps businesses to identify which potential clients are good prospects and which ones aren't. A client profile is part of a sales strategy that allows businesses to create marketing materials and form valuable connections with clients. The ideal client profile is a very clear description of the type of client you are targeting. A designer will use a client profile to ensure their work is successful and commercially viable.

Guarantee
Practical/workable/suitable for retail

Target Market
[tär-gät 'mär-kat]
A group of people that have been identified as the most likely potential customers for a product because of their shared characteristics such as age, income, and lifestyle.



Felling- the process of cutting down trees.
Veneer-a thin decorative covering of fine wood applied to a coarser wood or other material.
Seasoning-process of drying out or removing moisture from natural wood.
Prototype- a draft model to test an idea.
Smart materials-materials that have one or more properties that react to stress, moisture, electric or magnetic fields, light, temperature, pH, or chemical compounds.
Resin –synthetic substance used in glues and varnishes.
Adhesive- glue.
Crating- a technique for drawing accurately using boxes.
Isometric- horizontal lines are at 30 degrees. A technique for drawing in 3D.
CAD- Computer Aided Design.
Tri-Square- used for marking straight lines parallel to a straight edge- not measuring.
Coping Saw- cuts curves and is used for think wood or plastic.
Tenon Saw- cuts straight edges on wood only.
Glass Paper- smooths wooded surfaces to prepare for painting.
Working drawing – an accurate drawing of a design with all the measurements used in manufacturing.
Finger Joint- used for box joints. Interlocking fingers.
Butt Joint- pushing two ends of a material together.
Dowelling Joint- small wooden rods used to join wood.
Iterative Design- circular design process, continued development and improvement with testing.
Sustainable –renewable, green design.
Sustainable design is the intention to reduce or eliminate negative environmental impacts through design.

Jigs and Templates enable more than one part to be made several times, quality control in batch production.
Bench Hook is for steadying and supporting work, it hooks into the bench vice.
Vice Used to clamp work to the bench to keep it steady.
Glass Paper is for smoothing work.
Flat Files are also use for smoothing.
M.D.F. Medium Density Fibreboard (Manufactured wood made from wood fibres and glue).
Pine: A natural softwood.
Acrylic: A type of plastic.
Copper: A conductive metal wire used for electronic circuits.
Conductive: allows electrical current to travel or 'flow' through it.
Risk Assessment a process of evaluating the potential risks that may be involved in a projected activity or undertaking.
L.E.D: Light Emitting Diode (a small light to indicate power in a circuit).
Resistor: In electronic circuits, resistors are used to reduce current flow.
U.S.B: Univeral Serial Bus; electrical connector.
Design Situation: A problem that has been identified.
Design Brief: A statement to explain how you will solve the problem (design situation)
Design Specification: A list of requirements your product must have or include to be successful and solve the design situation.
Prototype: a fully functional, full size working product. A test model or first draft, sometimes in cheaper materials.

Ferrous These are metals that contain iron. This means the metal will rust.
Non-Ferrous These are metals that do not contain iron and therefore do not rust.
Alloy is a metal (parent metal) combined with other substances resulting in superior properties such as; strength, hardness, durability, ductility, tensile strength and toughness.
Thermoplastic These plastics can be re-heated and re-shaped in various ways. They become moldable after reheating as they do not undergo significant chemical change.
Thermoset Once heated and moulded, these plastics cannot be reheated and remoulded. The molecules of these plastics are cross linked in three dimensions, and this is why they cannot be reshaped or recycled.
ERGONOMICS Using data to make a product comfortable and easy to use for the user.
ANTHROPOMETRIC Data is used to determine the size, shape and/or form of a product, making it more comfortable for humans to use and easier to use.

Year 9: Passive amplifier User centred design

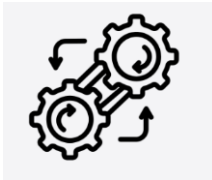
Dual Coding

Technology Push is when new developments in materials and technologies improve existing products/create new ones.

Market Pull is when consumers demand improvements/new products. Often found by conducting market research.



Analyse



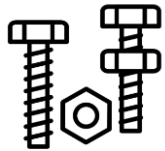
Function

Market
ResearchCommercially
viable

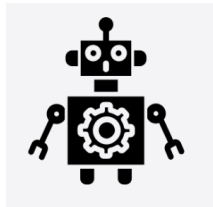
Technology Push



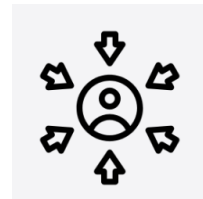
Market Pull

Standard
component

Sustainable



Automation

User centred
design

Sentence starters:

Point: I agree/ disagree to some extent with the statement because....

Evidence: I know this because...for example I learnt that...another example

Explain: This means that....However, some may agree/disagree because

Link: In conclusion, I think

Year 9 Rotation Textiles Knowledge Organiser: Methods of fabric decoration

Annotating design ideas and work of other designers:

Use the following questions to help you annotate your work:

1. What colours do you use a lot of? What effect does this give?
2. Who do you think your designs are aimed at? Why?
3. Explain what you like/dislike about your work and why that is.
4. What techniques will you use to create your design and why?
5. Could different techniques be used to create different effects?
6. How does your design fit into the theme?



Aesthetics



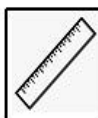
Cost



Client



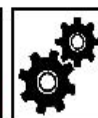
Environment



Size



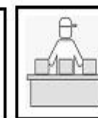
Safety



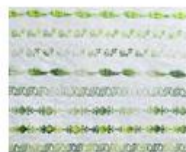
Function



Material



Manufacture



Decorative machine embroidery



KEY POINTS TO REMEMBER

There is a difference between Analysing and Stating. Analysing will always get you more marks than Stating.

Denotation: Literally stating what something is

Connotation: Explaining the meaning of something, what it represents.

See example below:

This is a pink heart.
It represents, love and friendship.



Decorative hand embroidery

Different types of embroidery thread



Different size embroidery needles



Different size embroidery rings



Embroidery scissors



Range of different embroidery stitches



Batik

Batik is a traditional Textile technique which combines painting and dyeing. This is traditionally made by dipping a specially designed **Tjanting** tool into **melted wax** and painting various patterns onto pieces of white fabric.

The wax stays on the fabric and often cracks after it hardens. The fabric is then **dye**d, the dye seeps the cracks and makes fine lines.

When the wax is removed, beautiful patterns appear on the cloth.

Batik fabric can be made into garments, scarves, bags, table-cloths, bedspreads, curtains and other decorative items.

