Year 9 Knowledge Organiser

Summer Term 2020/21

Name: **Form:**

West Norfolk Academies Trust

Contents Page

Instructions for using your Knowledge Organiser

Every school day, you should study 1 to 2 subjects from your knowledge organiser for homework lasting at least 1 hour in total.

On pages 6 and 7 there is space for you to record the subjects you have studied to make sure you are giving equal time to all of them. Your parent should sign off your homework each evening on these pages.

Your parent should also sign your reading log on pages 8 and 9.

You can use the note pages in this booklet to help with your studies.

You need to bring your Knowledge Organiser to school every day. It will be checked regularly during form time.

You will be regularly tested on knowledge contained in this booklet in your lessons and through quizzes on Show My Homework.

How to self-test with your Knowledge Organiser

You can use your Knowledge Organiser in a number of different ways but you should not just copy from the organiser. Use the following tips and guidance to help you get the most out of learning and revising your subject knowledge.

These are some possible tasks you could try:

- Ask someone to write questions for you
- Write your own challenging questions, leave them overnight and try answering them the next day
- Create mind maps
- Create flash cards
- Put the key words into new sentences
- Look, write, cover and check
- Write a mnemonic

- Use the 'clock' template to divide the information into smaller sections
- Give yourself a spelling test
- Give yourself a definition test
- Draw images and annotate/label them with extra information
- Do further research on the topic
- Create fact files
- Create flowcharts
- Draw diagrams

The Importance of Self-testing

The Knowledge Organisers are designed to help you learn a wide range of knowledge which will, in turn, mean you are more prepared for your lessons and make even better progress.

To get the most out of your Knowledge Organiser you should be learning sections and then self-testing.

Look, Cover, Write, Check, Correct

This should be familiar to you from primary school.

First Look, then cover this colum	Next try to answer/give definition/spell	Now Check to see if you were right	Finally Correct those you got wrong
Look	**Write**	**Check**	**Correct**
Noun	Person place or thing		
Belief	Something you believe	X	Accept true without proof

Questions/Answers, Answers/Questions

Ask a parent, carer, study partner to write you questions (or answers) and then you write the answer (or possible question that would respond to that answer).
You can also write your own questions but if you do this leave it until the next day before you answer them to see what you can remember after a break.

Always remember to check and correct

Flashcards

These are a very good and simple self-testing tool.
To make your own, take some card and cut into rectangles roughly 10cm x 6cm.
Write the key word on one side and the definition on the other.
Then go through your cards looking at one side and seeing if you can remember the keyword/definition on the other side.

Mind Maps

Mind mapping is a process that involves a distinct combination of imagery, colour and visual-spatial arrangement. The technique maps out your thoughts using keywords that trigger associations in the brain to spark further ideas.

Once you have made your map, cover it and test yourself on different strands, e.g. how much of the 'Lines' strand can you recall.
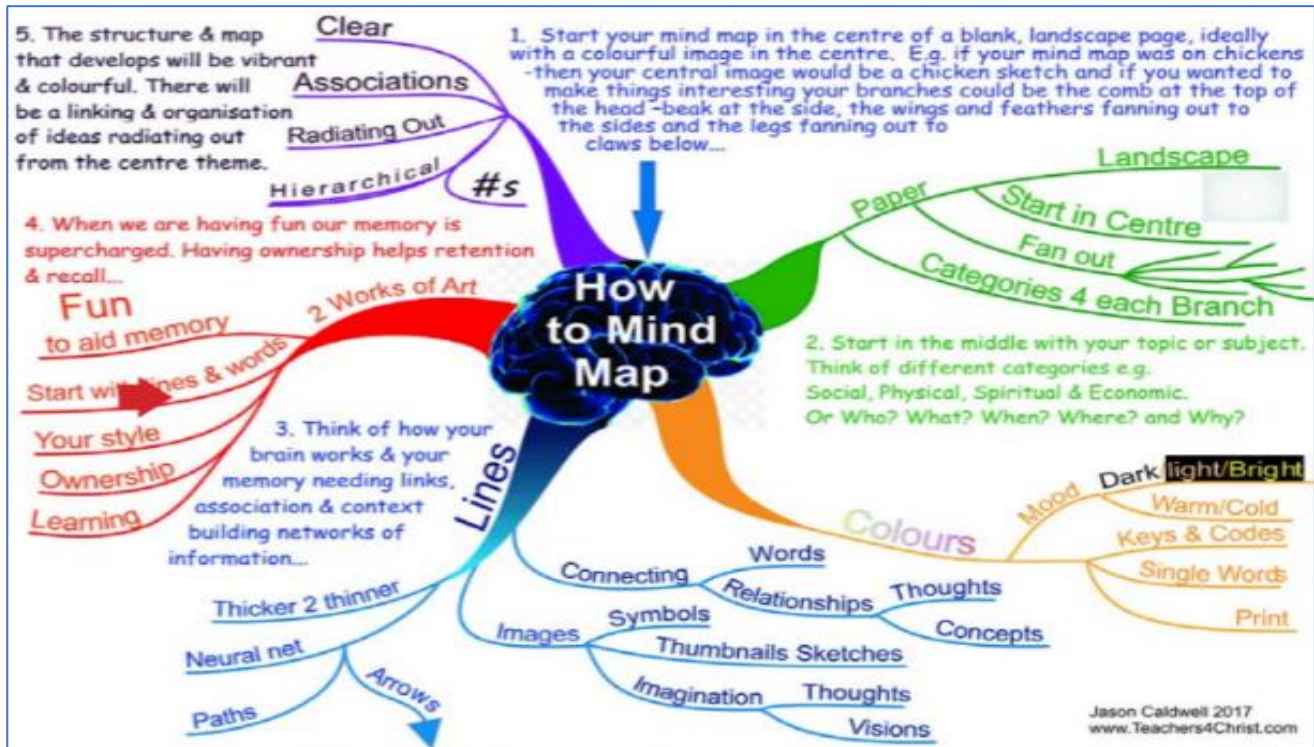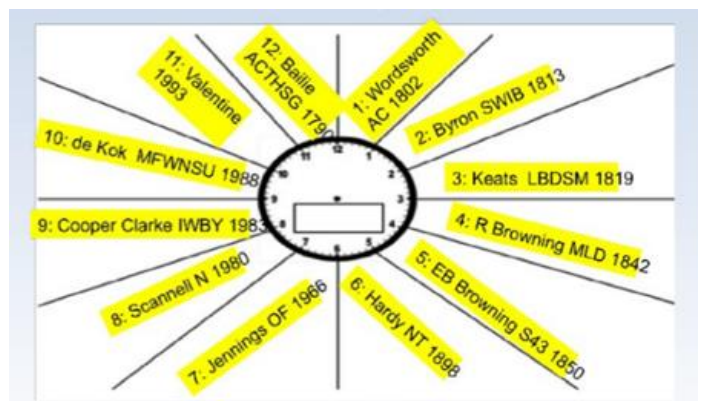

Clock Learning

For this technique, draw a basic clock.
Take a subject or topic and break it down into 12 sub-categories.
Make notes in each segment of the clock. Revise each part for 5 minutes.
Now the clock over and try and write out as much information as you can from one of the segments.

Clocks can also be used to help to visualise a timeline

Homework log and parental check

Week 1	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 2	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 3	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 4	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 5	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 6	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 7	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

Homework log and parental check

Week 8	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 9	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 10	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 11	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 12	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 13	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Week 14	Subject 1	Subject 2	Signed
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

Reading log

Use this reading log to record the books you read along with how long you have spent reading.

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Book(s) read (title and author)	Total time spent reading	Parent/Guardian /Staff signature
1										
2										
3										
4										
5										
6										
7										

Reading log

Use this reading log to record the books you read along with how long you have spent reading.

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Book(s) read (title and author)	Total time spent reading	Parent/Guardian /Staff signature
8										
9										
10										
11										
12										
13										
14										

Art – Independent Project:

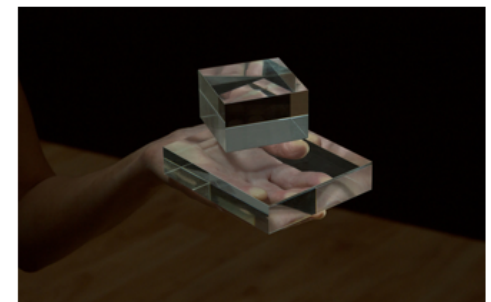| Art Specific Language and Terms			
Development of ideas	Ideas are the underlying theme (concept) behind your work and normally come from a given starting point. Your idea helps you to create a journey for your project that changes gradually as your project progresses. The idea helps you focus your work and give direction.	**Presentation**	Carefully considering the most appropriate and creative ways to present your work and research. Backgrounds should compliment the work to be placed on them.
Brainstorm	Taking a starting point and writing as many words/ideas that link to that theme as possible. This helps to generate a unique theme and idea for your own work.	**Annotation**	Evaluative writing that supports your own work. This annotation shows understanding of the media techniques used, the success of the work produced and explains the idea behind the work.
Artist Reference	Making relevant contextual links to Art, Artists or Cultures whose work may inspire or influence your own ideas and imagery.	**Quality of imagery**	Quality imagery refers to not just how clear the image is but how creative the image is and how relevant it is to your work.
Media Experimentation	Using a variety of different Art skills and techniques throughout your work. This enables you to demonstrate your ability to decide which art technique is most appropriate for your chosen work and ideas.	**Development of own work**	Your own work is Art that you develop through experimentation and not work copied from others and is one of the most important elements at GCSE.
Secondary Source Imagery	Using the work or imagery of others to help inspire and influence your own ideas and work.	**Primary Source Imagery**	Working from real life or photographic imagery taken by yourself.

Concepts are defined as abstract ideas or general notions that occur in the mind, in speech, or in thought. They are understood to be the fundamental building blocks of thoughts and beliefs. They play an important role in all aspects of art.

Ian Francis 'Revolving Cage'
Mixed media on birch panel 2016

Marcelo Jácome 'Planos-pipas'
Tissue paper, bamboo, fiberglass and cotton thread 2013

Adrian Samson 'Beggar'
Metallic C-Print 2015

Art – Independent Project – Painting:

Art Specific Language and Terms			
Scaling Up	A technique to help enlarge an image accurately. A grid is drawn over the image to be copied and also onto the paper (both to scale). The image is then copied in sections.	**Colour Blending**	The change from one colour to another gradually. The colour change should appear smooth and is achieved when the two colours are mixed and layered smoothly without an obvious step or line.
Observation	Looking closely at the original image/source so that all detail and colour changes are seen and replicated.	**Layering**	Applying the colour in stages, starting with lighter base colours and adding darker tones later over the top. Often there can be multiple layers to a painting.

Acrylic Paint: Acrylic paint is a fast-drying paint made of pigment suspended in acrylic polymer emulsion. It is water-based and a fast drying paint which is easy to mix and blend. The paint can be thinned with water.

Paintbrush choice:

Flat brushes are versatile. Their long bristles can lay smooth patches of color, make long, bold strokes or when using their edges, execute fine crisp lines. Marks made with a flat brush have a distinctive square edge.

Round brushes come in pointed and blunt tips. Both can be used to create a linear mark by applying more or less pressure during the stroke; the pointed round brush is ideal for fine detail.

Contemporary Painters:
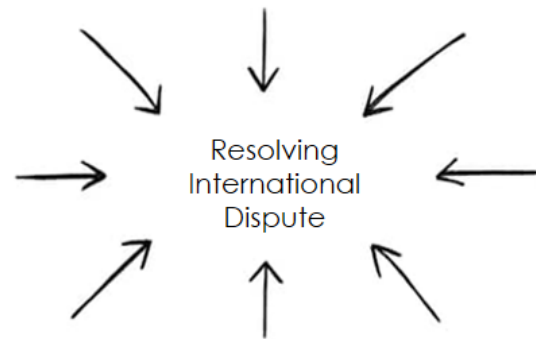

Chloe Early - Eggwhite

Ant Carver

Takashi Murakami – Panda Gold

Y9 CITIZENSHIP KNOWLEDGE ORGANISER

Advocacy
Action taken to try and raise awareness of a cause or issue by acting as a representative.

Advocate
A person who acts on behalf of others as a representative.

Boycott
Refusing to buy goods or use a service to achieve a desired political outcome.

Unionist
A person in favour of the union between Northern Ireland and Great Britain.

Nationalist
A person who believes that Northern Ireland should be independent from Great Britain.

The ability to influence through the power of your culture, political and foreign policy values.

Hard power vs. Soft power

The ability to use military or economic power to achieve aims.

Resolving International Dispute

Mediation
A process of involving outsiders in a dialogue to try to resolve a dispute between two parties.

Sanctions
Measures taken by a country against others to achieve a change in policy or action.

Humanitarian Aid
Non-military aid given to countries and people in need: for example, food, shelter or medical help.

Use of force
Military action using the armed forces. Usually involves working with others in alliances, for example UN or NATO.

Boycott
Refusing to buy goods or use a service to achieve a desired political outcome.

International Criminal Court (ICC)

This is a permanent, international criminal court. The ICC was established in 2002 to investigate, prosecute and bring to trial individuals accused of committing crimes towards the international community. This could be genocide, crimes against humanity and war crimes.

Making connections
How can you link different topics together?

Human Rights + equality + legislation
UK + Commonwealth
Humanitarian aid + human rights
International community + human rights + United Nations
Boycott + advocate

HUMAN RIGHTS

Human rights are the basic rights and freedoms that belong to every person in the world, from birth until death.

Here are some examples...

7 Equality Before the Law
You have the right to be treated by the law in the same way as everyone else

11 Innocent until Proven Guilty
You have the right to be considered innocent until proven guilty.

19 Freedom of Opinion
You have the right to freedom of opinion and expression.

26 Education
You have the right to education

Did you know?

These Human Rights Articles have been written into UK law – they form the Human Rights Act 1998.

Did you know?

There are 30 Human Rights articles in total. They were established in 1948 by the United Nations.

Y9 CITIZENSHIP KNOWLEDGE ORGANISER

The UK and the Wider World

World Trade Organisation (WTO)	Only organisation dealing with global trading rules between nations.
European Union (EU)	European organisation who seek to encourage trade, free movement and cooperation between its 27 European member states.
North Atlantic Treaty Organisation (NATO)	Intergovernmental military defence alliance. The organisation provides a system of defence, if a member country is attacked, the other members come to its defence.
United Nations (UN)	193 members belong to this international organisation. It seeks to maintain internatonal peace and security, develop friendly relations between nations, sovle international problems and promoting respect for human rights.
Commonwealth	Represents 30% of the the world's population, all members must agree the values set out in its own Charter. It's a voluntary organisation and its charter highlights issues related to democracy, human rights and law. The head of this organisation is the Queen.
Council of Europe	Intergovernmental human rights organisation, who aim to promote democracy, rule of law and human rights to their 47 member states.

Relevant Numbers!

1945
This it the year United Nations was formed.

2016
The year the UK voted to leave the European Union.

193
This is how many countries belong to United Nations.

30%
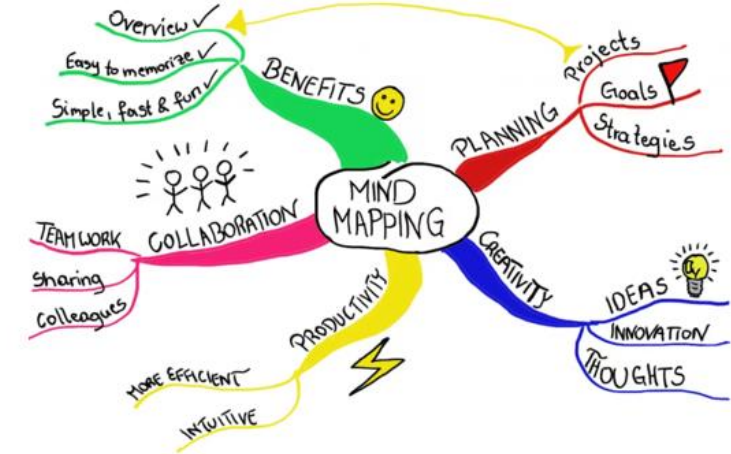This is the proportion of the world population who live in a Commonwealth country.

