BRISTOL METROPOLITAN ACADEMY

Knowledge Organisers 2024-25

Year 8 – Term 6

Monday 2nd June	Week B
Monday 9th June	Week A
Monday 16th June	Week B
Monday 23rd June	Week A
Monday 30th June	Week B
Monday 7th July	Week A
Monday 14th July	Week B

Please note: Maths homework will be on an online platform for this term. It will be set and checked weekly separately from the timetable.

Complete your homework on the night stated e.g. if it is a Monday Week A you will complete ICT/DT

	Week A	**Week B**
Monday	ICT/DT	MFL
Tuesday	English	English
Wednesday	Science	Science
Thursday	History	Geography
Friday	RS	Music/Art

Contents

This Knowledge Organiser is to help you see the key information for each subject for this term. You can use this to help you both with homework and with revision, supporting your learning at home. In the table below you will find the instructions for each subject to be completed on the correct day.

Subject	Tasks
Maths	Homework question tasks/sets will be set weekly on an online platform. You will have one week to complete this online, before it is checked for competition and the next set is published.
Science	For term 1 this will be directed by your classroom teacher. It could involve an online platform too.
English	Using the separate question booklet, divide your homework book page in half length ways, write the questions out on the left hand side. First, attempt to answer the questions from memory/your own knowledge. Then use your knowledge organiser booklets to check your answers and fill in the missing ones.
MFL	Find the correct date in the KO and the question booklet. With the list of 10 key words for that week, complete the look – say - cover – write – check method in your homework book. Complete this process for each word/phrase 4 times each.
Geog/Hist/RS/ DT/Computing	Same process as outlined for English above. DT and ICT/Computing have 5 questions and not 10.
Music/Art	For music and art, you will have two practical tasks to complete each term for each subject. These will be found in the question booklets and will be checked by you classroom teacher.

At the back of this booklet, you will find: Sentence starters, a history chronology, DT sentence starters, a periodic table, maps of the world, subject websites, a RAG sheet and a timetable.

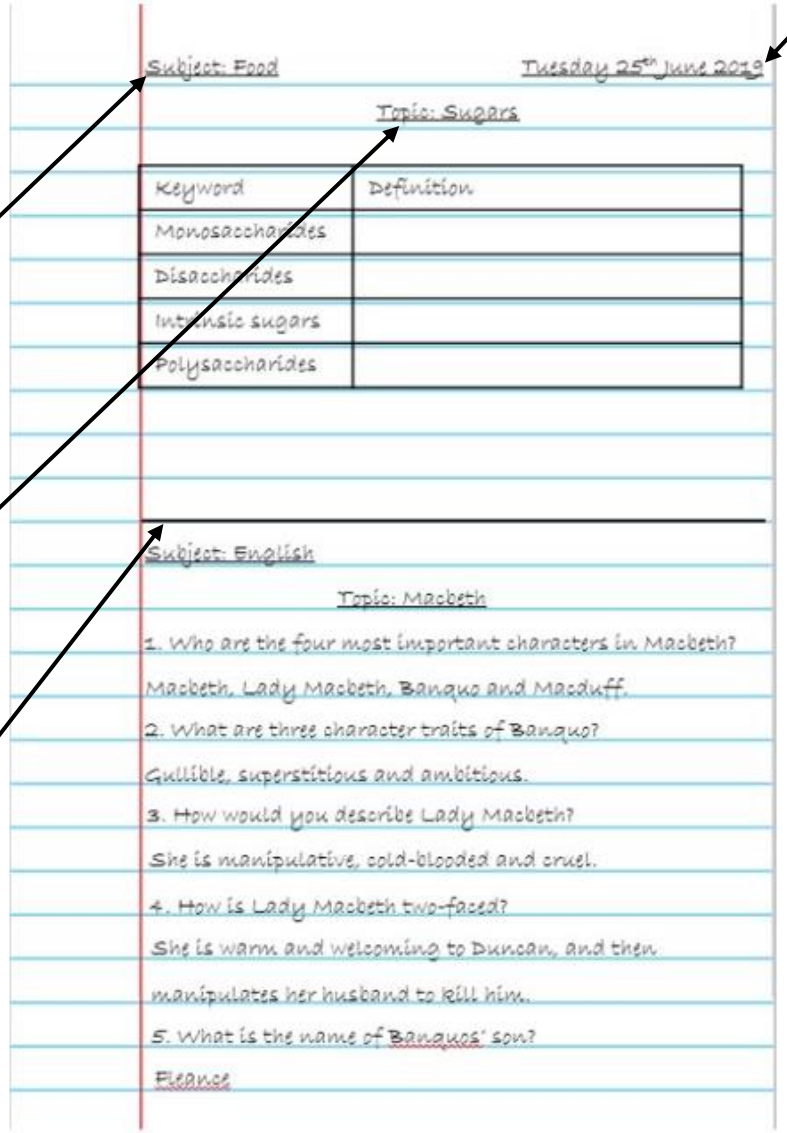
How to present your homework:

Date written fully on the right-hand side of the page and underlined. This should be the day you complete the homework.

Subject written on the left-hand side of the page and underlined.
For example: Food

Topic written on the centre of the page and underlined.
For example: Sugars

One single straight line between both pieces of homework.



Subject: Food — Tuesday 25th June 2019

Topic: Sugars

Keyword	Definition
Monosaccharides	
Disaccharides	
Intrinsic sugars	
Polysaccharides	

Subject: English

Topic: Macbeth

1. Who are the four most important characters in Macbeth?

Macbeth, Lady Macbeth, Banquo and Macduff.

2. What are three character traits of Banquo?

Gullible, superstitious and ambitious.

3. How would you describe Lady Macbeth?

She is manipulative, cold-blooded and cruel.

4. How is Lady Macbeth two-faced?

She is warm and welcoming to Duncan, and then manipulates her husband to kill him.

5. What is the name of Banquos' son?

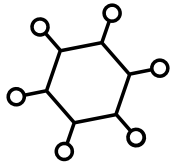
Fleance

Home Learning Strategies to help you revise

Brain Dump

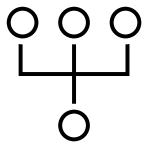
Write down everything you know about o certain topic on a page. Use your KO to add extra notes in a different colour.

Mind Map



Condense a topic showing the important links and connectors between key parts. Use your KO to add in extra notes.

Diagram



Draw a clear diagram for a subject including labels and key features. Make sure you use correct vocabulary and spellings.

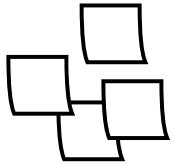
Vocabulary

Learn the key words associated with a topic and commit the word and spelling to memory. Test yourself or ask someone else to test you.

Retrieval Quiz

Write key questions about a topic as well as the answers. Use the content of the KO to help you. Check to see if you can remember the answers without looking.

Compare



Complete a comparison table showing two different sides of a topic. Can you use it to create an argument for one viewpoint?

Year 8 Our Environment

Keywords:

Climate Change

Graffiti

Extinction

Environment

Habitat

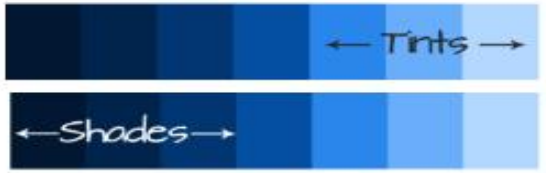
Street Art

Content: In this project you will develop knowledge of environmental issues.

Understand-what inspired artists to create their work and how to critically analyse their work.

Develop skills- in observational drawing, colour theory, painting and visual communication.

Outcomes- Art works inspired by environmental issues and the Artists you have studied.

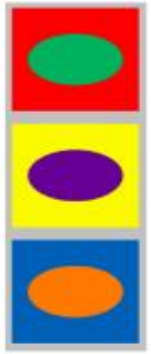


Andy Warhol's "Endangered Species" series includes 10 silkscreen prints. The animals where listed on the endangered at the time they were made in 1983. Andy Warhol made these prints to raise awareness about the endangered species. Andy Warhol is a famous artist from the Pop Art movement. He used images found in popular culture and used an industrial printing method to make his work .