Equipment needed:



Fabric
Dye
Paintbrush
Dye container



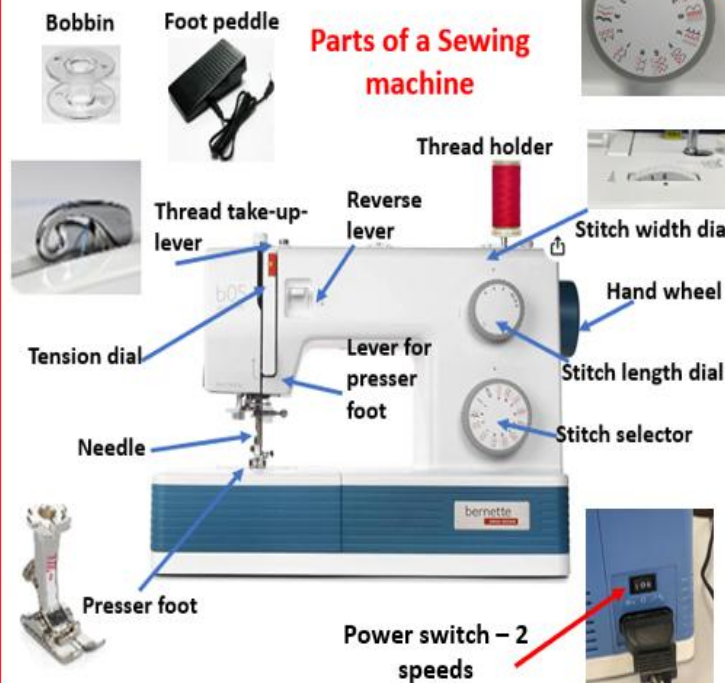
Wax kettle



Wax



Tjanting tool



Stitch selector:
A = straight stitch
B = Zig-zag stitch



Stitch length dial

Important points to remember when using a sewing machine:

1. Put both threads under the **presser foot** and to the back of the machine.
2. Lower the **presser foot** down onto your fabric.
3. When lowering the needle and taking it out of your work always turn the **hand wheel towards you**.
4. When taking your work out of the machine make sure the **take-up-lever** is at the **top** and you can see it.

Year 9 Food Studies Rotation

Most food poisoning can be traced to one of three major causes: bacteria, parasites, or viruses. These pathogens can be found on almost all of the food humans eat. However, heat from cooking usually kills pathogens on food before it reaches our plate. Foods eaten raw are common sources of food poisoning because they don't go through the cooking process.

Occasionally, food will come in contact with the organisms in faecal matter or vomit. This is most likely to occur when an ill person prepares food and doesn't wash their hands before cooking. Meat, eggs, and dairy products are frequently contaminated. Water may also be contaminated with organisms that cause illness.

Sources of food poisoning

Food can become contaminated during production, preparation and retailing. The main sources are:

- Raw food- for example meat, poultry, shellfish and eggs.
- People- food-poisoning bacteria are found on the skin, in septic wounds, in the nose and sometimes in the gut.
- Pests- for examples rats, mice, cockroaches, ants, wasps and flies.
- Animals- domestic pets and farm animals can carry *E.coli* in their intestines.
- Air and dust- food must be covered as bacteria in the air can settle on the surface.
- Water- bacteria such as *Salmonella* are carried in untreated water.
- Soil- bacteria and spores can survive in soil, so can be found on unwashed vegetables.
- Food waste- waste needs to be disposed of correctly as it could be a source of contamination and may attract pests.



Conditions necessary for food poisoning

Visible symptoms	Non-visible symptoms
Shivering Diarrhoea Vomiting	Feeling tired or weak Stomach ache Headache Feeling nauseous (sick)

Bacteria can grow rapidly in the correct conditions. A single **bacterium** can divide into two by the process called **binary fission**. A single bacterium can produce 16 million bacteria in only 12 hours.

Food poisoning bacteria have four essential requirements for growth:

- **Food**- bacteria grow rapidly in high risk foods that are good sources of protein; such as cooked meat and poultry, shellfish, and seafood, undercooked or lightly cooked eggs, unpasteurised milk and cheeses, cooked rice and pasta, and salads.
- **Moisture**- bacteria cannot multiply without moisture, which means that they do not usually affect dried foods or products with high quantities of salt or sugar, which absorb water.
- **Warmth**- most bacteria multiply at **ambient temperature** - normal room temperature. This falls within the danger zone between 5°C and 63°C. Below 5°C most bacteria are unable to multiply rapidly, and below -18°C they become **dormant**. Cooking food at high temperatures above 63°C will destroy most bacteria; when cooked, the food should reach 75°C for at least two minutes.
- **Time**- in the right conditions the number of bacteria can double every 20 minutes.

The acidity and alkalinity of a food can influence the growth of bacteria. If conditions are too acidic or too alkaline, bacteria can not grow.

Symptoms of food poisoning

- A symptom is a sign or indication of a disease.
- The body reacts to bacteria or toxins by developing symptoms such as diarrhoea, vomiting, stomach pains, headache and sweating.
- Some of these symptoms are visible and some are non-visible

Symptoms of food allergies

A food allergy is a serious reaction to a food or ingredients in food. It is caused by the body's immune system reacting to an allergen. If the reaction to a food is a bad one, it could give the following symptoms:

- Skin rash
- Itchiness of skin, eyes and mouth.
- Swollen lips, face, eyes
- Difficulties in breathing.

In severe cases, it can bring about anaphylactic shock- the person develops swelling in their throat and mouth, making it difficult to speak or breathe. This can lead to death if appropriate treatment, such as an EpiPen, is not used quickly.

Symptoms of food intolerances and coeliac disease

Some people have a sensitivity to certain foods, which can cause symptoms such as nausea, abdominal pain, joint aches and pains, tiredness and weakness. This is called a food intolerance- this is not an allergic reaction and it does not involve the immune system.

Coeliac disease is neither a food allergy nor a food intolerance but an autoimmune disease caused by a reaction of the immune system to gluten- a protein found in wheat, rye and barley. The symptoms of coeliac disease vary from person to person and can range from mild to severe.

Symptoms of coeliac disease include:

- Severe diarrhoea, excessive wind and/or constipation
- Persistent or unexplained gastrointestinal symptoms, such as nausea and vomiting.
- Recurrent stomach pain, cramping or bloating.
- Iron, vitamin B12 or folic acid deficiency.
- Anaemia
- Tiredness
- Sudden or unexpected weight loss.

Symptoms of lactose intolerance include:

- Abdominal pain
- Nausea
- Diarrhoea
- flatulence

Environmental Health Officers (EHOs) are responsible for carrying out measures to protect public health and to provide support to minimise health and safety hazards.

Role of EHOs

- They look after the safety and hygiene of food through all stages of the manufacture or production from distribution to storage and service.
- They help develop, co-ordinate and enforce food safety policies.
- They have the right to enter and inspect food premises at all reasonable hours and can visit without advance notice.
- They carry out routine inspections of all food premises in their area; the frequency of routine inspections depends on the potential risk posed by the type of business and its previous record- some high-risk premises may be inspected at least every six months, others much less often.
- They visit premises as a result of a complaint.
- They have powers of enforcement and can close businesses in extreme cases.

Responsibilities of EHOs

- They check that food producers handle all food hygienically so as not to give customers food poisoning.
- They check that food is being kept at the specific temperatures at which it should be stored or held.
- They check that staff are properly dressed, with clean nails, no jewellery, hair covered or tied back, and showing good hygiene habits.
- They review processes in the workplace, such as the handling of food, use of equipment, use of colour coded chopping boards, washing-up and disposal of waste.
- They inspect food stores-fridges, freezers and dry stores.
- They check stock rotation and temperature logs.
- They check that equipment is clean, well maintained and with safety notices if appropriate.
- They check the temperature of the food when it is cooked with probes to ensure that it is at the correct temperature.
- They ask questions to check compliance with the law or good practice.
- They identify potential hazards.
- They review safety management systems and plans.
- At the end of an inspection they give verbal feedback, discuss any problems and advise on possible solutions. They complete a report of inspection findings, which tells the business what **enforcement action** is to be taken.



DT: Food



Enforcement action

Enforcement action is required by law following an inspection from an EHO.

Enforcement action can range from verbal advice, informal or formal letters, and notices through to prosecution.

Formal Inspection letters- tells the food business which issues must be addressed to comply with the law. The EHO may revisit the business to check that the issues have been resolved.