30
The number of Human Rights all human beings are entitled to.

Computer Science – Integrated Project Knowledge Organiser

9.5 and 9.6: Integrated Project covering: Mind maps, Gantt charts, system life cycles, *Spreadsheets - Financial Models*

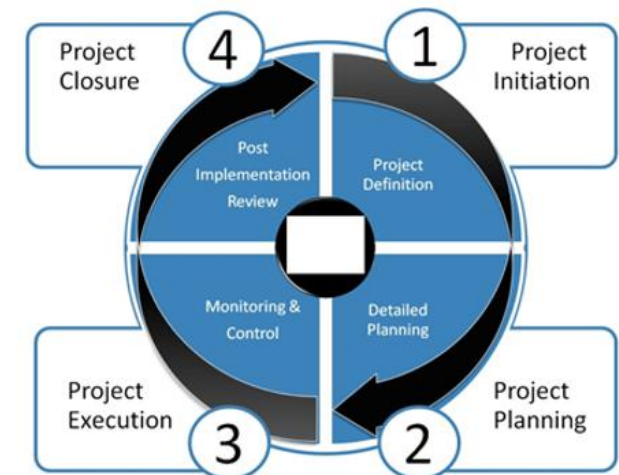| Keyword	Definition
Mind Map	A mind map is a graphical way to represent ideas and concepts. It is a visual thinking tool that helps structuring information, helping you to better analyse, recall and generate new ideas.

Gantt Chart

Keyword	Definition
Gantt Chart	A Gantt chart is a visual view of tasks scheduled over time. Gantt charts are used for planning projects of all sizes and they are a useful way of showing what work is scheduled to be done on a specific day.

Keyword	Definition
Project Life Cycle	The project life cycle is a series of stages that are worked through during the development of a new information system.

Computer Science – Integrated Project Knowledge Organiser

9.5 and 9.6: Integrated Project covering: Mind maps, Gantt charts, system life cycles, *Spreadsheets - Financial Models*

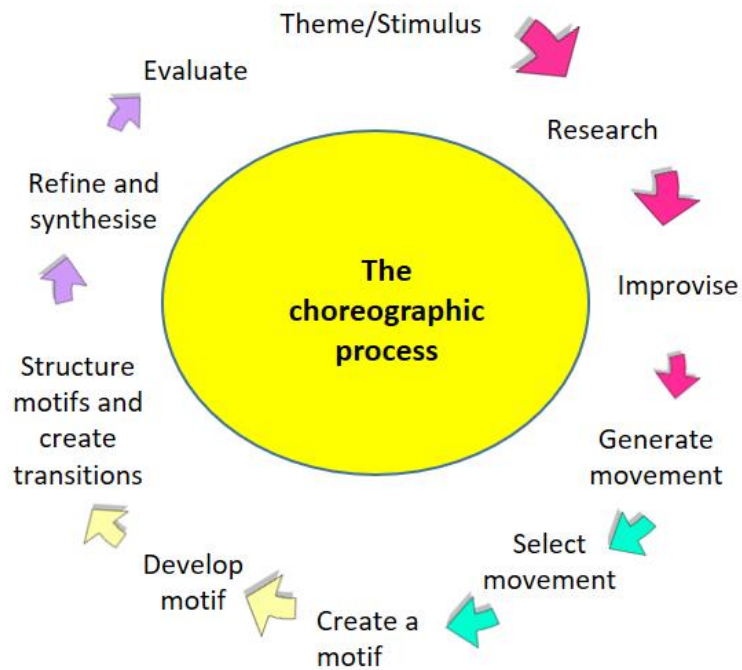| Keywords	Definition
Project	A project is a series of tasks that need to be completed in order to reach a specific outcome.
Data Analysis	Data analysis is a method in which data is collected and organised so that one can derive helpful information
Data Collection	Data collection is a means for gathering facts, statistics and details from different sources.
Target Audience	A particular group at which a product such as a film or advertisement is aimed
Financial Models	A financial model is simply a tool that's built in Excel to forecast a business' financial performance into the future
Planning	Planning is the process of thinking about the activities required to achieve a desired goal. It is the first and foremost activity to achieve desired results.
Implementation	Implementation is the process of putting a decision or plan into effect; execution.
Execution	Execution is the carrying out of a plan, order, or course of action.
Design	Design is the process of imagining and planning the creation of a systems. It is about creating solutions for people.

Analysis

Project

Integrated

Target Audience

Data Collection

Year 9 Dance Knowledge Organiser: Choreography Part 2

The choreographic process

- Theme/Stimulus
- Research
- Improvise
- Generate movement
- Select movement
- Create a motif
- Develop motif
- Structure motifs and create transitions
- Refine and synthesise
- Evaluate

A Motif
A movement phrase encapsulating an idea that is repeated and developed throughout the dance.

EXAMPLE

A dancer is kneeling on the floor, centre stage, facing front, with both arms down by the side of the body, looking straight ahead. The right arm rises forwards, remaining straight, to shoulder height, creating a horizontal line. The right arm continues to travel upwards, remaining straight, until it is in a vertical position with the elbow next to the ear. The hand is open with the palm facing forwards and the fingers reaching up to the sky. The dynamic is steady and slow.

Choreographic Devices

Motif and development - Ways in which a movement phrase can be varied.
Repetition - Performing the same action or phrase again.
Contrast - Movements or shapes that have nothing in common.
Highlights - Important moments of a dance.
Climax - The most significant moment of the dance.
Manipulation of number - How the number of dancers in a group is used.
Unison - Two or more dancers performing the same movement at the same time.
Canon - When the same movements overlap in time.
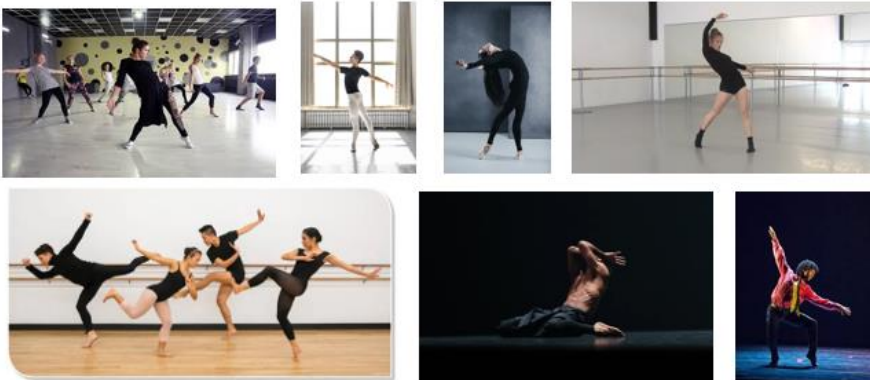
Motif and Development
Ways in which a movement phrase can be varied

Motifs can be varied by using movement components. For example:
Actions: Fragmentation – Re-ordering parts of the motif, Retrograde –Reverse movements, Addition – to add in a movement.
Space: Change the pathways, levels, movement size or directions. E.g. a small jump into a large jump.
Dynamics: change the dynamics. E.g.. From soft to sharp
Relationships: change one relationship to another. E.g. leading and following into mirroring

If this is your motif, how could you develop it in three different ways?

A dancer is kneeling on the floor, centre stage, facing front, with both arms down by the side of the body, looking straight ahead. The right arm rises forwards, remaining straight, to shoulder height, creating a horizontal line. The right arm continues to travel upwards, remaining straight, until it is in a vertical position with the elbow next to the ear. The hand is open with the palm facing forwards and the fingers reaching up to the sky. The dynamic is steady and slow.

State the choreographic device
Clearly apply it
Make it clear how the phrase is now developed

EXAMPLE

I would use change of dynamics. For example instead of rising the arm upwards steady and slow the dancer would perform it quickly and sharply.

I would use change of level so instead of the dancer starting on the floor, they would start by standing up.

I would use retrograde so that instead of the right arm starting down by the side the right arm would start above the dancer's head in a vertical position next to the ear and then lower down straight and horizontally until it ends by the dancer's side.

Communication of Intent
The aim of the dance: what the choreographer aims to communicate

Mood	Idea	Style/style fusion
Meaning	Theme	

BINARY FORM

TERNARY FORM

RONDO FORM
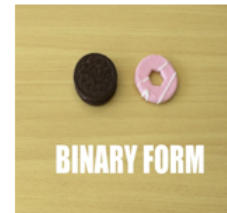
Structure
The ways in which a dance is made, built, ordered or organised.

Binary	AB
Ternary	ABA
Narrative	ABC
Episodic	A B C D
Arch	ABCBA
Rondo	ABACADA

Drama – Theatre Creation

You **MUST** make sure all aspects of your performance fit your chosen practitioner or genre….

Key to Characterisation

Voice	You need make sure that you: • Speak clearly • Emphasise words in the right place • Use pauses • Think about the pace you speak • Can be heard
Movement	How you move can define a character. Think about **why** and **how** you move on the stage. What is your purpose?
Body Language and Facial Expressions	These need to be clear and strong- is your body language and facial expressions telling the correct story? Do they match?
Proxemics	Are you standing at the right distance away from another character?

Theatre Creation Vocabulary

Vocabulary	Explanation
Stimuli	The starting point, idea or inspiration for your devised drama. It is the thing you base your drama around.
Dramatic devices	Dramatic devices are rehearsal techniques that help you to create your piece of theatre and work.
Plot	Plot refers to the storyline of the text. The plot is the sequence of events in the story or drama.
Climax	The climax is the plays point of highest tension or it is the time when the action starts during which the solution is given. Plays should build to a climax or anti-climax.
Practitioner	A theatre practitioner is someone who creates theatrical performances and/or produces an idea or theory that informs his or her practical work.
Genre	A type of theatre – for example, physical, mask, T.I.E…

Par Can – Light for large areas as it literally floods the stage

Profile Spotlight – Definite sharp edged beam, can also be used for gobos

Fresnel Spotlight – Soft edged beam, good for smaller areas

Strobe Light – Quick successive flashing light, making action appear jumpy

Birdie – A tiny lantern good for up lighting facial features and distorting them; creating an eerie atmosphere

Moving Head Light – A light which moves across the stage, changes colour and can project images using gobos

Genres

- Gothic
- Surrealism
- Physical theatre
- Pantomime
- Naturalism
- Absurdism
- Comedy
- Melodrama
- Theatre in education
- Musical

Practitioners

- Commedia Dell'Arte
- Greek theatre
- Stanislavski
- Kneehigh
- Brecht
- Gecko
- Artaud
- Frantic assembly

Websites / Literature / Media

https://www.youtube.com/watch?v=2FWAUncAvv4
The Frantic Assembly Book of Devising Theatre By Scott Graham
A Beginner's Guide to Devising Theatre By Jess Thorpe & Tashi Gore
BBC Bite Size
https://www.theguardian.com/culture-professionals-network/2014/dec/16/devised-theatre-ten-tips-collaboration

Drama – Analysing Theatre

When analysing theatre you will be asked to look at in one of two ways
Either - a) Practically- What the actor is doing Movement/Voice/Gesture…
Or - b) Performance support- Set/ Props/ Sound/ Lighting/ Costume…

Evaluative Vocabulary

Conveys – gets across a message / idea / theory
Demonstrates – Provides a clear explanation / example
Emphasises – draws attention to something
Evidences – provides evidence/proof for an argument / theory
Evokes – brings about a strong feeling or idea
Foreshadows – hints at subsequent events / themes
Highlights – draws clear attention by making it stand out
Illustrates – creates a distinct image
Implies – suggests something beyond the obvious
Indicates – acts as a clear pointer or a signpost
Portrays – Shows or represents something / someone in a certain way
Presents – Introduces an idea
Projects – takes an idea and makes it more distinct
Represents – takes an idea and puts it forward in a different light
Reveals – makes a meaning / interpretation clear that was previously unclear
Signifies – uses a word or a sign to make the meaning clear
Symbolises – takes a visual image and uses it for a deeper meaning

Key Vocabulary	Explanations
Adaptation	Alter a script to make it suitable for the stage, TV or film. It may include changing the use of language or setting
Characterisation	Creating a character, through the use of voice and movement
Tone	The thought or feeling behind spoken words
Pitch	The note used when speaking
Physical theatre	Physical theatre is communicating a story or meaning through movement
Prop	Items held or used by actors onstage
Analyse	Breaking things down in detail in order to understand them (cause and effect)
Evaluate	Determining if something is effective or not

Remember to use drama vocabulary

Voice	Pitch Tone Pace Tempo
Movement	Pace Body language Intensity
Gesture	Facial expression Body language
Climax	Pace Tempo
Sound	Diegetic Non-diegetic Symbolism
Lighting	Gobo Gels Intensity Symbolism
Costume	Garment Colour Period Symbolism

Studying English is about thinking, noticing, exploring, creating...

Year 9, Term 3

Representation

- When we talk about representation, we are thinking about how characters (including non-fiction 'voices' and narrators) can be used as examples of larger groups within society. Sometimes, characters are quite stereotypical, like presenting a bully as male, large and physically strong. Sometimes, characters go against type, like characterising a bully as female, physically small and wearing glasses.

- Representations can be positive, negative or neutral. They can be realistic or unrealistic.

- **These representations are mediated by the writer and might not be realistic or fair.**

- Writers sometimes construct their characters very consciously because they want to represent the experiences of people that belong to a certain group, say, South Asian children growing up in London for example.

- Sometimes representations are subconscious and therefore not planned.

- How a writer represents a certain character can reveal a writer's hidden attitudes towards groups in society. For example, it might reveal misogyny, racism or another prejudice.

- Sometimes groups aren't really represented in literature at all. This is (partly) what we mean when we say that they don't 'have a voice'.

Explaining representation:

The writer represents working class people as... by...
The writer's portrayal of women is... because...
The writer's characterisation of x reflects commonly held attitudes about... during x period of history.

We might ask ourselves:

How are the following social groups represented?

- those with disabilities (visible and invisible)
- working classes (male and female)
- different racial groups
- LGBTQ+
- people of different age groups
- women/men
- immigrants
- Gypsy, Roma and Traveller communities
- different religious groups

A word on stereotypes and biases…
We all create stereotypes – our brains are just not clever enough to handle the complexity of understanding every human as a unique individual, even though that's what we are. So, we categorise things, including people. That doesn't make us bad people UNLESS we take those oversimplifications seriously and start to discriminate against people based on them.

The representation of race in *Othello*
In *Othello*, Iago is characterised as someone who plays on commonly held racist attitudes in Venetian culture to victimise Othello. We might be tempted to think of Shakespeare himself as racist, but it is more likely that he's reflecting a truth about life during the period. It is a critique of racist attitudes. He does not support them. When Othello says, at the end of the play, 'speak of me as I am' there is a clear recognition from Shakespeare that racial stereotypes were not really true and shouldn't be trusted.