ARTISTS

NeverCrew are a Swiss based street artist duo; Christian Rebecchi and Pablo Togni. The mural above 'Exhausting Machine' was created for the Vancouver Mural Festival in 2016. Nevercrew's art work explores the issues of climate change and pollution and the effect it is having on nature. You can find more information about their work at their website. https://nevercrew.com/about

In colour theory, a **tint** is a mixture of a colour with white, which reduces darkness, while a **shade** is a mixture with black, which increases darkness.



Complementary colours are pairs of colours that contrast with each other more than any other colour, and when placed side-by-side make each other look brighter.

Computing: Term 6: Spreadsheets

Keywords:

Cell : An individual spreadsheet box where you enter data.
Cell reference : Names of individual cells (A5 for example).
Chart : A graphical way of displaying data.
Column : Cells that go down the spreadsheet page.
Model: : Predicts and investigates how real-life devices or processes might behave in different situations.
Data : Values, typically letters or numbers.
Formula : Makes automatic calculations that update when the data does.
Range : Set of cells next to each other.
Row : Cells that go across the spreadsheet page.
Worksheet : An individual sheet

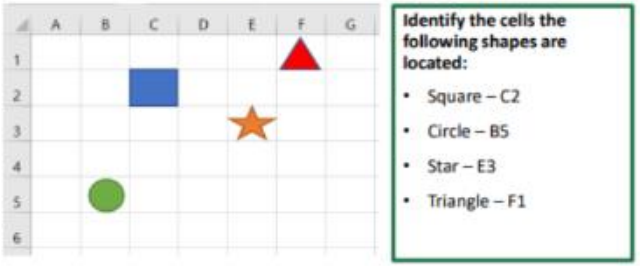
Operator	Explanation
=	Equal to.
>	Greater than.
<	Less than.
>=	Greater than or equal to.
<=	Less than or equal to.
<>	Less than or greater than.

Formula	Explanation
=A7+B7	Adds data in cell A7 with data in cell B7.
=D4-J1	Subtracts the data in cell J1 from the data in cell D4.
=C5*I9	Multiplies the data in cell C5 with the data in cell I9.
=E6/T7	Divides the data in E6 with the data in T7.
=SUM(F4:F12)	Adds up all the data from cells F4 to F12.
=AVERAGE(H2:R2)	Works out the average of the data between cells H2 and R2.
=MAX(A6:A34)	Shows the maximum value across the range of cells.
=MIN(C4:K4)	Shows the minimum value across the range of cells.

Advantages of using Spreadsheets:

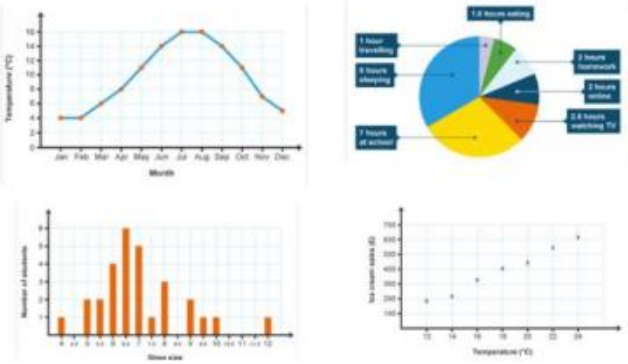
- They can simulate real life events safely.
- Formula will automatically update the result of a calculation when data is amended.
- Data can be presented using charts & graphs.
- You can carry out "what if?" investigations to see how small changes affect other things. For example, a grocer could increase his prices to see the effect on sales.

Cell Referencing



Graphs:

Line Graph
To show a change over time.
Pie Chart
To show the individual parts that make up a whole.
Bar Chart
To compare things that aren't directly related.
Scatter Graph
To look for a pattern or link between two sets of data.



Using stimuli to develop ideas

There are a wide range of **stimuli** to choose from, from which a **devised** work can be created. These include:

- pictures
- poems
- music
- articles
- artefacts
- paintings

It is important to allow a limited time frame to discuss responses to the **starting point** or stimulus. Ask:

- Who are the **target audience**?
- What should be **said** to them?
- What should be **shown** to them?
- How should they **feel** by the end of the drama?