Hygiene Improvement Notices- An EHO can serve a Hygiene Improvement Notice when they believe that a food business is failing to comply with food hygiene regulations. This notice will specify what is going wrong and what needs to be done by which date. The EHO will visit again to see if the required work has been done. If it has not improved, it can lead to a fine or imprisonment.

Hygiene Emergency Prohibition Notices- If an EHO believes that there is a significant risk to health and injury, a Hygiene Emergency Prohibition Notice may be served. The notice stops the use of the unsafe equipment, processes or premises immediately. It can only be removed by an EHO once the issues have been addressed.

Voluntary closure- A food business may elect to close voluntarily to carry out improvements. However, should the business reopen before the improvements are completed, the EHO will serve a Hygiene Emergency Prohibition Notice.

Seizure and detention of food- EHOs have the power to inspect and seize food suspected of not meeting food safety regulations. Food is taken if there is suspicion that it is contaminated and is likely to cause food poisoning or disease. Seized food may undergo microbiological examination and testing.

Condemnation of food- In order to condemn or seize food, the EHO must present their findings to a court. They will consider the information and decide whether the food poses a risk to human health and whether or not to condemn it.

Voluntary surrender of food- The owner of a business may surrender unfit food to the EHO voluntarily. This would avoid the involvement of the court.

Food Safety Act 1990

- This act is concerned with all aspects of food production and sale.
- It affects everyone involved in the production, processing, storage, distribution and sale of food.
- It ensures that all food produced is safe to eat.
- The act states that it is an offence to make food sold for human consumption unsafe to eat.
- A food producer or retailer may not add any substances to food, or subject food to any process or treatment, which will make it harmful to health.
- An EHO may inspect any food intended for human consumption at any reasonable times. If the food is regarded as unfit for human consumption, it may be seized.
- The legislation also provides a defence for food producers, processors and retailers. They must prove that all reasonable precautions were taken to prevent a food safety incidence. This is called **due diligence**.
- Failure to take reasonable precautions can result in prosecution.
- Magistrates' courts may impose a fine, prison sentence or both for offences committed.

Hazard analysis and critical control points (HACCP)

This is a process that is designed to help look at how you handle food and to put procedures in place to ensure that the food you produce is safe to eat.

Every business that produces, sells or serves food is required to have a HACCP plan in place with a written **food safety plan**. It is the responsibility of the owner of the business to develop an appropriate food safety management system based on HACCP.

HACCP systems should apply the following principles:

1. Create a flow chart or table showing each step in the preparation, making, serving and storing of each dish.
2. Each step should be analysed to identify the hazards. Hazards can be:
 - Physical- foreign materials can cause injury to the consumer; these might be metal or plastic, or natural hazards such as bones in fish.
 - Biological- food can become infected by bacteria, which might lead to food poisoning
 - Chemical- potentially dangerous chemicals such as cleaning fluids can contaminate food.
3. Identify what can be done to control (prevent) the hazard.
4. Set guidelines on how to ensure food is going to be safe to eat- these are known as critical limits- and keep a record of this.
5. When new dishes are made, there needs to be a HACCP review to ensure that they are safe to eat.
6. All the documentation relating to the HACCP needs to be kept safe.

Love Food Hate Waste

BEST BEFORE

‘Best before’ refers to quality: your food will be at its best before the date given. After this date, it might not be at its best, but it will still be safe to eat. Use your senses to make a judgement.

Depending on how your food is stored, it has the potential to be good enough to eat for a long time after this date. Here’s a guide to a few key food items and how long after the date they can be eaten:

- Crisps – one month;
- Biscuits – six months;
- Cereals – six months;
- Canned food – 12 months;
- Confectionary – 12 months;
- Pasta sauce – 12 months;
- Dried pasta – three years!

USE BY

‘Use by’ refers to safety: you must not eat food past the ‘use by’ date. You cannot always smell the bacteria that causes food to spoil, so after the ‘use by’ date, the food may appear perfectly fine to eat, but could still lead to food poisoning. Let’s be absolutely clear: you should NOT eat food after the ‘use by’ date - even if it looks and smells OK.

Top tip: you can freeze food right up to and including the ‘use by’ date. If you’re not sure you will eat it in time, freeze it for another day!

DISPLAY UNTIL / SELL BY

These dates are for the retailers – not us at home. You don’t need to worry about these.

Some products, such as uncut fruit and vegetables and wine, for example, aren’t required to have a date label, and there are specific regulations referring to hen’s eggs, which require the use of a Best Before date.

An average family of four can save £60 a month simply by reducing the amount of food they throw away. There are lots of simple food hacks and tips on this website to help you learn how to be smarter with handling food from the moment you start thinking about shopping through to when you are cooking, preparing and serving your meals.

Leftover food recipes – not sure what to do with the odd bits of food left in your fridge? Take a look at the love food hate waste website [leftover recipes](#) to find something to create with your leftovers. Tip: type in two or three of your leftover foods in the search bar to find relevant recipes to make.

Freeze leftovers – cooked or prepared too much? No problem – just pop them in a container or sealed bag, write the date and what the food is on a label and place it in your freezer. You can freeze most food. **Planning how to be a smarter shopper** – not everyone likes to plan, however, being ahead of the game with your weekly shopping will help you save a few pounds so it’s worth it. Here are a few tips to think about:

•**Make planning your meals a fun family activity** – ask your younger folk to choose something they would like to help you make during the week. If you have some fussy eaters this might also save some food from the bin too as they are more likely to eat food they’ve helped to make.

•**If you live with friends** – share an evening meal once a week and make it a social affair. Decide what you’ll cook before you go shopping.

•**Plan some one-pot meals** – so meal cooking is simple and you can use up what’s left in your fridge too. You can switch the ingredients to use up the food you already have. **Plan the rest of your meals around your favourites** – remember that you can include frozen food or staples from your cupboard. Mixing up the types of food you buy and use for your meals means there’s less chance of having too much fresh food that is likely to go off before you can use it.

Top tip – why not write each of your favourite recipes onto one small piece of card per recipe (suggestion: cut up an old cereal box) plus one card for each day of the week. Stick the days of the week onto your fridge or cupboard door in a row. Then you can easily play around with your meals for the week under each day until you are happy. Plus – you can easily swap meals around if you don’t fancy one on the planned day. Encourage your family, partner or housemates to join in too.

Know what you need before you get to the shop by making a list – and stick to it. We know that this is harder than it seems, however, it’s worth finding a way that works best for you. Make it easy and simple by following some of these ideas:

•**Fridge/cupboard/freezer shelfies** – take a snap of the food you have left in your fridge, cupboard and freezer before you hit the shop to remind you what you have already got. This will save you from buying more than you need.

•**Keep an ongoing list on your phone** - using your notes app or send a text message to yourself.

•**Pop some note paper on your fridge door** - and make a note of things you are running out of.

•**Prepare your list in the layout of your supermarket** – this will enable you to spend less time shopping and more time at home enjoying your food.

•**Plan weekly shops** – by reducing the number of times you visit a supermarket you will reduce the temptation to buy extras!



Based on the DT subject you are studying, pick 7 words; draw the dual code for it; write a simple definition then an example sentence in the table provided.