Topic 5: International Cuisine

British people are now more adventurous with their food choice and will regularly eat food originating in other countries. Some examples of these are:

Italian Cuisine – family and food is very important to Italians – with recipes being passed down the generations through mothers and grandmothers. Italian flavours are simple and they often use seasonal local ingredients that are home-grown or purchased in markets. Traditional dishes include pasta, pizza and risotto. Bread is freshly baked and a rainbow of fresh vegetables and salads are regularly served as accompaniments. Healthy olive oil is used instead of animal fats. Desserts include ice-cream and tiramisu (Italian trifle). Italians take a huge amount of pleasure in food and enjoy social or family occasions where food can be shared.

Chinese Cuisine – Chinese food is often quick to make, with an emphasis on colour, flavour and texture. Much of the food is stir-fried in a wok or steamed in a bamboo steamer – both healthy ways of cooking. In a very traditional Chinese kitchen there is no oven. Traditional dishes include spring rolls, crispy duck, soups and broths, sweet and sour noodles and fried rice. Chinese food often uses aromatic spices such as ginger to flavour food. At meal times, the Chinese family will have four or five dishes at the same time and each person will have a small bowl with rice in it. Food is eaten with chopsticks. The traditional drink with a meal is green tea which is served without milk. The Chinese present their food beautifully with carved vegetables.

Indian Food – entertaining in the home is very popular in India with all the dishes placed on the table at once and shared. Many spices and herbs are blended or ground together to make Indian food – although most dishes are spicy and mild rather than overly hot. Traditional dishes include tandoori meat and fish (cooked in a clay oven), curries, samosas, bhajis and dahls (made with lentils). Main meals are served with traditional breads (naan, chapatti, poppadoms) or basmati rice. Desserts are not often served every day but are used for special occasions, for example sweets served for the festival of Diwali.

Topic 6: Consumer Awareness

Consumers can be defined as "a person who purchases goods and services for personal use". People are consumers on a daily basis. On your way to school you may use the bus and then buy a snack at break time – you are a consumer.

Food is always in the news and sometimes consumers are confused about what to buy and eat. To be an effective consumer you need to know your rights and responsibilities and know how to get advice on issues if you are not satisfied with the food you buy.

It is important that consumers know how to manage their resources effectively when choosing, shopping for, preparing and storing food.

Consumers have a wide range of options when shopping for food. There are advantages and disadvantages for them all, it is therefore important for consumers to decide which is the most suitable for them, for example going to a big supermarket or shopping in a corner shop.

To make good use of time, energy, and money when choosing food consider the following: Meal planning – thinking ahead will reduce the number and amount of time needed for shopping; Ingredients – try and choose ingredients that will save time and money; Seasonality – choose seasonal and local foods; Value for money – compare the cost of fresh and pre-prepared ingredients.

Consumers should avoid wasting food. Every year in the UK, seven to ten million tons of food are wasted. It is thought that approximately 50% of the food wasted is still edible. The cost of food waste is significant – estimates show that it costs an average family £700 per year. Using leftovers can save money and is good for the environment.

Food labelling is important to help us to decide which food buy, how to store and cook food correctly and to be aware of the nutritional content of food. Some food labelling is required by law. 'Use by' and 'best before' dates are there for food safety reasons and to help use up food before it spoils. Labels on food must contain precise and accurate information about the nutrients in food. Fat, saturated fat, salt and sugar are labelled as either green, amber or red. When deciding what to eat, look at the label and try to choose foods that have more green and amber and less red.

Each serving (150g) contains

Energy 1046kJ 250kcal	Fat 3.0g LOW	Saturates 1.3g LOW	Sugars 34g HIGH	Salt 0.9g MED
13%	4%	7%	38%	15%

of an adult's reference intake
Typical values (as sold) per 100g: 697kJ/ 167kcal

Y9 French Knowledge Organiser– Summer Term 1

Quel pays voudrais-tu visiter?
What country would you like to visit?

French	English
Je voudrais visiter…	I would like to visit …
la Belgique.	Belgium.
le Laos.	Laos.
le Canada.	Canada.
le Vietnam.	Vietnam.
le Gabon.	Gabon.
le Sénégal.	Senegal.
la Martinique.	Martinique.
la Tunisie.	Tunisia.
la Suisse.	Switzerland.
les Seychelles.	the Seychelles.
car il y a …	because there is/are …
un festival de jazz.	a jazz festival.
une mosquée.	a mosque.
des plages.	beaches.
des éléphants.	elephants.
Je voudrais aller…	I would like to go …
au lac de Genève.	to lake Geneva.
au parc national.	to the national park.
à la plage.	to the beach.
aux temples bouddhistes.	to the Buddhist temples.
Je voudrais manger …	I would like to eat …
du poulet fumé.	(some) smoked chicken.
du chocolat	(some) chocolate.
de la soupe.	(some) soup.
des fruits de mer.	(some) seafood.
des moules-frites.	mussels and chips.
J'adore / J'aime …	I love / I like …
le surf.	surfing.
la musique.	music.
l'histoire.	history.
les animaux.	animals.
les frites.	chips.

On va voir des choses extraordinaires!
We will see lots of amazing things!

French	English
Le Mont-Saint-Michel est ….	Mont-Saint-Michel is…
La dune du Pilat est …	The Dune of Pilat is…
grand/grande	big
beau/belle	beautiful
vieux/vieille	old
impressionant/impressionante	impressive
intéressant/intéressante	interesting
fabuleux/fabuleuse	fabulous
mystérieux/mystérieuse	mysterious
célèbre	famous
historique	historical
un château	a castle
un monument	a monument
un pont	a bridge
une montagne	a mountain
une mosquée	a mosque
une ville	a town

Reserver de excursions   Booking trips and excursions

French	English
Est-ce que tu aimes …?	Do you like …?
J'adore…	I love…
J'aime…	I like…
Je n'aime pas…	I don't like…
Je déteste…	I hate…
manger au resto	eating out.
visiter des musées	visiting museums.
visiter des monuments historiques.	visiting historical monuments.
aller à la piscine	going to the pool.
aller à la plage	going to the beach.
faire du surf.	going surfing.
faire du vélo.	going cycling.
faire des promenades	going for walks.
Qu'est-ce qu'on peut faire ici?	What can you do here?
On peut …	You can …
Je veux …	I want to …
Je ne veux pas …	I don't want to …
jouer…	play…
au minigolf.	mini-golf.
au tennis.	tennis.
au volleyball.	volleyball.
visiter …	visit…
le château.	the castle.
des maisons historiques	historic houses.
faire du sport	do sport.
faire un pique-nique	have a picnic.
porter un costume medieval	wear a medieval costume.

Visite à un pays francophone!
Visit a French-speaking country!

French	English
Le pays est sur quel continent?	Which continent is the country in?
en Afrique	in Africa
en Europe	in Europe
en Océanie	in Australasia
Il est comment, le paysage?	What is the landscape like?
Il y a …	There are…
des forêts (tropicales).	(tropical) forests.
des montagnes.	mountains.
des plages.	beaches.
des rivières.	rivers.
des volcans.	volcanoes.
Qu'est-ce qu'on peut visiter ici?	What can you visit here?
On peut visiter…	You can visit…
Je veux visiter…	I want to visit…
le circuit de formule 1	the Formula 1 track.
le parc nationale.	the national park.
le port.	the port.
l'église.	the church.
Monaco est plus célèbre que le Laos.	Monaco is more famous than Laos.

On va jouer au foot!   *We are going to play football!*

Qu'est-ce que tu vas faire?	*What are you going to do?*
Je vais…	*I am going…*
manger beaucoup de pizza.	*to eat lots of pizza.*
passer du temps avec ma famille.	
	to spend time with my family.
poster des photos.	*to post photos.*
jouer au foot.	*to play football.*
faire les magasins.	*to go shopping.*
faire du sport.	*to do sport.*
aller à la plage.	*to go to the beach.*
lire des romans.	*to read novels.*
regarder des vidéos.	*to watch videos.*
dormir.	*to sleep.*

à l'avenir	*in the future*
un jour	*one day*
l'année prochaine	*next year*

Quel est ton sport préféré?   *What is your favourite sport?*

Mon sport préféré, c'est …	*My favourite sport is …*
Ma passion, c'est …	*My passion is …*
le cyclisme.	*cycling.*
le ping-pong.	*table tennis.*
le rugby.	*rugby.*
le ski acrobatique.	*acrobatic skiing.*

Qu'est-ce que tu vas faire un jour?
   What are you going to do one day?

Je vais habiter …	*I am going to live …*
en Angleterre.	*in England.*
en Australie.	*in Australia.*
en Belgique.	*in Belgium.*
au Canada.	*in Canada.*

Je vais …	*I am going…*
gagner une competition importante	
	to win an important competition.
represanter mon pays.	*to represent my country.*
faire une formation.	*to do a training course.*
être joueur / joueuse professionel(le)	
	to be a professional player.

On a fait le tour du monde!   *We did a world tour!*

Comment est-ce que tu as fait le tour du monde?	
	How did you do the world tour?
J'ai fait le tour du monde …	*I did the world tour …*
en bus / en train.	*by bus / by train.*
à vélo / à pied.	*by bike / by foot.*
en avion.	*by plane.*
Je n'ai pas voyagé en / à …	*I did not travel by / on …*
Où est-ce que tu es allé(e)?	*Where did you go?*
Je suis allé(e) dans (trente) pays différents	
	I went to (thirty) different countries.
Qu'est-ce que tu as fait?	*What did you do?*

J'ai blogué	*I blogged.*
J'ai fait des vidéos.	*I made videos.*
J'ai pris beaucoup de photos.	
	I took lots of photos.
J'ai mangé dans des restos traditionnels.	
	I ate in traditional restaurants.
J'ai vu beaucoup de sites extraordinaires.	
	I saw lots of extraordinary places.
J'ai logé (dans une tente / dans un hôtel).	
	I stayed (in a tent / in a hotel).
J'ai commencé mon tour du monde en (2018).	
	I started by world tour in (2018).
J'ai travaillé dans un camp de réfugiés.	
	I worked in a refugee camp.

Il y avait …	*There was / were …*
un lac / un volcan.	*a lake / a volcano.*
une forêt tropicale.	*a tropical forest.*
des animaux sauvages.	*wild animals.*
beaucoup de problèmes.	*lots of problems.*

C'était …	*It was …*
vraiment intéressant.	*really interesting.*
absolument fabuleux.	*absolutely fabulous.*
très difficile.	*very difficult.*

On découvre des artistes francophones   *Finding out about French-speaking artists*

Mon artiste francophone s'appelle….	*My French-speaking artist is called …*
Il / Elle est né(e) le …	*He/She was born on the…*
Il / Elle habite (au Canada)	*He / She lives (in Canada)*
Il / Elle est (musicien(ne))	*He / She is (a musician).*
Il / Elle est membre du groupe …	*He / She is a member of the group …*
Son premier succès a été…	*His / Her first success was …*
la chanson …	*the song …*
le film …	*the film …*
la série …	*the series …*
Il / Elle a chanté la chanson …	*He / She sang the song …*
Il / Elle a joué dans le film …	*He / She played in the film …*
Il / Elle a joué dans la série …	*He / She played in the series …*

Il / Elle a fait l'album …	*He / She made the album …*
Il / Elle va faire une tournée en…	
	He / She in going to do a tour in …
Il / Elle va jouer dans…	*He / She is going to play in …*
Il / Elle va poster des images sur Instagram.	
	He / She is going to post pictures on Instagram.
Il / Elle va continuer son travail avec / pour …	
	He / She is going to continue his/her work with/for…
une organisation caritative	
	a charitable organisation

Year 9 Geography: Fieldwork

Key Term	Definition
Fieldwork	Answering a geographical question about people, places or environments **outside** of a classroom or laboratory.
Primary research	Data that you have collected yourself, **first-hand**, by completing surveys, interviews, or experiments.
Secondary research	Data that was collected by someone else and is therefore **second-hand**. However, it may help to guide your own investigation.
Data presentation	Using data that you have collected to create **charts** or **graphs**. This makes your data more 'visual' and easier to read.
Data analysis	Studying data to try and identify **patterns** or **trends**.
Conclusion	Using the data you collected to attempt to **answer** your original question or hypothesis from the start of your investigation.

Key ideas
Fieldwork is used by Geographers to try and answer questions about the world. To ensure their discoveries are valid and scientific, an enquiry process is followed with six separate stages. These stages are shown in the image above.
All fieldwork begins with using the questions we have about a specific environment to create a hypothesis. **A hypothesis is a statement that can be tested**. It must be clear and measurable. At the end of the enquiry, you should be able to say if your hypothesis was correct or not.
All fieldwork should end with an **evaluation**. This is when you reflect on your research and suggest how improvements could be made. You consider how you would do the fieldwork better if you had to repeat it.

Year 9 Geography: Africa

Introduction to Africa
Africa is the second largest continent in the world with 54 countries and a population of 1.1 billion.

Africa's Physical geography
The surface of Africa is mainly composed of incredibly old, stable, hard rocks. It sits on the African tectonic plate.
It has several major river basins including the Niger, Nile, Congo, Zambezi and Orange.
Africa has several biomes (a large community of plants and animals found in a major habitat) including rainforests, deserts and savannahs.
The biomes are linked to climate zones which are distinctive areas of similar rainfall and temperature each year.

The threat of desertification
The Sahara Desert in Northern Africa is the largest desert in the world. The Sahel area south of the Sahara is under threat from desertification which is the process by which land becomes drier and degraded. It is caused by below average rainfall, soil erosion by wind and rain, clearing of vegetation for firewood, over-use of land for agriculture, overgrazing of land by livestock and overpopulation.

Africa's colonial past
The 1884-1885 Berlin Conference was a meeting of 14 nations who divided Africa amongst themselves. The UK was a colonial power ruling countries such as Ghana and Kenya until the mid-1900's. Colonialism is the type of government where a geographic area is ruled by a foreign power. Imperialism is where countries impose influence through military force and economic force.

Foreign influence after African countries had become independent
In the twentieth century African countries became independent and started to govern themselves. Today former colonies influence countries through the economy and international relations. This is called neo-colonialism. Countries including China which is investing heavily in Africa are keen to exploit Africa's resources (things which we use) including bauxite, uranium, diamonds, platinum, cobalt, oil, gas and timber.

Command words that you will use in this topic: Identify, state, describe, compare, explain and assess

Human Geography of Africa
Africa has some of the poorest countries in the world. It is attempting to improve standard of living (the degree of wealth and material comfort available to a person or community) and quality of life (the standard of health, comfort, happiness and wellbeing experienced by an individual or group.) Development is the process of change and improvement both economically and socially.
Africa's population is growing rapidly in countries such as Nigeria where birth rates exceed death rates. Birth rates are high because of a lack of contraception and the fact that parents need children to help on farms and support them in old age. Death rates are falling due to improved access to health care, food, water and sanitation.

1. Mit welchen Alter darf man das?

Man darf ab … Jahren in Deutschland …	In Germany at the age of … you are allowed…
einen Teilzeitjob haben.	to have a part-time job.
die Schule verlassen.	to leave school.
Blut spenden. / heiraten.	to donate blood. / to marry.
ein Piercing haben. / ein Mofa fahren.	to have a piercing./ to ride a moped.
Ich denke, das ist richtig/falsch.	I think, that is right/wrong.
Das finde ich toll.	I find that great.
Das ist ganz in Ordnung.	That is wholly acceptable.
Das ist nicht gut.	That is not good.

At what age are you allowed to do that?

2. Was ist dir (nicht) wichtig?

What is (not) important to you?

Geld/ Mode/ Musik/ Freizeit	Money / fashion / music / free-time
Meine Familie/ Mein Handy	My family / My mobile phone
Gute Noten	Good grades
Meine Haustiere/ Meine Freunde	My pets / my friends
… ist/sind mir total/extrem/sehr/	… are totally/ extremely / very
ziemlich/nicht wichtig.	quite/ not important to me.
(Musik) ist mir wichtig, weil …	(Music) is important to me, because…
sie mich glücklich macht.	it makes me happy.
ich in einer Band spiele.	I play in a band.