Year 9 Subject specific Vocabulary in Technology

Engineering	Food	Textiles
•Target market •User centered design •Commercially viable •Sustainability •Market research •Standard component •Scale •Automation •ACCESSFM	•Food poisoning •Symptom •Hazard •Control •Inspection •Food Law	•Embroidery •Analyse •Batik •Tjanting tool •Seam •Hem •Construction Techniques

Dual code/
definition

Example sentence

SOUNDTRACKS

Exploring Film Music- Year 9



A. The Purpose of Music in Film

Film Music is a type of **DESCRIPTIVE MUSIC** that represents a **MOOD, STORY, SCENE** or **CHARACTER** through music, it is designed to **SUPPORT THE ACTION AND EMOTIONS OF THE FILM ON SCREEN**. Film Music can be used to:

- Create or enhance a mood (though the **ELEMENTS OF MUSIC**);
- Function as a **LEITMOTIF** (see D);
- To emphasise a gesture (**MICKEY-DOUSING** – when the music fits precisely with a specific part of the action in a film e.g. cartoons);
- Provide unexpected juxtaposition/irony (using music the listener wouldn't expect to hear giving a sense of uneasiness or humour!);
- Link one scene to another providing continuity;
- Influence the pacing of a scene making it appear faster/slower;
- Give added commercial impetus (released as a **SOUNDTRACK**) – sometimes a song, usually a pop song is used as a **THEME SONG** for a film;
- Illustrate the geographic location (using instruments associated with a particular country) or historical period (using music 'of the time').

D. Leitmotifs

LEITMOTIF – A frequently recurring short melodic or harmonic idea which is associated with a character, event, concept, idea, object or situation which can be used directly or indirectly to remind us of one not actually present on screen. Leitmotifs can be changed through **SEQUENCING, REPETITION** or **MODULATION**



giving a hint as to what may happen later in the film or may be heard in the background giving a "subtle hint" to the listener e.g. the "Jaws" Leitmotif

E. History of Film Music

Early films had no soundtrack ("**SILENT CINEMA**") and music was provided live, usually **IMPROVISED** by a pianist or organist.

Homework- Choose one of the famous film music composers on this knowledge organiser and research him and write about:

- Films that they have composed
- Instruments used
- Musical elements used throughout compositions and performances

B. How the Elements of Music are used in Film Music

PITCH AND MELODY – **RIISING MELODIES** are often used for increasing tension, **FALLING MELODIES** for defeat. Westerns often feature a **BIG THEME**. **Q&A PHRASES** can represent good versus evil. The **INTERVAL OF A FIFTH** is often used to represent outer space with its sparse sound. **DYNAMICS** – **FORTE (LOUD)** dynamics to represent power; **PIANO (SOFT)** dynamics to represent weakness/calm/resolve. **CRESCENDOS** used for increasing threat, triumph or proximity and **DECRESCENDOS** or **DIMINUENDOS** used for things going away into the distance. Horror Film soundtracks often use **EXTREME DYNAMICS** or **SUDDEN DYNAMIC CHANGES** to 'shock the listener'. **HARMONY** – **MAJOR** – happy; **MINOR** – sad. **CONSONANT HARMONY OR CHORDS** for "good" and **DISSONANT HARMONY OR CHORDS** for "evil". **SEVENTH CHORDS** often used in Westerns soundtracks. **DURATION** – **LONG** notes often used in Westerns to describe vast open spaces and in Sci-Fi soundtracks to depict outer space; **SHORT** notes often used to depict busy, chaotic or hectic scenes. **PEDAL NOTES** – long held notes in the **BASS LINE** used to create tension and suspense. **TEXTURE** – **THIN/SPARE** textures used for bleak or lonely scenes; **THICK/FULL** textures used for active scenes or battles. **ARTICULATION** – **LEGATO** for flowing or happy scenes, **STACCATO** for 'frozen' or 'icy' wintery scenes. **ACCENTS (>)** for violence or shock. **RHYTHM & METRE** – 2/4 or 4/4 for Marches (battles), 3/4 for Waltzes, 4/4 for "Big Themes" in Westerns. **IRREGULAR TIME SIGNATURES** used for tension. **OSTINATO** rhythms for repeated sounds e.g. horses.

C. Film Music Key Words

SOUNDTRACK – The music and sound recorded on a motion-picture film. The word can also mean a commercial recording of a collection of music and songs from a film sold individually as a CD or collection for digital download.

MUSIC SPOTTING – A meeting/session where the composer meets with the director and decides when and where music and sound effects are to feature in the finished film.

STORYBOARD – A graphic organiser in the form of illustrations and images displayed in sequence to help the composer plan their soundtrack. **CUESHEET** – A detailed listing of **MUSICAL CUES** matching the visual action of a film so that composers can time their music accurately. **CLICK TRACKS** – An electronic

METRONE which helps film composers accurately time their music to on-screen action through a series of 'clicks' (often heard through headphones) – used extensively in cartoons and animated films. **DIEGETIC FILM MUSIC** – Music within the film for both the characters and audience to hear e.g. a car radio, a band in a nightclub or sound effects.

NON-DIEGETIC FILM MUSIC – Music which is put "over the top" of the action of a film for the audience's benefit and which the characters within a film can't hear – also known as **UNDERScore** or **INCIDENTAL MUSIC**.

F. Film Music Composers and their Soundtracks



Jerry Goldsmith
Planet of the Apes
Star Trek: The Motion Picture
The Omen



John Williams
Star Wars
Jaws
Harry Potter
Indiana Jones
Superman, E.T.



James Horner
Titanic
Apollo 13
Braveheart
Star Trek II: The Wrath of Khan



Ennio Morricone
The Good, the Bad and the Ugly
For a Few Dollars More



Danny Elfman
Mission Impossible
Batman Returns
Men in Black



Hans Zimmer
The Lion King
Gladiator
Dunkirk
Blade Runner



Bernard Herrmann
Psycho
Vertigo
Taxi Driver



YEAR 9 DANCE

Developing creativity, confidence and performance skills through a range of dance styles and contexts.



Dance

1. PERFORMANCE SKILLS

Strong performance skills help you communicate your ideas clearly and engage your audience.



POSTURE

Maintain strong alignment, control and extension.



MOVEMENT MEMORY

Learn, retain and perform choreography with accuracy and confidence.



DYNAMICS

Explore changes in energy, weight, time, space and flow to add interest and expression.



SPATIAL AWARENESS

Use space effectively at different levels, in directions and formations.



PERFORMANCE QUALITY

Focus on facial expression, commitment, energy and connection with your audience.



COMMUNICATION

Use movement, expression and intent to clearly communicate meaning.

WHAT THIS LOOKS LIKE

- ✓ Clear technique and control
- ✓ Confident and expressive performers
- ✓ Awareness of the audience
- ✓ Strong energy and focus
- ✓ Commitment to the performance

2. PROFESSIONAL WORK – FIVE SOLDIERS BY ROSIE KAY

Learning from professional dance works helps you understand how choreographers create meaning and impact.



ABOUT THE WORK

- Choreographer: Rosie Kay (2012)
- Inspired by the real life stories of five soldiers.
- Explores the physical and emotional journey of war and returning home.
- Mixes contemporary dance with athletic, powerful movement.

KEY FEATURES TO KNOW

ACTION & CONTENT	Tells the story of five soldiers through physical and emotional journeys.
CHOREOGRAPHIC STYLE	Contemporary dance style with contact work, lifts and partnering.
DYNAMICS	Strong use of contrast – sharp and powerful vs. soft and fluid.
SPACE	Uses unison, formations, canon and different levels.
RELATIONSHIPS	Highlights brotherhood, tension, support and loss.
COSTUME & SET	Military inspired costumes; simple set to focus on the dancers.
SONG/ MUSIC	Original score that builds emotion and atmosphere.

KEY KNOWLEDGE

- Professional works are choreographed to communicate a message.
- Choreographers make creative choices to engage their audience.
- We can analyse, interpret and evaluate professional works.

3. CHOREOGRAPHY DEVELOPMENT

Developing choreography helps you create original and effective dance.



IDEA GENERATION

Use stimuli, imagination and experimentation to generate movement ideas.



EXPLORATION

Explore different movement qualities, relationships, dynamics and space.



SELECT & DEVELOP

Choose the best ideas and develop them further. Refine movement phrases.



STRUCTURE

Organise ideas using devices such as unison, canon, contrast, repetition, accumulation and motifs.



CREATE

Put your ideas together to create an original dance.



REHEARSE & REFINE

Practise, get feedback and improve your choreography.



PERFORM & EVALUATE

Perform your dance and evaluate your own work and the work of others.

KEY KNOWLEDGE

- Choreography is a process – it develops over time.
- Using choreographic devices makes your work more effective.
- Feedback helps you refine and improve your dance.

4. MUSICAL THEATRE – HAMILTON

Learning dance from a musical theatre production helps you develop performance skills and stagecraft.



THE SHOW

Hamilton is a musical about the life of Alexander Hamilton and the founding of America. It blends hip-hop, R&B, pop, jazz and traditional musical theatre.



KEY DANCE STYLES

Includes hip-hop, jazz, choreography inspired by history and street dance influences.



PERFORMANCE SKILLS

Strong storytelling, characterisation, energy, precision and ensemble work are key.



CHOREOGRAPHY

Choreographed by Andy Blankenbuehler. Movement supports the lyrics, tells the story and defines characters.



STAGECRAFT

Use of levels, formations, entrances and transitions to create impact on stage.

KEY THEMES THROUGH DANCE

- ★ Ambition
- ★ Power
- ★ Revolution
- ★ Identity
- ★ Legacy



KEY KNOWLEDGE

- Musical theatre combines acting, singing and dancing.
- Dance on stage helps to tell the story and develop characters.
- Energy, timing and teamwork are essential in performance.

KEY VOCABULARY

Alignment	Correct placement of body parts.	Dynamics	The energy, weight and force in movement.	Phrase	A short section of movement.
Canon	When dancers repeat movements one after another.	Formation	The shape or pattern made by dancers.	Unison	Dancers moving at the same time.
Contrast	Using opposite actions, dynamics or directions.	Motif	A short movement idea that is repeated or developed.	Stagecraft	How performers use the stage and performance elements.

ACROSS ALL TOPICS, YOU WILL...



THINK CREATIVELY

Use imagination to generate and develop ideas.



WORK TOGETHER

Collaborate, communicate and support others.



REFLECT & IMPROVE

Evaluate your strengths and set targets.



BUILD CONFIDENCE

Take risks, challenge yourself and celebrate progress.



ENJOY DANCE!

Express yourself and develop a lifelong passion for dance.



YEAR 9 DANCE

Developing creativity, confidence and performance skills through a range of dance styles and contexts



1. DEVISING DANCE USING A WRITTEN BRIEF

Devising means creating original dance.
A written brief gives you a starting point or focus for your ideas.

THE PROCESS



1. UNDERSTAND THE BRIEF

Read the brief carefully. Highlight key words and clarify what the focus is.



2. RESEARCH & EXPLORE IDEAS

Explore different stimuli (images, music, words, themes, objects).
Note down ideas, thoughts and feelings.



3. EXPLORE MOVEMENT

Experiment with a range of movement ideas using the elements of dance to respond to the brief.



4. SELECT & DEVELOP

Choose the best ideas. Develop movement phrases and link them together.
Consider structure and transitions.



5. REFINE & IMPROVE

Rehearse and refine your dance.
Ask for feedback and make improvements to strengthen your work.



6. PERFORM & EVALUATE

Perform your dance with confidence.
Evaluate your work and the work of others using key criteria.

KEY CONSIDERATIONS



Purpose – What is the intention of your dance?



Audience – Who is your dance for?



Mood/Atmosphere – What mood are you trying to create?



Theme/Idea – What is your dance about?



Style/Genre – What style or influences will you use?



Structure – How will your dance be organised?



Choreographic devices – How will you use unison, canon, levels, repetition, contrast, formations and motif?

ELEMENTS OF DANCE TO CONSIDER

★ **Action** – what the body does

★ **Dynamics** – how the movement is done

★ **Space** – where the movement happens

★ **Relationships** – how dancers interact

★ **Motif** – a movement idea that is repeated or developed

KEY KNOWLEDGE

- A clear response to the written brief makes your dance focused and effective.
- Using a range of choreographic devices and the elements of dance improve your work.
- Evaluating throughout the process helps you refine and improve your dance.

KEY VOCABULARY

Devising	Creating original dance.	Expressionism	A dance style using exaggerated, angular movements to express strong emotion.
Stimulus	Something that inspires ideas.	Fusion	Combining two or more dance styles.
Choreographic device	A tool used to create and structure choreography.	Intent	The purpose or meaning behind the choreography.
Motif	A movement idea that is repeated or developed.	Interpret	To explain or understand the meaning of a dance.

2. CRITICAL APPRECIATION OF PROFESSIONAL WORK – EMANCIPATION OF EXPRESSIONISM

Emancipation of Expressionism is a professional dance work by Alessandra Seutin (2019).
It is a fusion of Expressionist dance style and street dance, exploring themes of freedom, identity and breaking barriers.

ABOUT THE WORK

- **Choreographer:** Alessandra Seutin
- **Style:** Fusion of Expressionist dance and street dance (hip-hop, breaking)
- **Year:** 2019
- **Performed by:** Seutin Dance Company
- **Themes:** Freedom of expression, individuality, breaking boundaries, social influence
- **Set/adaptation:** Uses a large cube-like structure representing confinement and control.
- **Costumes:** Dancers wear similar neutral costumes (symbolising conformity) which change as the work progresses.
- **Music:** Strong, driving electronic score that builds in intensity.
- **Structure:** The work has a clear journey from confinement to freedom.

KEY FEATURES



EXPRESSIONIST INFLUENCE

Strong, angular, and exaggerated movement to show emotion and inner conflict.



STREET DANCE INFLUENCE

Use of isolations, grooves, sharp actions, footwork and acrobatic skills.



CONTRAST

The dance contrasts controlled, restricted movement with freedom and release.



FORMATION & SPACE

Dancers often start in unison and close formations, then break away to use the space individually.



DYNAMICS

The work uses a range of dynamics from sudden, sharp movements to powerful, flowing movement.



NARRATIVE/INTENTION

Tells a story of breaking free from rules and expectations to find your own identity and voice.

THINGS TO CONSIDER WHEN WATCHING THE WORK

- ✓ What is the main idea or message of the dance?
- ✓ How do the dancers use movement to communicate this?
- ✓ How are the elements of dance used to create meaning?
- ✓ How does the choreography develop throughout the work?
- ✓ What effect does the set, lighting, costume and music have?
- ✓ How effectively does the dance engage the audience?
- ✓ What did you like or dislike and why?

KEY KNOWLEDGE

- Understanding professional work helps you gain ideas for your own choreography.
- Using subject-specific language allows you to analyse and evaluate dance accurately.
- Considering choreographic intent, style, context and impact develops your critical appreciation skills.