3. Wo hast du bisher gewohnt?

Where have you lived until now?

Ich wohne jetzt in …	Now I live in…
Ich habe früher in … gewohnt.	I used to live in…
Mein Haus hier ist …	My house here is…
Mein Haus in … war …	My house in … was…
Ich finde die Schule hier …	I find the school here…
Die Schule in … war …	The school in… was…
Jetzt fahre ich … zur Schule.	Now I go… to school.
Ich bin früher … zur Schule gegangen.	I used to go … to school.
Hier ist jeder Tag (sonnig und heiß).	Here, every day is (sunny and hot)
Ich vermisse (die Sonne).	I miss (the sun).
Es ist ziemlich kalt hier!	It is quite cold here.
Früher war es oft (kalt) …	It used be often (cold)…
Nächste Woche werde ich …	Next week I will…

4. Wie können wir Spenden sammeln?

How can we collect donations?

Wir können …	We can…
Autos waschen.	wash cars.
einen Kuchenverkauf organisieren.	organise a cake sale.
einen Benefizlauf machen.	do a charity run.
ein gesponsertes Schweigen machen.	do a sponsored silence.
eine Modenschau organisieren.	organise a fashion show.
ein Benefizkonzert organisieren.	organsise a charity concert.

5. Was kann man machen?

What can you do?

Man kann …	You can…
umweltfreundliches Papier kaufen.	buy environmentally friendly paper
mit dem Rad zur Schule fahren.	go to school by bike.
einen Kapuzenpulli zu Hause tragen.	wear a hoodie at home.
duschen statt baden.	take a shower instead of a bath.
Obst und Gemüse selbst kultivieren.	grow your own fruit and vegetables.
den Müll sortieren.	sort the rubbish.

1. Was für ein Film ist „Das Wunder von Bern"?	**What kind of film is 'The miracle of Bern'?**
Ich denke „Das Wunder von Bern" ist...	I think 'The miracle of Bern' is...
ein Gruselfilm	a horror film
ein Liebesfilm	a romantic film
ein Science-Fictionfilm	a science fiction film
ein Dokumentarfilm	a documentary
ein Abenteuerfilm	an adventure film
ein Zeichentrickfilm	a cartoon
ein Actionfilm	an action film
ein Drama	a drama
eine Komödie	a comedy

2. Wie war das Leben nach dem Krieg?	**What was life like after the war?**
Das Leben war/hart/schwierig/nicht einfach	Life was hard / difficult /not easy
besonders für Kinder / Frauen /Familien	particularly for children / women /families
Es gab.....	There was....
viel Armut	a lot of poverty
viel Arbeitslosigkeit	a lot of unemployment
viel Obdachlosigkeit	a lot of homelessness
Kriminalität	crime
wenig Geld	not a lot of money
wenig Männer	not a lot of men
wenig Essen	not a lot of food
Viele Kinder/Leute hatten keine Hoffnung,	Lots of children/people had no hope,
deswegen waren viele Menschen	for this reason lots of people were
verzweifelt	desperate
unzufrieden	dissatisfied
schlecht gelaunt	in a bad mood
gestresst	stressed
traurig	sad
deprimiert	depressed
hungrig	hungry

3. Vor dem Krieg war...	**Before the war.... was....**
ich/ mein Bruder/meine Schwester...	I / my brother was / my sister
waren wir........	we were
war das Leben.....	life was....
glücklicher/ schöner/ einfacher/ unbeschwerter	happier/ nicer/ easier/ more carefree
zufriedener/ entspannter/ leichter/	more satisfied/ more relaxed/ easier/
lebendiger/ sorgenfreier	more lively/ more carefree
Nach dem Krieg war das Leben...	After the war, life was...
stressiger/ unglücklicher/ schwerer	more stressful/unhappier/more difficult
unzufriedener/ härter/ einsamer/	more unsatisfied/harder/lonelier/
blöder /liebloser/ trauriger/ ernster	more stupid/ loveless/sadder/ more serious
, weil es viel Streit /Gewalt gab	because there were lots of arguments/violence

4. Beschreib deinen Lieblingsdarsteller.	**Describe your favourite character.**
Mein Lieblingsdarsteller ist...	My favourite character is...
Er/Sie ist...	He/she is...
Ich finde ihn/sie...	I find him/her...
Aber manchmal war er/sie...	But sometimes he/she was...
Es wäre besser, wenn er/sie.... wäre.	It would be better if he/she was...
Alles in allem war der Film...	All in all the film was...
Ich würde den Film (nicht) empfehlen.	I would (not) recommend the film.

Chronology

Year	Event
1902	Balfour Act
1906	Free School Meals
1907	School Medical checks
1908	Children's Charter / Pension
1911	National Insurance Act
14 Apr 1912	Titanic Disaster
1914-18	World War One
1939-45	World War Two
1939	Child evacuees
1944	Education Act
5 July 1948	Introduction of NHS
1948	British Nationality Act
1948	Empire Windrush
1948	Children's Act
1958	Campaign for Equal Pay
1958	Summer of Violence
May 1960	Battle of the Beach(es)
1961	The pill available
1967	Abortion Act
1968	Rivers of Blood speech
1969	Divorce Act
1975	Equal Pay Act
1975	Sex Discrimination Act
1977	Battle of Lewisham
1978	Winter of Discontent
1979-90	Thatcher first female PM
Apr 1981	First Brixton Riot
July 1981	Toxteth Riots
1983-85	Miner's Strikes
2013	#Blacklivesmatter movement
2018	Windrush Scandal

Topics Key

Youth	Women	Education	Tech

Poverty & Reform	Immigration / protest

Key Words

Key Words	Definition
National Front	Far right political group – Anti immigration
SS Empire Windrush	The ship that brought the first immigrants to Britain from the Caribbean in 1948
Immigration	The policy of people moving to one country from another country for work or to settle
Immigrant	A person or group of people who emigrate to another country for work or to settle
Labour	Another term for 'work' or 'working'
Act	Another term for 'Law' passed by Parliament
Race	A physical, behavioural or cultural aspect defining a group of people
Racism	Acts of violence, intimidation, prejudice or discrimination towards a particular Race
Discrimination	Treating people differently based on their race, gender, sexuality
Trade Union	Fights for improvement in worker's rights
Beatlemania	The influence of the Beatle's music on society
Equality	All races, genders & people treated the same
Industry	Manufacturing output of a country
Women's Land Army	Women who stepped into the gaps left by the men who went off to war and farmed the food
Rationing	The limits on some food products during war
Liberation	Another term for being freed
Women's Lib	A movement fighting for women to have more equal status and more freedom / choices
Nationality	Where a person comes from eg English
Gender Pay Gap	A gap where men are paid more than women
Colour Bar	A social system in which black / other non-white people are denied access to that of white people
Liberal Reform	Laws introduced to deal with poverty in Britain
Poor Relief	Financial support for people in deep poverty
Poor Law	Workhouses / outside work set up by the government providing food and shelter
Labour Party	Political party with socialist ideology
Conservative Party	Political party a more nationalist ideology
Liberal Democrats	Political party with a moderate central ideology
Socialism	A political ideology where the wealth of the country is fairly divided amongst all citizens
Cradle to Grave	Being looked after from birth to death by NHS
Welfare State	The state tries to protect the health and wellbeing of its citizens, supporting in difficult times

Important image(s)

Services offered **free** at the point of use by the NHS

Margaret Thatcher: Britain's first Female PM

Nye Bevan – Health Minister Introduced NHS July 5th 1948

Key People

Key People	Role
Enoch Powell	Politician who delivered Rivers of Blood racist speech
Arthur Scargill	Union leader in charge of the coal miner's strikes
Nye Bevin	Labour Health Minister introduced NHS
Charles Booth	Investigated poverty in London, reported conditions
William & Catherine Booth	Started the Salvation Army
Seebohm Rowntree	Investigated poverty in York, reported conditions
Margaret Thatcher	First female Prime Minister 1979-1990
Clement Attlee	Prime Minister straight after WW2
William Beveridge	Identified '5 giants' and proposed a welfare state
David Lloyd George	Chancellor during Liberal Reforms, later Prime Minister
Winston Churchill	Prime Minister during WW2

HISTORY

Liberal Reforms 1906-1912

Free school meals 1906

School medical inspections 1907

The Children's Act (Charter) 1908

Pensions Act 1908

School clinics 1912

National Insurance Act 1911-1912

The Labour Exchange Act 1909

Core Knowledge

As the economic situation improved after WW2, almost everyone had a job and their own money including teenagers. This led to a new freedom creating their own identities.

Music & pop culture became a massive influence in people's lives, especially teenagers.

The introduction of the pill gave women more freedom in the choices they could make contributing to a more independent woman not having to settle for being a housewife.

The Boer war and WWI highlighted to the government how poverty was affecting Britons sewing the seeds for it to intervene more and help people which would be the Welfare State.

The damage both physically and economically of WW2 meant Britain had to change. This led to the building of new towns and cities, the welfare state and the NHS. This in turn meant there was a huge need for labour leading to a large influx of immigrant workers.

The Liberal Reforms came about because the government realised Britain was falling behind on the global scale. The USA and German economies were much healthier and their armies much stronger. The investigations by Rowntree and C. Booth highlighted how terrible life was for those in poverty prompting the Liberal Government to act.

The 5 Giants of society causing a lot of the problems were identified as 'Want' 'Ignorance' 'Disease' 'Squalor" and 'Idleness'. The Labour government after WW2 believed if they got rid of these issues in society Britain would be healthier, fairer and stronger

The British Nationality Act of 1948 offered immigrants from the Commonwealth of old colonies British Citizenship and a passport if they came to Britain. The first migrants arrived on the SS Empire Windrush from the Caribbean. Many came from India & Pakistan, bringing new cultures, foods, music and attitudes to Britain leading to our multicultural society of today.

The influx of foreigners to Britain led to some extreme political views and racial violence particularly in the black community. Many Britons felt that the immigrants were taking their jobs and it was time to send them home, leading to the creation of the National Front and political speeches like Enoch Powell's Rivers of Blood. Riots and protests grew more violent in the 1980s in London and Liverpool.

Education changed dramatically from just boys getting a basic education, to the promotion of grammar schools and comprehensives to finally compulsory education for boys and girls up to the age of 18. There is still some inequality in education today that many are fighting

Key discoveries / ideas

Beatlemania: A popular craze for youngsters following the Beatles

Mods, Rockers & Teddy Boys: Different groups for teenagers to join and identify with. The beginnings of challenging authority

NHS: An organisation that will look after ever citizen from birth to death for free (at the point of use - paid for in extra taxes)

Technology: Titanic, The Pill, items for the home (washing machines, hoovers, cookery equipment), Television, Cars, Motorbikes, Video

Common misconceptions

Not all teenagers chose to join rebel gangs. Not all women wanted the new freedoms, they felt pressurised.

Immigrants who came from the former colonies of the British Empire classed themselves as British, especially after fighting for Britain in both World Wars.

Lots of men supported the Women's Lib movement and equality for all too.

Although the immigrants faced lots of abuse and prejudice, most of Britain welcomed them and supported them.

Books / Articles / Films / websites

Brassed off – poverty & Miner's strikes

Liberal Reforms BBC Bitesize

Back in Time for School BBC iPlayer

Andrew Marr's Modern Britain Book/TV

Key Themes

Government, Protest, Democracy, Military, Empire, Migration, Technology, Women

Year 9 Knowledge Organiser
PLOTTING AND INTERPRETING GRAPHS

Key Concept

Substitution – This is where you replace a number with a letter

If a = 5 and b = 2

a + b =	5 + 2 = 7
a – b =	5 – 2 = 3
3a =	3 × 5 = 15
ab =	5 × 2 = 10
a^2 =	5^2 = 25

Tip
Parallel lines have the same gradient.

hegartymaths
206 - 210, 251

Key Words

Intercept: Where two graphs cross.

Gradient: This describes the steepness of the line.

y-intercept: Where the graph crosses the y-axis.

Linear: A linear graph is a straight line.

Quadratic: A quadratic graph is curved, u or n shape.

Formula

$$Gradient = \frac{difference\ in\ y's}{difference\ in\ x's}$$

Examples
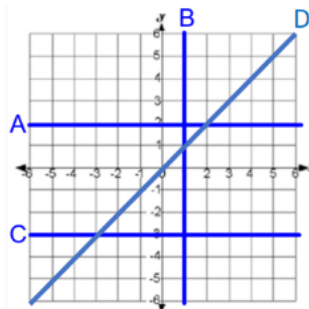
A: y = 2   B: x = 1
C: y = -3   D: y = x

Draw the graph of y = 2x - 1

X	- 2	- 1	0	1	2
Y	-5	-3	-1	1	3
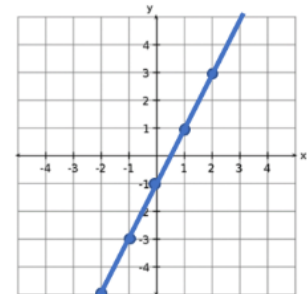
Notice this graph has a gradient of 2 and a y-intercept of -1.

Questions
1) What are the gradient and y-intercept of:
a)   y = 4x – 3   b) y = 4 + 6x
            c) y = - 5x – 3
2) Draw the graph of y = 3x – 2 for x values from -3 to 3 using a table.

ANSWERS: 1) a) m = 4, c = -3   b) m = 6, c = 4   c) m = -5, c = -3

Year 9 Knowledge Organiser
STANDARD FORM

Key Concepts

We use standard form to write a very large or a very small number in scientific form.

Must be × 10

b is an integer

$$a \times 10^b$$

Must be $1 \leq a < 10$

hegartymaths
121 – 129

Key Words
Standard form
Base 10

Links
Science

Examples

Write the following in **standard form**:

1)   3000 = 3×10^3

2)   4580000 = 4.58×10^6

3)   0.0006 = 6×10^{-4}

4)   0.00845 = 8.45×10^{-3}

Calculate the following, write your answer in **standard form**:

1) $(3 \times 10^3) \times (5 \times 10^2)$

$3 \times 5 = 15$
$10^3 \times 10^2 = 10^5$ } 15×10^5
                                $= 1.5 \times 10^6$

2) $(8 \times 10^7) \div (16 \times 10^3)$

$8 \div 16 = 0.5$
$10^7 \div 10^3 = 10^4$ } 0.5×10^4
                              $= 5 \times 10^3$

A)   Write the following in standard form:
1)   74 000   2) 1 042 000   3) 0.009   4) 0.000 001 24
B)   Work out:
1) $(5 \times 10^2) \times (2 \times 10^5)$ 2) $(4 \times 10^3) \times (3 \times 10^8)$
3) $(8 \times 10^6) \div (2 \times 10^5)$ 4) $(4.8 \times 10^2) \div (3 \times 10^4)$

ANSWERS: A1) 7.4×10^4 2) 1.042×10^6 3) 9×10^{-3} 4) 1.24×10^{-6}
B1) 1×10^8 2) 1.2×10^{12} 3) 4×10 4) 1.6×10^{-2}

Year 9 Knowledge Organiser
STRAIGHT LINE GRAPHS AND EQUATION OF A LINE

Key Concepts

Coordinates in 2D are written as follows:

x is the value that is to the left/right (x, y) y is the value that is to up/down

Straight line graphs always have the equation:
$$y = mx + c$$
m is the **gradient** i.e. the steepness of the graph.
c is the **y intercept** i.e. where the graph cuts the y axis.

Parallel lines always have the same **gradient**.

hegartymaths
199,200,205,207-211,214

Key Words
Coordinate
Gradient
Parallel

Examples

Plot the graph of $y = 2x + 1$

x	0	1	2
y	1	2	3

Examples of lines parallel to this graph are: $y = 2x - 3$ or $y = 2x + 7$

Calculate the equation of this line:
$$y = mx + c$$
$$m = \frac{4}{2}$$
$$= 2$$
$$y = 2x + c$$
Substitute in a coordinate: (2,7)
$$7 = (2 \times 2) + c$$
$$3 = c$$
$$y = 2x + 3$$

1) Plot the line $y = 3x - 2$
2) Find the equation of the line for the attached graph.
3) State the equation of a line that would be parallel to this line.

Year 9 Knowledge Organiser
SEQUENCES

Key Concepts

Arithmetic or linear sequences increase or decrease by a common amount each time.
Geometric series has a common multiple between each term.
Quadratic sequences include an n^2. It has a common second difference.
Fibonacci sequences are where you add the two previous terms to find the next term.

hegartymaths
198, 247-250, 264

Key Words
Linear
Arithmetic
Geometric
Sequence
Nth term

Linear/arithmetic sequence:

-3 +3 +3 +3 +3
+1 4 7 10 13 16.....

a) State the nth term
$$3n + 1$$
Difference → ← The 0th term

b) What is the 100th term in the sequence?
$$3n + 1$$
$$3 \times 100 + 1 = 301$$

c) Is 100 in this sequence?
$$3n + 1 = 100$$
$$3n = 99$$
$$n = 33$$
Yes as 33 is an integer.

Examples

Pattern 1   Pattern 2   Pattern 3

Hint: Firstly write down the number of matchsticks in each image:
$$7n + 1$$

Linear sequences with a picture:
State the nth term.

	Pattern 1	Pattern 2	Pattern 3
+1	8	15	22

-7   +7   +7

Geometric sequence e.g.   ×3 ×3 ×3
4 12 36 108...

Quadratic sequence e.g. $n^2 + 4$ Find the first 3 numbers in the sequence
First term: $1^2 + 4 = 5$ Third term: $3^2 + 4 = 13$
Second term: $2^2 + 4 = 8$

1) 1, 8, 15, 22, ...
a) Find the nth term   b) Calculate the 50th term   c) Is 120 in the sequence?

2) $n^2 - 5$ Find the first 4 terms in this sequence

Music

Developing Music Technology skills

Music Technology – key terms	
Revising and developing knowledge of key terms from Y8/T1 - DAW, Audio, Sample, Loop and Remix	
Midi	Musical Instrument Digital Interface. Data system used to send and store note information in a DAW
Automation	Saving mix information within a song – e.g. volume, panning etc.
Import	Adding a file to a project
Export	Saving a track or tracks out of a project
Bounce	Exporting all tracks as a stereo mix track
Key term - Effects	
Revising and developing knowledge of processes from Y8/T1 - reverb, delay and EQ	
Filter Sweep	Changing EQ settings in real time to create interesting effects.
Compression	Controlling the volume level of a track or tracks
Instruments	
Synthesizer	How oscillators create different sound waves that can be manipulated.
Key term - Texture	
Layered Texture	Texture often layered in 4/8 bar sections.
Drops	Where the texture suddenly changes to create a sense of anticipation before a gradual build often using and extended drum fill.

Music Technology Vocabulary
Revising and developing knowledge of terms from Y8/T1 – Multitrack, Pan, Solo, Mute, Quantization, Velocity, Overdubbing, Reverse.
Song structure
Revising and developing knowledge of key terms from songs – Structure (verse/chorus etc.), Hook, Riff, Lyrics, AABA structure
Key term – Chords/Harmony
Revising and developing knowledge of key harmonic terms – chord, triad, major, minor, I, IV, V, ii, iii, vi

Chords progressions	Looking at common chord sequences in pop and dance music.

Practical Skills	Using computer software to edit and arrange music.
Listening	Identification and application of vocabulary relating to music technology and song structure
	Listening to songs to identify main structural features
Performing	Using a DAW to arrange and record music from pop and dance tracks
Composing	Creating a remix track using Music Technology
Contextual knowledge	Short research project based upon Electronic/pop music styles and composers

9.5 KS3 Core PE Knowledge Organiser: Fitness Testing

Fitness Testing

Component	Test	Protocol
Body Composition	Body Mass Index	The calculation for BMI is as follows: Weight (kg)/ height (m^2). Calculate score with BMI charts.
Coordination	Alternate Hand Wall Toss Test	Stand 2m away from a wall with a tennis ball in your hand. Throw the ball at the wall and catch it with the opposite hand. See how many catches you make in 30s.
Power	Vertical Jump Test	Stand next to a wall and reach up as high as you can marking the highest point of your fingertips. Jump as high as you can making a second mark at the **highest point of the jump**. Measure the distance between the 2 marks on the wall.
Reaction Time	Ruler Drop Test	An assistant holds a 30cm ruler between your thumb and index finger Starting at 0cm,the assistant randomly drops the ruler and is caught with between the fingers. Take note of the cm measurement where it was caught.
Speed	30m Sprint Test	Measure out 30m in a straight line and mark with cones. On the shout of 'Go' run as fast as you can with an assistant timing you.
Balance	Stork Balance Test	Bend one knee and place the sole of the foot against the inside of the standing leg. Raise onto you tiptoes and start timing until you lose balance or the sole of the standing foot touches the floor.
Agility	Illinois Agility Run Test	Set out the course using cones. Start laying down on your stomach. When you hear go run and complete the course in as quick a time as possible.
Flexibility	Sit and Reach Test	Sitting with legs flat on the ground and feet against the sit and reach box, reach forward as far as you can and record distance on the scale on top of the box.
Muscular Endurance	1-Minute Sit-Up/Press Test	Complete the maximum amount of press ups or sit ups in 1 minute. Count the number that you complete.
Strength	Grip Dynamometer	Hold the dynamometer in your hand with the scale at 0. Squeeze the handle as hard as you can. Record the score on the scale.
Cardiovascular Fitness	12 Minute Cooper Run/swim	Run or swim for 12 minutes counting the number of laps you complete. Multiply the number of laps by the distance of each lap to give you the total distance covered in 12 minutes.

Key Vocabulary	Benefits of fitness testing	Your turn: Attempt these
Aerobic, anaerobic, exercises, stations, terrain, intensity, resistance, fitness testing, training programme, progress, monitor	• Allows you to see strengths and weaknesses in current fitness levels • Helps plan a training programme to improve fitness/ performance • Can be used to monitor progress in a fitness programme.	1) State the tests used to measure muscular endurance 2) Give an advantage and a disadvantage of the grip dynamometer

9.6 KS3 Core PE Knowledge Organiser: Methods of Training

Methods of Training

Method	Description	Fitness component	Sporting Example
Continuous	**No rest periods.** Exercising at a **constant** rate. E.g. Running, Cycling, Swimming.	**CV fitness**	Marathon Runners, Swimmers, Long-Distance Cyclists, Games Players
Fartlek	**It involves changes of speed.** It's **a type of continuous training** but involves changes in intensity over different intervals. E.g. changing speed or terrain.	**CV fitness**	Marathon Runners, Swimmers, Long-Distance Cyclists, Games Players
Interval	**This uses fixed patterns of exercise.** It has periods of high intensity exercise and either low intensity or rest. **Very structured.**	**CV fitness & speed**	Marathon Runners, Swimmers, Long-Distance Cyclists, Games Players, Sprinters
Resistance/ Weight	**Helps strength and muscular endurance.** You are using muscles **against resistance. Anaerobic** training.	**Strength & M. Endurance**	Weightlifters, Boxers, Swimmers, Cyclists, Sprinters
Circuit	**Stations** of **specific exercises** for a **set** amount of time before moving on to the next station. **Works both aerobic and anaerobic fitness.**	**M. endurance, strength &/or CV fitness**	A Variety of Athletes (Depending on Component of Fitness)
Plyometric	Exercises in which muscles exert **maximum force** in **short intervals** of time, with the goal of **increasing power.**	**Power**	Sprinters, High Jumpers, Long Jumpers

Misconceptions

- Agility run begins with you lying face down.
- Fitness tests are used to measure components not improve them
- Fartlek training can involve a change of pace and/or terrain
- Circuit training can include skill specific stations and can take many different forms.
- Weight training can use both machine weights, dumb/kettle bells or a persons body weight.

Worked example – Ben is a cross country runner. Discuss the use of continuous and fartlek training to improve his performance.

Continuous training involves no rest periods and exercising at a constant rate.(1) Fartlek training involves changes of intensity (speed) or terrain. (1). Both methods of training improve CV fitness (1) which will help Ben run for longer at a higher intensity in his races. (1). Cross country involves running over different surfaces, therefore due to the change in terrain, fartlek training would be more specific for Ben as it replicates his event. (1) The change in intensity could also help him during sprint finishes at the end of the race.

Discuss - Required to explore the issue/situation/problem that is being assessed in the question context, articulating different or contrasting viewpoints, for example advantages, disadvantages

Your Turn: Try these questions

1) Identify a training method suitable for a boxer and explain how it would benefit their performance. 2) State 2 characteristics of circuit training.

RE – Year 9 Topic 3: Ethics

KEY QUOTES
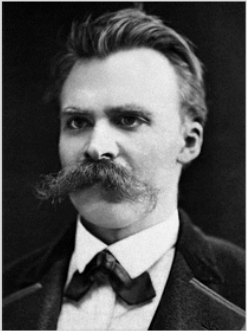
'God is dead and we have killed him' (**Nietzsche**)

'Nature has placed mankind under the governance of two sovereign masters, pain and pleasure.' (**Jeremy Bentham**)

'the banality of evil' (**Hannah Arendt**)
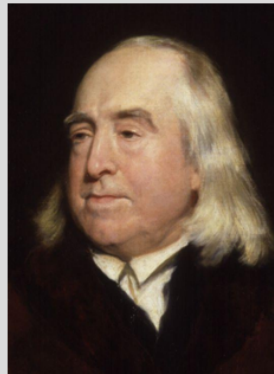
KEY PEOPLE

Hannah Arendt – German philosopher, attended the trial of Adolf Eichmann, wrote about the 'banality of evil'.

Jeremy Bentham – English philosopher, founder of utilitarianism, argued that pleasure and pain are the same as good and bad.

Philippa Foot – English philosopher, designed the runaway train thought experiment.

John Locke – English philosopher, argues that when we are born our mind is like a blank slate.

John Stuart Mill – English philosopher, developed utilitarianism, argued that the quality of pleasure and pain is more important than the quantity.

Friedrich Nietzsche – German atheist, said humans no longer need the idea of God.

Robert Nozick – American philosopher, argued that humans value more than just pleasure.

John Searle – American philosopher, argued against the claim that computers can think.

Peter Singer – Australian philosopher and utilitarian, popularised the term 'speciesism', prejudice and discrimination against animals.

Alan Turing – English computer scientist and philosopher, designed a test to show whether a computer can think.

Key Word	Definition
Absolutism	The view that certain actions are inherently good or bad.
Altruism	Selfless actions done without thought or expectation of reward.
Ethics	The philosophical study of right and wrong.
Morality	Ideas or principles about what is right and wrong.
Relativism	The view that whether an action is good or bad depends on the situation.
The will to power	A term used to describe a natural human desire for strength and power.
Hedonic calculus	**Bentham's** way of calculating which actions are right and which are wrong.
Utilitarianism	The theory that the best action in any situation is the one which creates the greatest amount of good for the greatest number.
Thought experiment	An imaginary scenario invented to examine the consequences of a philosophical idea.
The banality of evil	A phrase used by **Hannah Arendt** to describe how evil can result from ordinary. thoughtless behavior.
Holocaust	The killing of six million Jews by the Nazis in Germany between 1933 and 1945.

What is ethics?
Ethics is deciding what is right and wrong, good and bad. Morality is influenced by where you live. Some people say some things are always good or bad, whereas other people say different things are good or bad depending on the situation.

What did **Nietzsche** believe?
Freidrich Nietzsche believed that all humans have a natural desire for strength and power. He believed people who were selfless and caring and forgiving were weak

Are goodness and pleasure the same?
Utilitarianism is the theory says that the best action in any situation is the one which creates the greatest amount of good for the greatest number.

The runaway train dilemma
This was a thought experiment invented to examine a philosophical idea. The philosopher **Philippa Foot** thought morality should not be based on the consequences of an action. It is a philosophical problem that looks at whether it is right to deliberately kill one person to save the lives of many people.

The banality of evil
Adolf Eichmann was a senior Nazi during WW2. His job was to transport Jews in the most efficient way to the concentration camps. He did not actually kill anyone but he was an important part of the process. **Hannah Arendt** said the frightening thing about him was that he was an ordinary man who carried out orders without thinking for himself. She said people should think for themselves, and speak up when we see that something is evil.

Key Terms	Definitions
Monotheism	One God – Christians believe in the oneness of God
Trinity	Three sides to the one God (Father, Son, Holy Spirit)
Omnipotent	All-powerful
Loving	Kind and caring
Just	Fair
Omnipresent	Everywhere
Forgiving	Pardoning someone when they have done wrong
Jesus Christ	God incarnate, God on earth
Incarnation	God comes down to earth as Jesus to help the world
Crucifixion	Jesus was killed on a cross
Resurrection	Christians believe Jesus rose from the dead
Ascension	After his resurrection, Jesus ascended to heaven.
Parables	A story with a meaning.
Miracles	Events that break the laws of nature?
Baptism	Jesus was baptised, so are many Christians.
The Last Supper	Jesus shared bread and wine, Christians today remember this with Holy communion / the Eucharist.
The Lord's Prayer	Jesus taught his disciples to pray 'Our Father'.
The Word	Jesus is seen as the word of God.
Holy Spirit	Third person of the Trinity, God unseen but present
Pentecost	When the Holy Spirit came to the disciples.
Easter	Remembers Jesus' death and resurrection.
Christmas	Remembers Jesus' birth and incarnation.

Religious Studies: Christianity Beliefs and Teachings

What do Christians believe about the nature of God?

Christians are monotheists, they believe in one God who is eternal, omnipotent and omnipresent, loving, just and forgiving. They say God created the universe, but they may accept that he started the process of the Big Bang and evolution rather than accepting the traditional Bible stories in Genesis.

What about the Trinity?

Christians believe there are three sides to God, the three persons of the Trinity. Like a triangle, one shape but three sides. The Trinity is God the Father, God the Son (Jesus) and the Holy Spirit. Each person is fully God, they are separate but one being.

What about Jesus?

Jesus is seen as God incarnate, God on earth, he is very important for Christians. The incarnation is celebrated at Christmas when his birth is remembered. Jesus was a human who walked earth as a physical person; he also shows Christians what God is like. He did this by telling parables, and by the way he treated others – with compassion. He could perform miracles. He was baptised in the River Jordan by John the Baptist, was popular with many but also disliked by some. He was crucified and died, this is remembered on Good Friday. On the Sunday he is believed to have resurrected from the dead, and he appeared to his disciples. This is remembered at Easter. 40 days later Jesus ascended to heaven where he 'is seated at the right hand of the father'. At his last supper before he died Jesus shared bread and wine with his disciples, telling them to 'do this is remembrance of me', which many Christians still do today calling it Holy Communion or the Eucharist. Stories of Jesus are found in the 4 gospels (good news) in the Bible.

What about the Holy Spirit?

Everywhere but unseen, Christians say the Holy Spirit was sent to the disciples on the Day or Pentecost, after Jesus had ascended to heaven. It is seen as inspiring, a comforter. Christians talk about the 'fruits of the spirit', and at creation 'the spirit of God hovered over the waters'.