SUBJECT-SPECIFIC LANGUAGE

- | | | | | |
|-------------|----------|-------------|--------------|-------------|
| • Motif | • Unison | • Dynamics | • Isolation | • Fusion |
| • Canon | • Levels | • Contrast | • Formation | • Intention |
| • Structure | • Timing | • Narrative | • Expressive | • Impact |

ACROSS ALL TOPICS, YOU WILL...



THINK CREATIVELY

Use imagination to generate ideas and solve problems.



WORK TOGETHER

Collaborate, communicate and support others.



REFLECT & IMPROVE

Evaluate your strengths and set targets.



BUILD CONFIDENCE

Take risks, challenge yourself and celebrate progress.



ENJOY DANCE!

Express yourself and develop a lifelong passion for dance.

Types of shot

Driven shot - A powerful shot that usually goes straight and has a direct trajectory.

Curl shot - A shot involving spin on the ball which makes the ball move in a curved direction.

Chip shot - A shot kicked high into the air in order to score a goal over the goalkeeper.

Volley - When the ball is struck in the air by the foot of any player before it hits the ground.



Football terminology

Down the line – The 'line' refers to the touchline and this phrase means passing the ball forwards as close to the line as possible.

Pressing – When teams try to win the ball off the opposition quickly.

Sitting back – When teams concede position and call most, if not all teammates back to defend.

Man-on – This phrase is called when a teammate is being quickly closed-down by an opposing player.

First time – This refers to either passing or shooting the football immediately without controlling the ball.

Step up – This is called when a team is defending too deep and needs to move forwards up the pitch.

Switching the play – Kicking the ball from one side of the pitch to the other.

Dive – An attempt by a player to gain an unfair advantage by faking being fouled.

Overload – When a team has more players in an area of the pitch than they usually would.

Creating an overload

The basis of this technique is to overload one side of the pitch in order to drag the opposition to that side, thereby opening up space on the opposite side of the pitch.

One reason a team may overload an area of a pitch is to help keep possession of the ball.

A second reason a team may create an **overload** is to draw in the opposition players to one side of the pitch and then **switch the play** to where there is more space and less defenders.

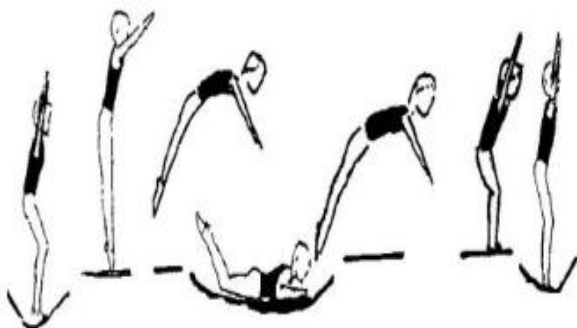
E.g., The team in blue **overload** one area of the pitch to help them keep the ball and draw in opposition players. They then **switch the play** to create a 1v1 attacking scenario for their winger.



Physical Education Trampolining – Year 9

Landings

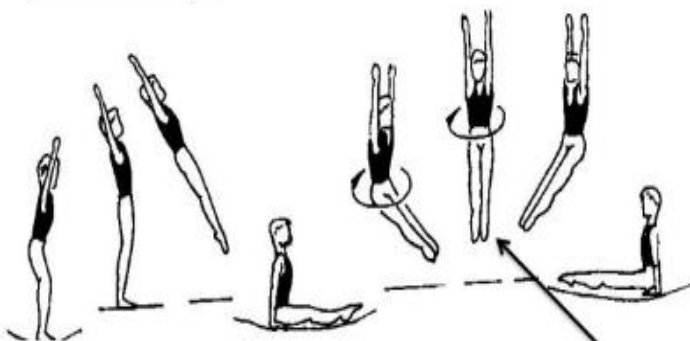
Front landing



TEACHING POINTS

- Push feet back so centre of mass remains over cross.
- Vision – focus on end bed.
- Land with whole forearm in contact with the bed.
- Arms, stomach and thighs land at the same time.
- Push with hands to return to feet.

Swivel Hips



TEACHING POINTS

- Attempt to stand up straight between the 2 seat landings by straightening hips after take off.
- Push with hands so arms are up between landings.
- Look from front end to the mat behind you.
- Keep legs tight and straight.

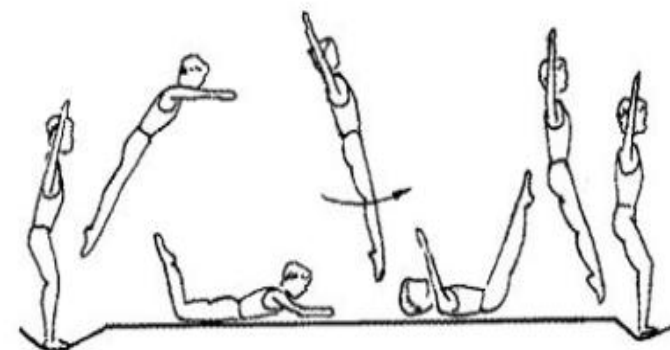
TEACHING POINTS

- Take off for flat back and then pike into the landing.
- Vision – focus on the end frame on the ascent and roof on landing.
- To return to feet – kick upwards and forwards.

Back Landing



Front to back landing



Front to back landing

- Keep legs straight and tight after the front landing and drive hips forward to get a good rotation to land on your back
- Arms come up above your head ready for the back landing.
- If the rotation isn't enough, try front of to seat to get used to the way your legs need to swing through.

What is Cyber Security

Is protecting networks, computers, programs and data from attack, damage or unauthorised access through the use of technologies, processes and practices.

The difference between Data and Information

Data is raw facts and figures. For example, a list of test results for a class. Without any context or analysis, the data may be of limited use on its own.

Information is created when that data has been processed and becomes meaningful. For example, these are scores from a test where the pass mark was 35.

Social Engineering

Manipulating individuals so they give away personal information (e.g. bank account).

Blogging - inventing a scenario to target someone into divulging info. Companies can give employees security training.

Phishing - fraudulently obtaining personal info (using e.g. email or SMS). Beware of links in emails!

Pharming - Cyber-attack to redirect a website's traffic to another, fake site. Check the http address has http's

Shoulder surfing - observing a person's private info over their shoulder (e.g. ATM)

Name Generator Attacks

These are attacks in which the victim is asked in an app or a social media post to combine a few pieces of information or complete a short quiz to **produce a name**. Attackers do this to find out key pieces of information that can help them to answer the security questions that protect people's accounts.



Protection methods

Measures can be used to make it more difficult for attackers.

Firewalls

A firewall checks incoming and outgoing network traffic. It scans the data to make sure it doesn't contain anything malicious and that it follows the rules set by the network.

Anti-malware

The anti-malware will have a list of definitions of sequences of code that they are aware are malicious. If the code in your files matches the definitions, the files are quarantined.

Auto-updates

Software that automatically checks for available updates

Malicious code and attacks

Malware - umbrella term to describe a variety of hostile or intrusive software. Six categories: **Virus, Trojans, Worms, Adware, Spyware and Ransomware.**

• **Computer Virus** - installed on your computer without your permission with the intention to do harm. Viruses spread through email attachments or IM services OR through files/programs downloaded

• **Trojan** - pretends to have a legitimate purpose. Spread by email • **Spyware** - gathers info without user knowing (e.g. bank account details).

• **Adware** - internet usage analysed and then advertising targeted.

• **Hacking** - Gaining unauthorised access of a computer.

• **Script Kiddle** - Are hackers who use tools downloaded from the internet that allow them to hack with little technical knowledge.

• **Denial of Service Attack (DoS)** - Floods a targeted computer or website with lots of requests and internet traffic in an attempt to overload the system.

• **Distributed Denial of Service Attack (DDoS)**- This uses the same concept as a DoS attack but this time it is multiple computers making the attack at the same time.

• **Brute Force Attack** - This makes multiple attempts to discover something, for example a password.

Key Vocabulary

Key Word

Definition

Botnet

A large collection of malware infected devices.

Hacking

Users on a network can be put into groups, with each group having a unique set of

User permissions

Secure passwords, maximum number of attempts, CAPTCHA, Biometrics, Two-factor

User Authentication

Automated programs that perform tasks

Internet bot

Self-replicating virus - Locks a computer, encrypts files and demands a ransom paid before they decrypt the files and unlock the

Ransomware

Indicating form of self-replicating software.

Viruses

Legislation

Data Protection Act 2018

All organisations and people using and storing personal data must abide by the following principles.

Your rights

As a **data subject**, you have the right to find out what information the government and other organisations store about you.

Computer Misuse Act 1990

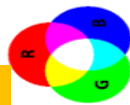
Designed to make hacking into computer systems a criminal offence with a potential jail sentence of up to 10 years and an unlimited fine.



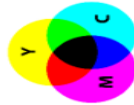
Key Terminology

Word	Meaning/Description
Digital Graphics	A graphic is an image or visual representation of an object. Therefore, computer graphics are simply images displayed on a computer screen.
Bitmap	Pixel based images. This type of image is resolution based. Stretching them, stretches the pixels and loses quality .
Vector	Mathematically based pictures. Made up of lines, shapes etc. (objects). Easily scalable (as they are not pixel based).
Colour mode	RGB: Colours displayed on a computer screen using these three colours (Red, Blue and Green). CMYK Model: Cyan Magenta Yellow and Black (K). CMYK are the range of colours used for printing.

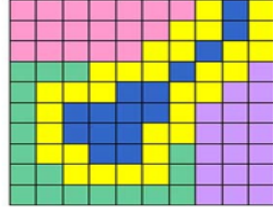
- Images are represented pixels (Picture Elements).
- TVs and monitors produce pixel colours using **Red, Green and Blue light (RGB)**
- All screen colours can be produced just from RGB



- Printed media pixel colours are produced from Cyan, Magenta and Yellow ink (**CMY**).
- It is very difficult to colour match between CMY and RGB



Bitmap vs Vector



Common bitmap (raster) image file types

File Type	Advantages	Disadvantages
JPG (bitmap)	Compresses well, so creates smaller files sizes. Reproduces millions of colours Good for web and printing Common format, used by common software	Lossy file format; Variable picture quality Cannot be used for animation
.GIF (bitmap)	Lossless file format Enables animations (very popular use) Sharp edges to images Good for web use	Larger file size Only 256 colours can be reproduced
.PNG (bitmap)	Lossless file format Reproduces millions of colours Excellent transparency in images	Compresses well Not suitable for digital photos No animation

Common vector image file types

File Type	Advantages	Disadvantages
EPS (vector)	Most common vector type Standard for sharing in print publishing industry	Not widely supported in editing software Generally, Adobe only software
.SVG (vector)	Scalable without image quality reduction International standard for vector graphics High quality printing possible	Not widely supported in software Files sizes can be large wit many elements
.PDF (vector)	Widely supported by many devices Free to view PDF files Small file size	Not free to edit PDF files Text difficult to edit, text is treated as images

Examples of Image Software



Adobe Photoshop: Leading software for editing and creation of bitmap images.



Adobe Lightroom: Leading software for developing digital photographs.

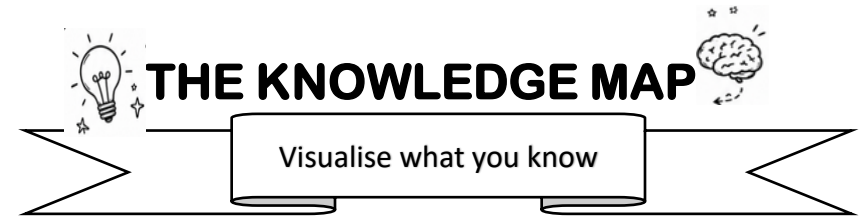
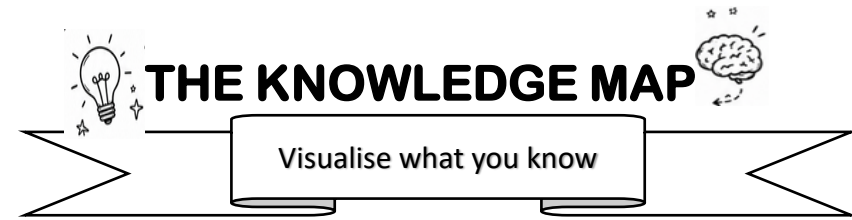


Capture One: Professional photographer image capture and editing of large digital photographs.



Adobe Illustrator: Leading software for editing and creation of vector images.

Have a read through the information on your **PE/ Dance** and **Music** pages and then use the information below to help you create knowledge maps.



Knowledge organiser

Key vocabulary

Adi Granth A collection of hymns and writings of the early Sikh Gurus, compiled by Guru Arjan; it means 'first book'

amrit Sugar that is mixed into water using a sword; it is drunk at the Amrit ceremony

Amrit ceremony Ceremony to become part of the Sikh Khalsa

Bhai A title given to people respected by Sikhs; it literally means 'brother'

caste A series of social classes that determine someone's job and status in society

chapati A type of flatbread commonly eaten in India and Pakistan

disciples Followers of a religious leader

The Five Ks Five articles of faith worn by the Khalsa: kesh (uncut hair), kangha (a wooden comb), kara (a steel bracelet), kachera (special cotton underwear) and kirpan (a short sword)

granthi People who read from, and look after, the Guru Granth Sahib; Sikhs do not have religious leaders or priests and anyone can read from the Guru Granth Sahib

gurdwara The Sikh place of worship; it literally means 'doorway to the Guru'

Gurmukhi A language created by the Gurus and used to write the Guru Granth Sahib

Guru A religious teacher or guide who leads a follower from spiritual ignorance (*Gu*, 'darkness') into spiritual enlightenment (*ru*, 'light')

Guru Granth Sahib The Sikh holy book; the name means 'from the Guru's mouth'

initiated Made a member of a particular group through a special ceremony

Janam Sakhis Stories about the childhood and life of Guru Nanak

karah parshad A sweet food shared at the end of the Amrit ceremony

Kartarpur A town in modern Pakistan where the first Sikh community was founded in 1522 by Guru Nanak

Kaur 'Princess' – the title given to a female Khalsa Sikh

Khalsa The community of Sikhs founded by the tenth Guru, Gobind Singh

khanda The symbol of Sikhism, made up of two double-edged swords, one sword in the middle and a circle

langar A word meaning 'free kitchen'; a communal eating area found in every Sikh place of worship

martyr Someone who is killed for his or her beliefs

monotheist Someone who believes in only one God

Mool Mantra The first hymn written by Guru Nanak; it summarises Sikh beliefs about God

Mughal Empire The rulers of the area that is now India and Pakistan in the sixteenth and seventeenth centuries

naam japna Repeating the name of God over and over as an act of worship

Panj Pyare 'The blessed ones' – the first five men who volunteered to join the Khalsa

revelation A message revealed by God to humans

Sikh A follower of Sikhism; it comes from the Sanskrit word *shishya*, which means 'disciple' or 'learner'