Key quote on God:

"In the beginning God created the heavens and the earth… God created man in his own image, in the image of God he created him, make and female he created them…" *Genesis 1*

Key quote on Jesus:

"For God so loved the world he gave his only son, that everyone who believes in him may not die but have eternal life.." *John 3:16*

Key quotes on the Holy Spirit:

"The fruits of the Spirit are love, joy, peace, patience, kindness, goodness, faithfulness, gentleness and self control." *Galatians 5:22*

Key Terms	Definitions
The Afterlife	The idea of a life after death, death is not the end.
Heaven	Paradise, a place with God.
Hell	Eternal punishment, a place away from God.
Judgement	Who goes to heaven? People are judged by God.
Purgatory	Roman Catholic belief, an inbetween state.
Resurrection	Jesus was resurrected, so can humans be.
(Reincarnation	Not a Christian belief.)
Souls	The spiritual side of the body said to survive death.
Creation	Where did the universe come from?
Problem of Evil and suffering	How does an omnipotent, all-loving and just God allow bad things to happen? Why do we suffer?
Free will	Humans can choose how they behave and act.
Sin	A thought or action that separates humans from God.
Original Sin	Adam and Eve's sin, shared by all humans.
The Devil	Satan, Lucifer. A source of temptation and bad.
Salvation	Being saved.
Means of salvation	How to be saved and reach heaven.
Salvation by law	Salvation by following rules like the 10 commandments
Salvation by grace	Salvation by the grace of God / Jesus.
Salvation by spirit	Salvation through the Holy Spirit.
Atonement	Humans and God being brought back together.
Evangelism	Telling others the good news of Jesus.

Religious Studies: Christianity Beliefs and Teachings

What do Christians believe about the afterlife?

Christians say death is not the end, as Jesus was resurrected so humans can be into heaven, seen as paradise, a place with God. The Bible also talks about hell, the opposite to heaven, a place of torment and suffering where people can be punished. Judgement by God takes place after death.

While all Christians believe in heaven, some question whether a loving God would ever send anyone to eternal punishment. Catholics talk about purgatory, a place in between heaven and hell.

What about salvation?

To get to heaven you need to be saved, this is the idea of salvation, saved from sin and its consequences and granted eternal life with God. Christians say people can be saved by obeying God's laws, and 'by works', actions to help others. However, no one is perfect, so salvation by grace through faith in Jesus is seen as God's loving gift. Jesus (the second Adam) atones / makes up for original sin and allows humans a way back to God and heaven. This is why some Christians (but not all!) say you have to believe in Jesus to be saved, and they see evangelism as very important as it is a way to 'spread the good news' of Jesus. Christians say the Holy Spirit gives grace and guidance which leads to salvation.

What is Original Sin?

Adam and Eve sinned by disobeying God's command, this is the fall from grace, the Original Sin, which separated humans and God, bringing evil and suffering into the world. The devil tempted humans, they sinned. However, Original Sin is not just seen as this one act, it is also the in-built tendency humans have to do wrong and disobey God. Some Christians say we are born in this state of sin and baptism removes this sin, one reason for infant baptism.

What is the Problem of Evil and Suffering?

The Problem of Evil challenges belief in God. If God is all-loving, why does he let people suffer, and hurt others? If God is omnipotent he could stop this, especially as Christians say he is all-knowing. If God is just he will want to stop unfair things happening – so why doesn't he? Christians say human free will means we sin, we follow the devil's temptations. They also say that our suffering ends and is rewarded in heaven.

Key quotes on heaven/hell:
The Parable of the Sheep and the Goats
Matthew 25

Key quote on salvation:
Jesus said "In my Father's house there are many rooms." *John 14:2*

Key quotes on salvation:
Jesus said 'I am the way, the truth and the life. No one comes to the Father except through me." *John 14:6*

Biodiversity is the variety of different species of organisms on Earth or within an ecosystem.

Biodiversity can be reduced by: altering habitats, hunting species to extinction, introducing toxic compounds into food webs, introducing foreign species to new environments.

Biodiversity can be increased by: breeding programmes, protecting rare habitats, reintroduction of hedgerows around field margins, reducing the use of landfill, reducing CO_2 emissions.

Habitat – the area where an organism lives. This can be a very large area or a very small area.

Community – a group of organisms living together

Ecosystem – the interaction between living organisms and the non-living environment.

Interdependence – when two or more organisms rely on each other for food, shelter etc.

Animals compete for: food, mates and space

Plant compete for: light, water, minerals and space

Abiotic factor – non-living factor that can have an effect on a species. **Examples**: light intensity, temperature, moisture levels, soil pH, mineral level in the soil, wind intensity and direction, carbon dioxide concentration, oxygen concentration.

Biotic factor – a living factor that can have an effect on a species. **Examples:** availability of food, new predators, new pathogens, being out competed.

Adaptation – features that allow an organism to survive in its habitat.

Structural adaptation – physical features of an organism, e.g.. Bright colours to attract a mate

Behavioural adaptation – the way an organism acts, e.g. Hibernation during winter

Functional adaptation – how the organisms body operates, e.g. photosynthesis in plants

Extremophile – an organism that is adapted to live in an extreme environment, e.g. very high temperature, very acidic, very salty

Year 9 Topic 3 Biology Knowledge Organiser
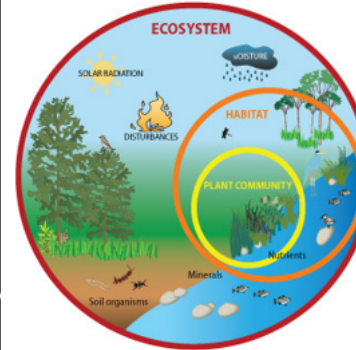
Tier 2 Vocabulary
Biodiversity   Pollution Deforestation

Tier 3 Vocabulary

Habitat	Producer
Community	Consumer
Ecosystem	Food chain
Interdependence	Food web
Biotic	Organism
Abiotic	Extinction
Adaptation	Quadrat
Extremophile	Decomposer
Predator	Eutrophication
Prey	

Producer – a green plant that makes its own food

Primary consumer – an organism that eats a producer

Secondary consumer – an organism that eats a primary consumer

Tertiary consumer – an organism that eats a secondary consumer

Predator – an animal that kills and eats other animals

Prey – an animal that is killed and eaten by other animals.

Structural Adaptations
Sharp quills for protection from predators
Protruding snout (for accessing termite mounds)
Sharp claws for digging / burrowing

Behavioural Adaptations
Curls into ball when threatened (exposes quills)
Digs burrows in which to nest and rest
May hibernate during winter in very cold regions

Physiological Adaptations
Ears sensitive to low frequencies (detect ant sounds)
Well developed olfactory system (used for detection)
Tongue can stiffen and penetrate soil due to blood flow

Random Sampling (estimate the organisms in an area)
1. Place quadrat randomly (throw over shoulder or with eyes closed)
2. Count the organisms in the quadrat
3. Repeat at least 10 times across the whole sample area.
4. Calculate the number of organism in the whole area using the calculation:

Estimated population size = total area x number of organisms
area sampled

Food Chain

A Food Web

Carbon Cycle
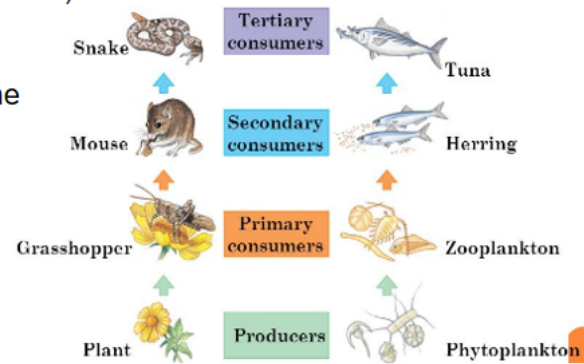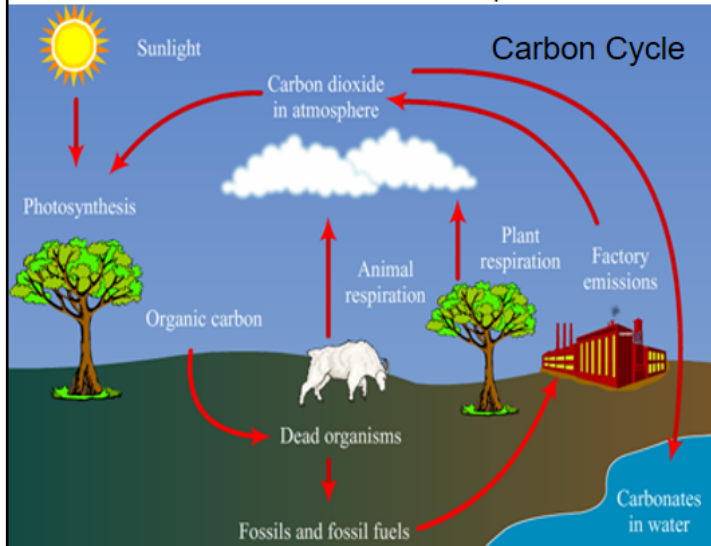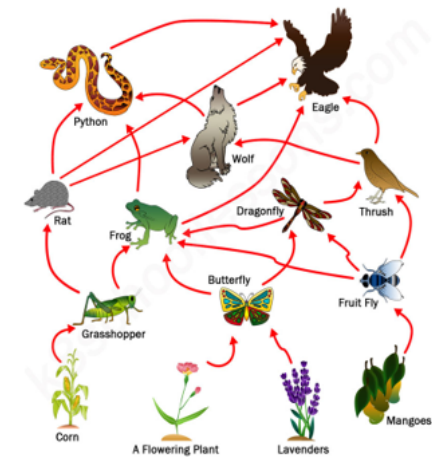
Uses of Land
Mining – habitat destruction
Building – habitat destruction, road divide habitats
Farming – pollution from fertilisers, reduction in nesting sites for birds
Landfill – toxic chemicals enter food chains, soil and water, reduction in biodiversity, loss of habitats

Peat Bogs
Wet environments formed of partially decomposed plant material. Act as a carbon store.
Destruction leads to – reduction in biodiversity, release of carbon into the atmosphere.

Water Pollution
Causes – fertilisers, pesticides and herbicides, toxic chemicals from landfill, untreated sewage
Effects – eutrophication, death of water organisms, reduction of biodiversity

Land Pollution
Causes – landfill sites
Effects – toxic chemicals in soil, reduction of biodiversity, toxic chemicals build up in food chains

Air Pollution
Causes – burning fossil fuels   **Effects** – plants covered in soot, acid rain

Deforestation – cutting down trees on a large scale
Uses - Provide land for cattle and rice fields, grow crops, clear space for building
Disadvantages – release of carbon dioxide into the atmosphere, reduction in carbon dioxide being taken in from the atmosphere, reduction in biodiversity, increased methane.

Global Warming – the increase in average global temperature
Causes – increased carbon dioxide and methane in the atmosphere
Effects – changes in migration patterns, survival of well-adapted organisms, extinction, increased sea levels, changes in weather

Gene Bank – a site where genetic material is stored to be used later to increase the numbers of endangered plants and animals.

Water Cycle
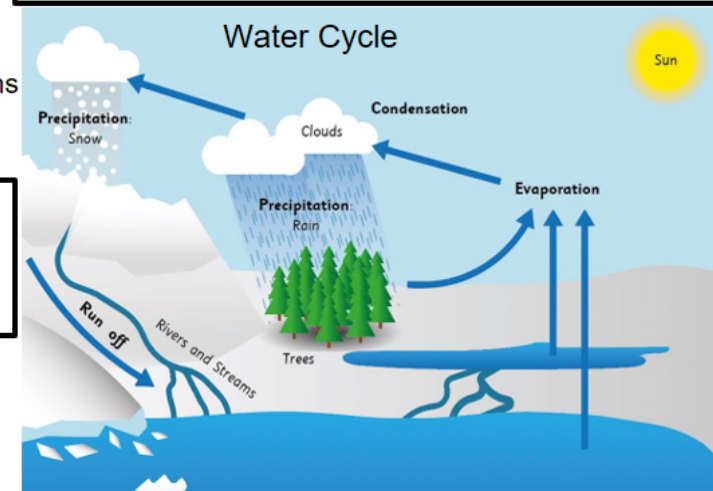
Earth's structure:

Plate tectonics is where the Earth is split into pieces known as plates.

Crust
Mantle
Outer Core
Inner Core
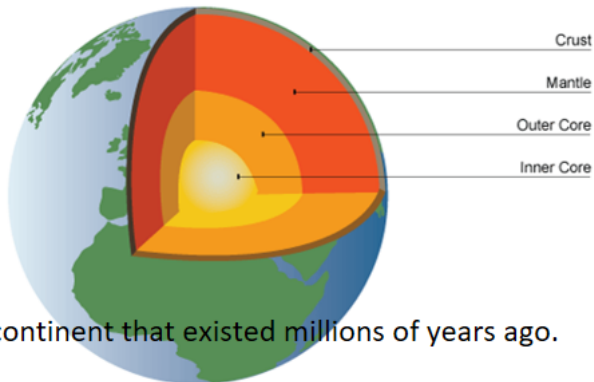
Pangea - was a supercontinent that existed millions of years ago.

Rock Formation

Sedimentary Rock- Eroded sediments settle and are Compacted, salt crystals cement the layers together.

Igneous Rock – From volcanoes, slow cooling and freezing gives big crystals for example granite known as intrusive igneous rock.

Fast cooling and freezing gives little crystals for example Basalt, known as extrusive igneous rock

Metamorphic Rock – Formed by heat and or pressure acting on existing rocks. They do not melt the particles are just rearranged. For example marble was limestone.

The Rock Cycle
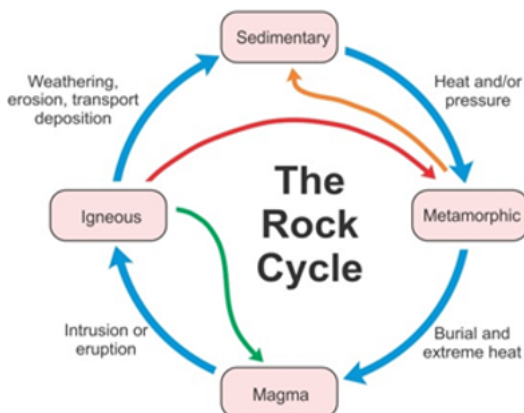
Rock types and properties:

The three rock types are:

Sedimentary Rock - soft, porous, have layers and may contain fossils.
Examples: Sandstone and limestone.

Igneous Rocks – Hard and durable, crystals and non porous – NO fossils.
Examples: Pumice, basalt and granite.

Metamorphic Rock – Striped appearance, contain crystals, non porous – NO fossils.
Examples: Gneiss, slate and marble.

Earth's atmosphere – Early

The early atmosphere	
Gas	% in atmosphere
Carbon dioxide	92
Nitrogen	4
Methane	2
Ammonia	2

Tier 2 Vocabulary

Carbon dioxide
Rock formation
Global warming
Theories
Evidence

Tier 3 Vocabulary

Combustion
Incomplete combustion
Atmosphere
Sedimentary
Igneous
Metamorphic
Photosynthesis
Volcanic
Greenhouse effect
Pollution
Plate tectonics
Particulates
Global dimming

Earth's atmosphere – present day

Earth's early atmosphere was probably like the atmospheres of Mars and Venus today, consisting of mainly CO_2 with little or no O_2

Volcanic activity released the gases that formed our early atmosphere.