Singh 'Lion' – the title given to a male Khalsa Sikh

Waheguru the most common name used by Sikhs to describe God meaning 'wonderful Lord/Guru'

Key facts

- There are around 25 million Sikhs in the world today, most of them (19 million) living in India.
- Sikhism began with a man called Nanak, who was born in part of India called the Punjab.
- When Nanak was 30 he received a revelation in which he understood that although there are many different religions there is only one God. God loves all people equally, whatever religion they follow.
- Stories about Nanak's childhood and life are collected in the Janam Sakhis.
- Nanak made four long journeys over a period of 20 years, spreading word of his revelation. He visited and talked with Buddhists, Hindus and Muslims.
- The story of the miracle of milk and blood emphasises one of Guru Nanak's important teachings – that of working hard and honestly.
- Guru Nanak died in 1539. He was followed by nine Sikh Gurus, who developed the Sikh tradition.
- Guru Arjan is famous for building the holiest site in the world for Sikhs, the Harmandir Sahib, and for being the first Sikh martyr after his death at the hands of the Mughals.
- The Sikh symbol of the Khanda was established by Guru Hargobind, who put on two swords to indicate his spiritual authority (*piri*) and his worldly authority (*miri*).
- The ninth Guru was Tegh Bahadur, who challenged the Mughal Emperor Aurangzeb to convert him to Islam. When the emperor failed to do so, he had the Guru executed.
- The last of the human Gurus was Gobind Singh, who established the Khalsa, a brotherhood of Sikhs established to protect their people from persecution.
- Male Sikhs who join the Khalsa take the surname Singh ('lion') and female Khalsa Sikhs take the surname Kaur ('princess').
- Before he died, Gobind Singh said that the collection of Sikh holy scriptures, the Guru Granth Sahib, would be the eleventh and final – eternal – Guru.
- The Guru Granth Sahib is a collection of scriptures collected over 150 years that is highly revered by Sikhs, who look to it for guidance and leadership.
- It is written in a language called Gurmukhi and there are strict rules about how copies of it can be printed, transported and treated.
- The book is used during Sikh worship services and during special ceremonies. Sometimes readers called granthi will read the whole text from start to finish, which takes about 48 hours.
- The Mool Mantra is a text that describes Sikh beliefs about God, including that he is the creator, immortal, without fear or hate, and beyond birth and death.

Key people

- Akbar** A Muslim Mughal emperor and ruler who was very impressed by the langar and had a good relationship with the Sikhs
- Aurangzeb** A Mughal emperor during Tegh Bahadur's time as Guru; he had Guru Tegh Bahadur killed
- Guru Nanak (1469–1539)** The founder and first Guru of Sikhism
- Guru Angad (1539–52)** A devoted follower of Nanak who succeeded him as second Guru
- Guru Amar Das (1552–74)** The third Guru
- Guru Ram Das (1574–81)** The fourth Guru
- Guru Arjan (1581–1606)** The fifth Guru, who created the Adi Granth (first Sikh scriptures) and founded the Golden Temple in Amritsar; he was martyred by the Mughal emperor

- Guru Hargobind (1606–44)** The sixth Guru; a key military leader
- Guru Har Rai (1644–61)** The seventh Guru
- Guru Har Krishan (1661–64)** The eighth Guru, who died at the age of eight
- Guru Tegh Bahadur (1664–1675)** The ninth Guru; executed by the Mughal emperor
- Guru Gobind Singh (1675–1708)** The tenth and final human Guru, who established the Khalsa
- Jahangir** A son of Mughal Emperor Akbar who had Guru Arjan killed
- Lalo** A hard-working carpenter of low caste who became one of the first Sikhs
- Malik Bhago** A rich and corrupt man who was angered by Guru Nanak eating with Lalo

KEYWORD REVISION

Copy some of the definitions of the **RE** key vocabulary into the boxes below from your knowledge sheet and then see if you can add in the keywords without looking back at your work. Alternatively, you can do it the other way round and see if you can add in the correct definitions without looking.

Keyword:	Definition:

**Fancy some additional Class Charts points? Impress your teachers with any of these BHAmazing pieces of vocabulary, and they will award you extra CC points.
Challenge: Can you use them in any sentences and show a member of the Senior Leadership Team?**

Word List 1	Word List 2	Word List 3	Word List 4	Word List 5	Word List 6	Word List 7
Myriad (adjective) – many Assert (verb) – state a fact confidently or forcefully Egregious (adjective) - outstandingly bad Erroneous (adjective)- wrong Engender (verb) – to cause Employ (verb) – to make use of Salient (adjective) – most noticeable and important Advantageous (adjective) – providing an advantage / beneficial Galvanize (verb) – to shock or excite someone into action Substantiate (verb) – to provide evidence	Caustic (adjective) – mean / harsh Elucidate (verb) – to make clear Esoteric (adjective) – likely to only be understood by a small number or people / obscure Tenuous (adjective) – weak or fragile Perfunctory (adjective) – carried out with minimal effort Moral (noun) – a lesson Autonomy (noun) – independence Assertive (adjective) – confidence Conceited (adjective) – excessively proud / vain Superior (adjective) – better than	Tension (noun) – feeling of anxiety or nervousness Oblivious (adjective) – unaware Naïve (adjective) – Inexperienced / unaware Pretentious (adjective) – arrogant Pompous (adjective) – arrogant Privileged (adjective) – having an advantage over other, usually wealth Compassionate (adjective) – sympathetic Vindictive (adjective) – spiteful, cruel Duplicitous (adjective) – having two sides Narcissistic (adjective) – self-obsessed	Omniscient (adjective) – all-knowing Gullible (adjective) – believes things easily Supercilious (adjective) – arrogant Tyrannical (adjective) – a cruel dictator Brazen (adjective) – bold, shameless Elusive (adjective) – mysterious Chauvinistic (adjective) – has an attitude of superiority to opposite sex Materialistic (adjective) – cares for objects and commodities Prophetic (adjective) – able to accurately predict Impulsive (adjective) – rash / careless	Sentimental (adjective) – emotional Bawdy (adjective) – rude or vulgar Hypermasculine (adjective) – overly masculine Atavistic (adjective) – has characteristics of an earlier generation Troglodytic (adjective) – like a caveman Apathetic (adjective) – indifferent / lazy Segregated (adjective) – separated Misogynistic (adjective) – hateful towards women Choleric (adjective) – quick-tempered, angry Secular (adjective) – not religious	Oppressed (adjective) – subjected to cruel mistreatment Subservient (adjective) – obedient / submissive Exploit (verb) – to use someone for your own good Epiphany (noun) – a sudden realization Façade (noun) – a front (to ‘wear a façade’ means you wear a metaphorical mask, covering your true emotions or character) Microcosm (noun) – a smaller community which represents a larger one Aloof (adjective) – stand-offish Degenerate (adjective) – disgusting Depraved (adjective) – immoral / evil Feral (adjective) – wild	Metamorphosis (noun) – a change / transformation Abhorrent (adjective) – repulsive Abhor (verb) – to hate Fate (adjective) – destiny Integral (adjective) – important Demise (noun) – a person’s downfall or death Ridicule (verb) – to make fun of Deride (verb) – to mock Contempt (noun) – hate Hysterical (adjective) – uncontrolled emotion

My BHAmazing vocabulary, written in sentences:

1.

2.

3.

4.

5.

6.

7.