Theories about the Earth's atmosphere have changed because of lack of evidence.

Algae and plants produced the oxygen that is now in our atmosphere by photosynthesis.

$$6CO_2 + 6H_2O \xrightarrow{\text{light energy}} C_6H_{12}O_6 + 6O_2$$

carbon dioxide   water   glucose   oxygen
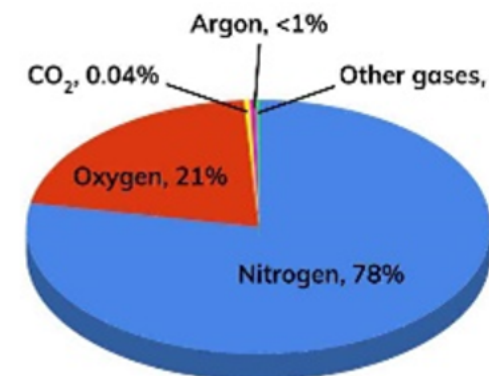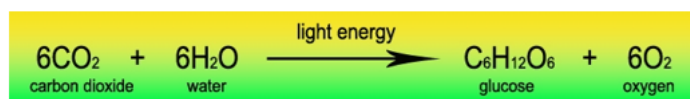
The oceans formed as the Earth's temperature cooled, causing rain to fall and the ocean's to form.

Argon, <1%
CO_2, 0.04%
Other gases,
Oxygen, 21%
Nitrogen, 78%

Complete combustion

Burning – the reaction of a fuel burning with oxygen in the air.

Fuel – can be coal, oil, gas or wood.

Hydrocarbon – a fuel which contains the elements hydrogen and carbon only.

COMPLETE COMBUSTION

Hydrocarbon + Oxygen → Carbon Dioxide + Water

OXYGEN / HEAT / FUEL

Incomplete combustion

Where combustion (burning) takes place with not enough oxygen.

Products from incomplete combustion are:

Carbon monoxide – toxic; Soot – black particles; Water

INCOMPLETE COMBUSTION

Hydrocarbon + Oxygen → Carbon Dioxide + Water + Carbon Monoxide + Carbon

Carbon Cycle

Carbon is absorbed from the atmosphere by being dissolved into the oceans and by plants photosynthesising. It is released by burning of fossil fuels and respiration.

CARBON CYCLE

Products of Combustion.

Small luminous Bunsen flame (airhole closed)

Natural gas

To water pump

Ice bath

Blue cobalt chloride paper

Limewater

How does the apparatus show that water is produced?

The blue cobalt chloride paper turns pink

How does the apparatus show that carbon dioxide is produced?

The limewater turns cloudy

Global Warming -
Carbon dioxide going into the atmosphere has an environmental impact known as Global warming. Global warming causes the following: Temperatures rise; Seal levels can rise; Flooding; Polar ice caps melt; Animals lose their habitats; Extreme weather such as storms

Greenhouse Effect

Three greenhouse gases are:
Water vapour (H_2O), carbon dioxide (CO_2) and methane (CH_4)

Short wavelength heat radiation from the Sun

Sun

Re-radiated long wavelength heat radiation

Without the greenhouse effect Earth would be too cold to support life. However humans are increasing the levels of greenhouse gases in the atmosphere which is warming the Earth too much.

Pollution in the atmosphere

There are certain human activities that increase carbon dioxide levels in the atmosphere, these are:

Using fuel for transportation

Deforestation

Burning fossil fuels in power stations.

Farming and land fill can also increase the levels of methane in the atmosphere.

Acid Rain - When fossil fuels are used sulphur dioxide is produced and when dissolved in water in the clouds produces acid rain.

Acid Rain can have a huge impact on lakes, plants and animals.

Global dimming – when lots of particulates (soot) goes into the atmosphere and reflects the sunlight back up into space so that less sunlight reaches Earth.

Symbols

The following symbols show the different **components** that can be found in an electrical circuit.

- Open switch
- Closed switch
- Lamp
- Voltmeter
- Ammeter
- Resistor
- LDR
- Thermistor
- Variable resistor
- Diode
- LED
- Fuse
- Cell
- Battery

Electric current is when charge (carried by the electrons) flows. In metal wires, electrons move and cause a current. Measured in amperes (A) Charge is measured in coulombs (C)

Potential difference (p.d;) is a measure of how much energy is transferred between two points in a circuit measured in volts.

Ohm's law states that current through a resistor at constant temperature is directly proportional to the potential difference across the resistor

Resistance occurs when electrons move through a circuit, they collide with the ions and atoms of the wires and components in the circuit. This slows down the flow of charge.
Measured in ohms Ω

sections of resistor in a circuit   electron flow

electrons   vibrating atoms
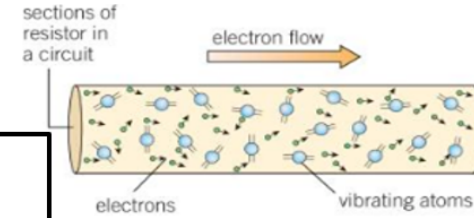
Series Circuit
Same charge/current passes through each component. If the resistance of a component increases the current will decrease. The p.d. is shared by the components. Resistance of the circuit = the total resistance of all components.

Parallel Circuit
Current splits at junctions. Total current = sum of current on each branch. The p.d. is same on each branch as the battery. Resistance in parallel is decreased.

Resistance is constant as current and p.d. are directly proportional
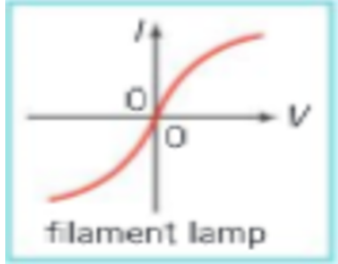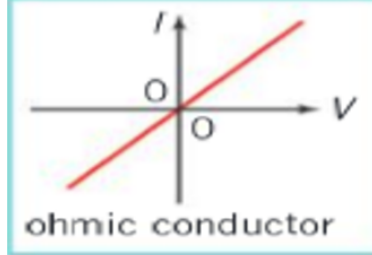
ohmic conductor

Current-potential difference graphs

As current flows through filament, its temperature increases, causing the resistance to increase. An filament bulb is a non-ohmic conductor

filament lamp
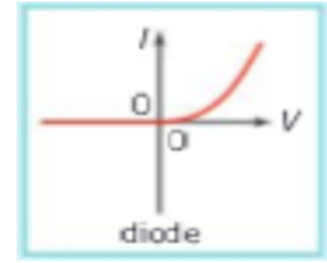
Current flow in only one direction – called the forward direction. Diode is a non-ohmic conductor

diode

Tier 2 Vocabulary
Component
Conduct
Parallel
Series

Tier 3 Vocabulary
Ammeter
Voltmeter
Diode
LED
Cell
Fuse
Thermistor
LDR
LED
Resistor
Ampere
Charge
Coulomb
Current
Potential difference
Electric field
Resistance
Filament
Insulation
Ohmic conductor
Non-ohmic conductor
Electrostatic force
Alternating current
Direct current

charge flow, Q = current, I × time taken, t
(coulombs, C)   (amperes, A)   (seconds, s)

$$\text{potential difference across a component, } V \text{ (volts, V)} = \frac{\text{energy transferred, } E \text{ (joules, J)}}{\text{charge, } Q \text{ (coulombs, C)}}$$

$$\text{resistance, } R \text{ (ohms, } \Omega \text{)} = \frac{\text{potential difference, } V \text{ (volts, V)}}{\text{current, } I \text{ (amperes, A)}}$$

Direct current: (DC) Supplied by batteries and only flows in one direction.
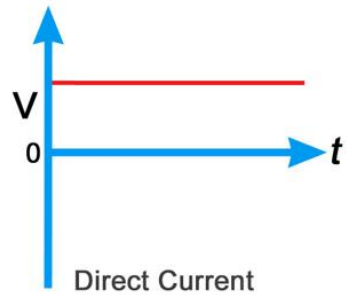
Direct Current

Alternating Current: (AC) Constantly changing direction. UK mains supply is 230V and has a frequency of 50 hertz (Hz)

Zero Crossing

Alternating Current
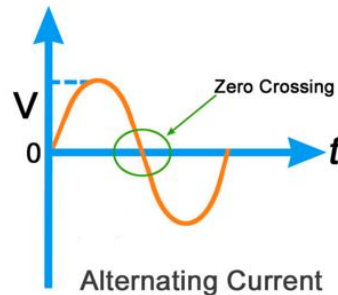
The National Grid:

How electricity gets from the power station to your homes and businesses.
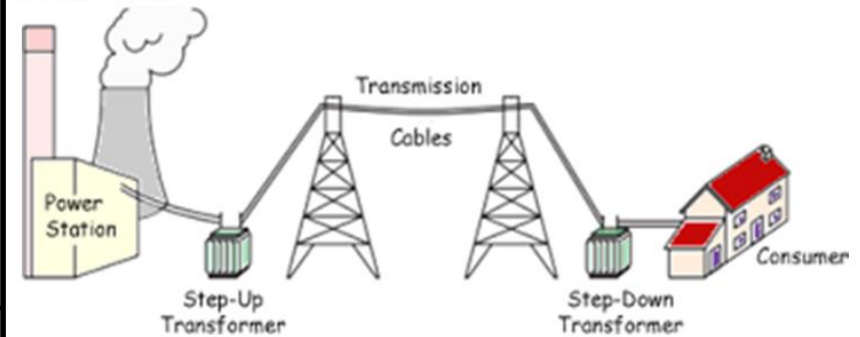
The National Grid is a system of cables and transformers. They transfer electrical power from the power station to where it is needed. Power stations are able to change the amount to electricity that is produced to meet demand.

Step-up transformers – increase the voltage as the electricity flows through the cables.

Step-down transformers – decrease the voltage to make it safe.

Plugs

Neutral wire is BLUE and always 0 Volts.

Live wire is BROWN and 230 Volts.

Earth wire is GREEN/YELLOW and always 0 Volts
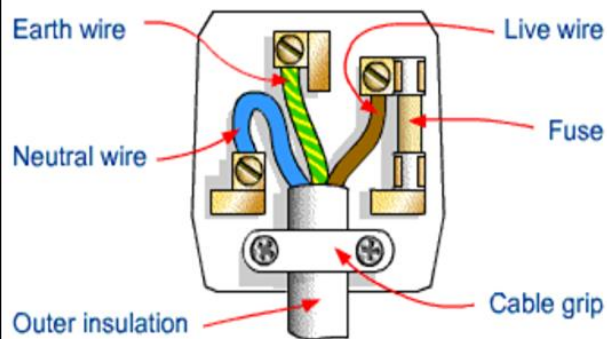
Circuit Breaker:
A circuit breaker is a resettable fuse. These are automatically operated electrical switches that protect electrical circuits from overloading or short circuiting. They detect faults and then stop the flow of electricity.

Cost of Electricity:
electricity is charged per kilowatt hours (kWh)
Energy transferred = power x time   E=Pt
E – energy (kilowatt hours kWh)
P = Power (kilowatt, kW)
T = time (hours, h)

Fuses:
Fuses are a safety feature in many plugs and appliances.
They contain a very thin wire filament.
When the current gets too high, the wire gets hot and melts breaking the circuit.

Spanish

Y9 Summer Term Knowledge Organiser   Unit 5: Una aventura en Madrid – Talking about a trip

Key spellings 5

Learn these spellings, they will be really useful for this unit and you will be tested on them.

1. fue increíble	it was incredible
2. si hace buen tiempo	if the weather is good
3. ¿cuánto es?	How much is it?
4. voy a ir de compras	I'm going to go shopping
5. visité el zoo	I visited the zoo

Mi último día en Madrid / My last day in Madrid

Mi último día en Madrid	My last day in Madrid
Si…	If…
hace buen tiempo/hace mal tiempo	the weather is good/bad
hace frío/hace sol/hace viento	it's cold/sunny/windy
llueve	it rains
voy a…	I'm going to…
ir de compras/sacar fotos/ver un partido	go shopping/take photos/see a match

La casa del tesoro / The treasure hunt

La casa del tesoro	The treasure hunt
¿Adónde hay que ir?	Where do you have to go?
Hay que…	You have to…
ir al estadio Santiago Bernabéu	go to the Santiago Bernabéu Stadium
ir al parque del Retiro	go to the Retiro Park
visitar el Museo Reina Sofía	go to the Reina Sofía Museum
coger el teleférico	take the cable car
comer…	eat…
los churros más ricos del mundo	the best churros in the world
comprar una postal de…	by a postcard of…
dibujar…	draw…
sacar fotos de…	to take photos of…
ver…	to see…
el campo de fútbol más famoso de Madrid	the most famous football field in Madrid
el cuadro más famoso de España	the most famous painting in Spain.
el león más feroz del parque	the fiercest lion in the park
los monumentos más interesantes de Madrid	the most interesting monuments in Madrid

Mi día favorito / My favourite day

Mi día favorito	My favourite day
Mi día favorito fue (el martes)	My favourite day was (Tuesday)
Por la mañana/tarde	In the morning/afternoon
bebí/bebimos horchata	I/we drank horchata
comí/comimos un bocadillo de calamares	I/we ate a fried squid sandwich
compré/compramos una gorra	I/we bought a cap
fui/fuimos a la cafetería	I/we went to the café
hice/hicimos muchas cosas	I/we did many things
monté/montamos en una montaña rusa	I/we rode on a rollercoaster
saqué/sacamos fotos	I/we took photos
vi/vimos los delfines	I/we saw the dolphins
visité/visitamos el parque de atracciones	I/we visited the theme park
Fue increíble/divertido/flipante	It was incredible/fun/awesome
¡Qué miedo/rico/guay!	How scary/tasty/cool!

Key grammar – The near future

Use the near future to talk about what is going to happen

This tense is formed by 3 parts, make sure you have all of them to use it correctly.

1. The present tense of IR (the verb to go)
2. 'a'
3. An infinitive verb (ending in -ar/er-ir)

Voy		ir de compras	I am going to go shopping
Vas		probar un cocido	You are going to try a stew
Va	a	sacar fotos	(S)he is going to take photos
Vamos		tomar el sol	We are going to sunbathe
Vais		ver un partido	You (pl.) are going to watch a match
Van		visitar el museo	They are going to visit the museum

En la tienda da recuerdos / In the souvenir shop

En la tienda da recuerdos	In the souvenir shop
¿Qué vas a comprar?	What are you going to buy?
¿Qué quiere usted?	What do you want?
Quiero (comprar) algo para mi (madre).	I want (to buy) something for my (mum)
Creo que voy a comprar…	I think I'm going to buy…

un abanico	un collar	un llavero	a fan	a necklace	a keyring
una taza	un imán	una camiseta	a mug	a magnet	A t-shirt
una figurita	turrón		a figurine	nougat	

Me gusta…pero prefiero…	I like…but I prefer…
Es…	It is…

barato/a	caro/a	bonito/a	cheap	expensive	pretty
típico	feo/a	útil	typical	ugly	useful
precioso/a	demasiado caro/a		lovely	too expensive	

¿Cuánto es?	How much is it?
Son…euros	It is…euros
No, gracias	No, thanks.
Perfecto, gracias	Perfect, thanks

Spanish Y9 Summer Term Knowledge Organiser Unit 6: Repaso y habilidades claves - Revision and key skills

Key spellings 6

Learn these spellings, they will be really useful for this unit and you will be tested on them.

1. después	afterwards
2. además	furthermore
3. creo que	I think that
4. por ejemplo	for example
5. sin embargo	however

Writing skills

- Use connectives like **y (and), pero (but), también (also)** and **además (furthermore)** to extend your sentences, link them together and make them more interesting.

- Use sequencers to organise your writing: **primero (first), luego (then), después (afterwards), más tarde (later).**

- Remember to add your opinions using phrases like **me gusta (I like), and no me gusta (I don't like).** Don't forget to justify your opinions using **porque… (because…).**

- Add adverbs of frequency to your work like **todos los días (every day)** and **a veces (sometimes).**

Listening skills

- When taking notes as you listen, try to write down key words.

- Focusing on the five Ws (Where? Who? What? When? Where?) will help you answer questions when listening.

- Predicting what you are going to hear is a very useful skill.

- Sometimes speakers don't say exactly what they are talking about and you have to work it out from clues.

- Use TRAPS (below) to help you pick out important details.

Palabras muy frecuentes   High-frequency words

casi	almost, nearly	hasta	until
cada	each, every	ahora	now
todo / toda / todos / todas	all	hoy	today
mucho / mucha / muchos / muchas	a lot (of)	ayer	yesterday
		anoche	last night
primero	first	para	(in order) to, for
luego	then	creo que	I think / believe that
después	afterwards	por eso	so, therefore
finalmente	finally	sin embargo	however
por lo general	in general	donde	where

SKILLS

Remembering **TRAPS** will help you to listen out for important detail:

T = Tense/Time frame
R = Reflect, don't Rush!
A = Alternative words/synonyms
P = Positive or negative?
S = Subject (person involved)

To understand **when** something happens, **T** is important. Listen for time markers, e.g. **el fin de semana que viene,** but also for verb forms. Are speakers using the present or the near future tense?

Reading skills

- It's a good idea to start by skimming a text and reading for gist, without trying to understand all the details.

- You don't need to understand every word in a text, scan it for the specific information you need.

- This means that you don't need to look up every word. Ask yourself if you need to know what a word means to answer the question. If you do, look it up. If not, move on.

- Use the four Cs to understand a text in more detail and to try to work out the meaning of new words.

SKILLS

Using the four Cs when reading for detail

Sometimes you have to understand the detail of a text. To work out the meaning of new words, use the four Cs!

- **Clues** (e.g. questions in English)
- **Cognates** and near-cognates
- **Context** of the sentence/text
- **Common sense!**

Speaking skills

- Use the advice in the writing skills box to make your spoken sentences more interesting and extended.

- Learn Spanish question words to help you understand what is being asked of you.

- If you don't understand a question, say **"repite, por favor".**

- Practise the pronunciation of difficult words and use intonation in your voice to match the tone of what you're saying.

Question words

Pay close attention to the question words when translating questions.

¿Cómo?	How/What?	¿A qué hora?	At what time?
¿Qué?	What?	¿Por qué?	Why?
¿Cuál?	Which/What?	¿Quién?	Who?
¿Dónde?	Where?	¿Con quién?	With whom?
¿Cuándo?	When?		

Design and Technology Specific Language and Terms	
Design Brief	A statement of intent for a project, created with an end user in mind. A design brief should primarily focus on the results and outcomes of the design.
Specification	A list of rules to follow when designing, a specification point is the result of research into the requirements of a project
Influenced by…	To use existing designers, media, products, time periods etc. to create, change and adapt a design. To be influence by.
Design Movement	A period in time where a certain style was prevalent. (see examples below)
Initial Ideas	The creation of multiple ideas, considering different ways of fulfilling the design brief
Development	To work on, add to, an improve an idea via ongoing research, and seeking further influence or understanding of an outcome.

Example of developing a design idea

Design Movements Timeline
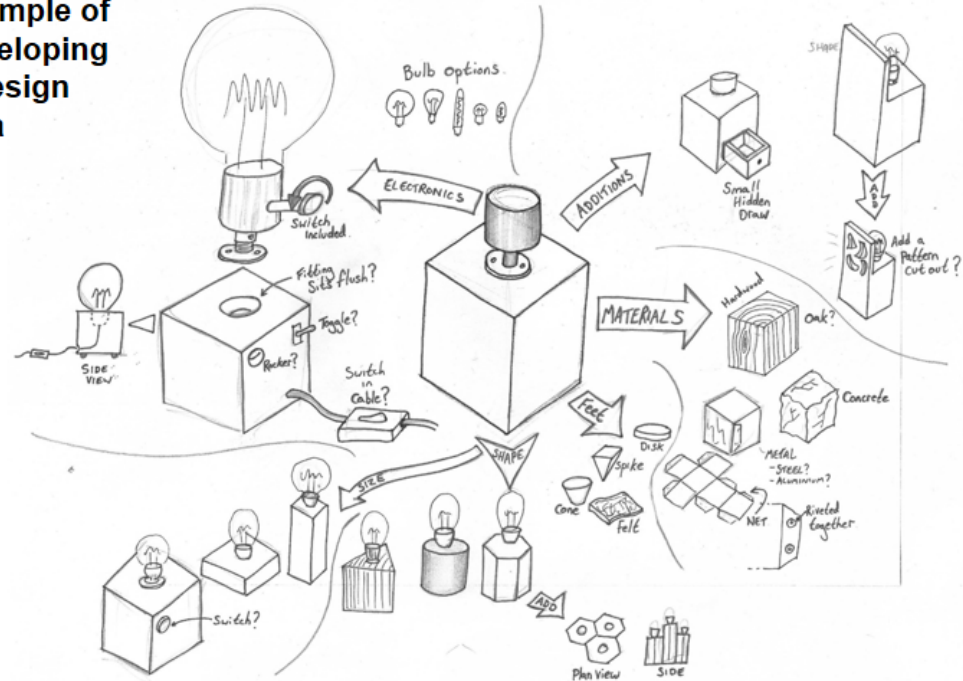
DESIGN MOVEMENTS

Design movements are periods in time where a certain style of design was prevalent, It's important to know about these movements as they provide a starting point to base your product on or just provide inspiration.

Organic design is a style of product design which takes as its starting point organic, flowing natural forms. Undulating lines, dynamic curves, and powerful arches stand in contrast to the geometric, functional style as represented by functionalism

Art Deco is a style of architecture and design that first appeared in France just before World War I. Art Deco influenced the design of buildings, furniture, jewellery, fashion, transport, and everyday objects.
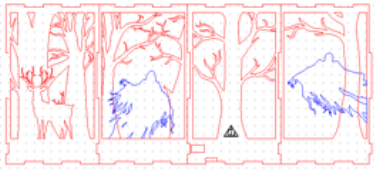
Postmodernism is one of the most controversial movements in art and design history. Over two decades, Postmodernism shattered established ideas about art and design, bringing a new self-awareness about style itself.

An Initial ideas page

Design and Technology Specific Language and Terms	
CAD	Computer Aided Design
Isometric Drawing	An isometric drawing is a type of 3D drawing that is set out using 30-degree angles. It's a type of drawing in which the same scale is used for every axis, resulting in a non-distorted image.
Oblique Drawing	A item is drawn in 2D in the correct proportions, it is then forced into 3D by projecting lines out at 45 degrees.
Orthographic Drawings	2D drawings drawn in detail and to scale. Orthographic projections provide 3 views, front, side and plan.
Working Drawing	An accurate drawing providing all information required to make a product. Usually presented as an isometric or orthographic drawing.
Parts List	Goes with a working drawing and breaks a design down into its individual parts, stating what it is to be made from and the quantity required of each part
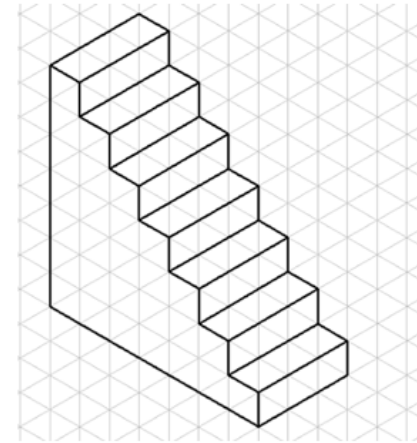
Isometric Drawings
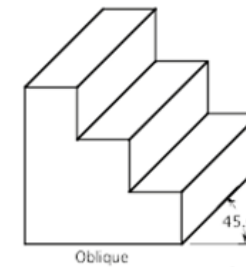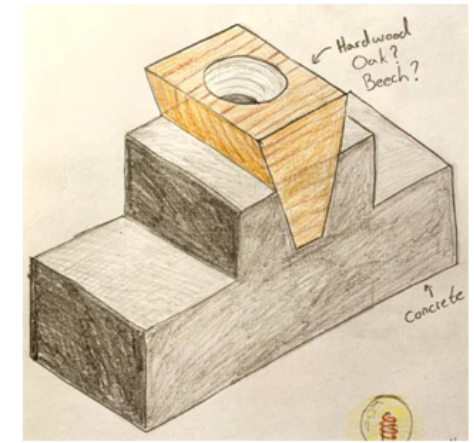
Oblique Drawing
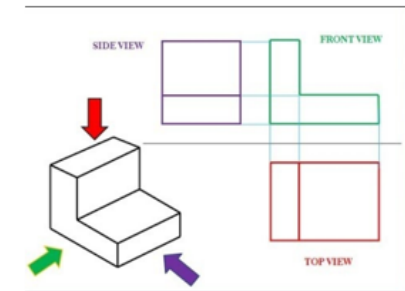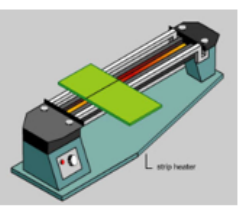
Orthographic Drawing

Working Drawing

Year 9 – Knowledge Organiser 2020 – **Design & Technology – TOOLS/MACHINERY**

HAND TOOLS

	Bench Hook
	Coping Saw (timber/plastic)
	Tennon Saw (timber)
	Hacksaw (metal)
	G Clamp
	Woodwork Vice
	Hand Clamp
	Glass Paper

MACHINERY

	Milling machine	• Removes material a thin layer at a time • Can be used to ensure an absolutely flat surface. • Very accurate
	Centre Lathe	• Used to 'turn' material (rotates) • A tool or bit is used to shape the rotating material • There are wood and engineers (metal) lathes
	Buffer / Polisher	• Used to polish metal or plastics to a high shine
	Disc Sander	• Rotating abrasive disc removes material • Used for timber and plastics
	Strip Heater	• Used to apply heat along an area of thermoforming plastic allowing it to be bend along a line • Process is called line bending
	Pillar Drill	• A rotating drill bit can be lowered into a work piece to create holes • Work musk be secured to the table.

CUTTING

	Scroll Saw (Hegner)	• Thin blade allows for intricate curves to be cut in timber a plastic sheet material
	Hand Held Router	• Spinning cutting tool removes wood as in is move along a surface • Used to create slots, grooves or fancy edges
	Jigsaw	• Used to make straight or curved cuts in all materials • Blades and speed can be changed to suit material
	Bandsaw	• Blade is one continuous flexible loop • Mainly used for timber but blades can be changed to cut plastics • Can cut straight or curved lines
	Table Saw	• Circular blade rotates through the table surface • Used to make straight cuts only • Mainly used to cut boards to size
	Laser Cutter	• Can be used for multiple thin materials • Requires designs to be created on a computer first

Shaping Plastics

	Vacuum Forming	• A mould is placed onto the vacuum bed • A thermoforming sheet or film (usually HIPs) is clamped above the bed and heated until soft • Bed is lift into the heated plastic • All air is sucked out creating a vacuum, pulling the plastic over the mould • Moulded plastic then cools and becomes rigid.
	Injection Moulding	• Molten material is forced into a mould • Tool steel moulds have the negative shape within them. • Used to create items like; plastic buckets and school chairs.

Bending Materials

	Sheet metal folder	• Used to shape aluminium and tin • Flat sheet material is marked up and bent one fold at a time. • Joins can be riveted, soldered, brazed etc.
	Strip Heater	• Process is called Line Bending • A heating element softens a thermoforming plastic (acrylic) along a line. • This can then be bent to shape and held in place until cooled
	Lamination	• Woods can be bent by laminating • Thin strips are glued together and held in a jig to keep them in the desired shape. • Once set the item is removed from the jig and trimmed to size.

Two leaves cast in pewter

Health & Safety

Design and Technology Specific Language and Terms	
Health and Safety	Anything to do with a person's wellbeing in any given situation. From sitting at a computer for long periods to operating machinery.
Risk Assessment	A document that considers all risk to a person/s carrying out a task, and all control measure put in place to minimize or remove risk to health, this could be training, following certain rules or using PPE
PPE	Personal Protective Equipment Googles, aprons, dusk masks, gloves
Extraction	Can be dust extraction when using machinery or fume extraction when gluing or painting.

Casting

	Die Casting	• Used to cast metals or thermoforming plastics • Material is melted and pours into a mould • Once cooled it can be removed and any seems tidied up • Thermosetting plastics are mould by mixing two part which set through a chemical reaction. • Often referred to as Resin

COMPUTER AIDED MANUFACTURE

MACHINERY	
	Laser Cutter
	3D Printing
	Vinyl Stickers

| Advantages	Disadvantages
Accurate to low tolerances	Expensive to set up
Quick – rapid prototyping	Requires Specialist Training
Multiples can be produced easily	Job loss to automation

Interlocking laser cut toy in plywood

Sticky back vinyl cut to shape

Materials suitable for laser cutting:
Acrylic – Thermoforming Plastic
MDF – Manufactured Board
Plywood – Manufactured Board
Card/Paper – Paper/Board
Felt – Fabric

Card/Paper

Felt

Acrylic

MDF

Plywood
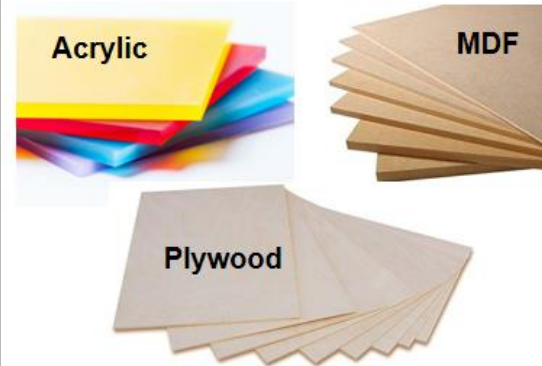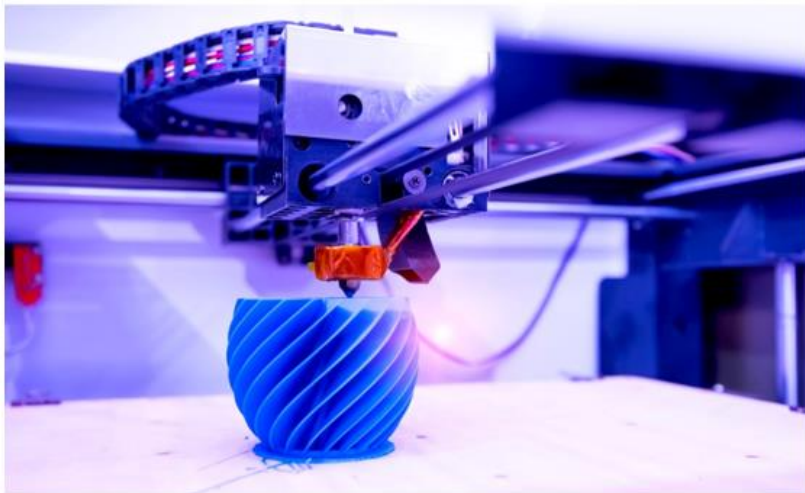
Some materials such as **glass** can be engraved but not cut.

3D printer using thin layers to create a 3D shape

Garage Keys

Black = Laser engrave
• Laser moves quickly at a low power

Red = Laser cut
• Laser moves slowly at high power

Other colours can be set up and used as required

Notes Page