From the very start of the process, ideas should be tried out practically. For example:

- create six **tableaux** immediately - this could lead to other ideas
- write spontaneously for two minutes in response to the starting point
- share ideas
- **improvise** a two-minute scene without thinking or planning - this could generate new ideas
- set tasks
- research the topic - get images, facts, statistics, interviews, etc
- explore real-life events and use spoken or written stories from people - this may lift practical work to a higher standard.

When thinking about character and body, consider the following points:

- What is the style of the piece being created?
- How might the character stand and move?
- What **gestures** and **mannerisms** do they employ?
- How can they use **posture** and body language to physically tell the narrative?
- How will they walk around the space?
- Experiment with levels, lifts and **proxemics**.

Ideas to consider might include:

- experimenting with time frames through use of **flashback** and **flashforward**
- performing a range of roles through **multi-role play**
- trying out **choral speaking** as a group to get across important messages
- **direct address** and **narration** to your audience so you create an extra impact on them
- trying a moment in **slow motion** or at high speed to contrast with other parts of the piece

Do not underestimate the importance and impact of stillness and silence - the inclusion of these can have varying effects on an audience and work especially well to add tension or impact.

Teamwork

It is important to work together as a team and commit clearly to that group:

- turn up on time
- be positive
- say yes to ideas
- respect other opinions
- take it in turns to lead a warm-up or direct a section of the piece

At the very beginning of the devising, things will not be perfect. Remember the bigger picture and be positive, knowing that details can be fine-tuned later on. Groups that are always evolving and experimenting with their ideas can experience more success with their work.

Drama

Other ideas to try out might include:

- changing the order of events to make the **structure** more interesting
- trying out **monologues** for different characters
- using music and devising a short section of **mime** to accompany this
- experimenting with your use of space and **levels** within the performance space
- doing something at the same time in **synchronisation** to emphasise the scene

It is important to be willing to let go of things, make changes and keep on researching. It could help to listen to others, step out of the scene and watch it with the eye of a critical friend. Other ideas include:

- Trying some **off-text improvisation**, placing the **characters** in a different situation, eg what would they be like in ten years time, at work or on holiday?
- Trying the play in reverse or swapping characters over to see them through another pair of eyes.
- Re-enacting the **sub-text** only - what is it that's not said and how can this be emphasised?
- **Hot-seating** the characters - if this is done while walking around the space, it places less pressure on the person being asked the questions and gives less time to overthink answers.
- Filming and watching it back to make improvements - can everything be heard and seen, does it make sense and can the audience understand what is taking place?
- Trying out alternative endings - what difference do they make and could two or more be included to really make the audience think?

Working as a team

Everyone in a production has a clear role, and with that clear **responsibility**. Everyone needs to know what they should be doing, as well as how their role fits in with the rest of the team and the whole production. For this, good communication is essential. In the early stages of the production cycle, research can be done into particular roles, which could include watching videos or reading about a specific topic, going to live theatre performances, or developing a particular skill. Each member of the production also needs to be aware of all **health and safety considerations** to ensure that everyone, including the audience, is kept safe.

Also, try out other subtleties, such as:

- pause
- silence
- emphasis
- chanting
- rapping
- whispering
- rhymes

How can a piece be enhanced with extra voice work?

- experiment with **narration**
- narrate actions in the **third person**
- **choral speaking** can be very effective when it's done well
- experiment with **soundscapes** to create atmosphere, repeating different sounds or words in unison

Blocking

The performance can then be worked through scene by scene to establish where actors should be on the stage and when, known as **blocking**. The main focus should be:

- the use of space
- the set
- how to establish mood and atmosphere

Drama Year 8 Term 5 & 6 Knowledge organiser

MET

Year 8 D&T – Night Light Project

A is for **Aesthetics**

C is for **Cost**

C is for **Customer**

E is for **Environment**

S is for **Size**

S is for **Safety**

F is for **Function**

M is for **Material**

Analyse the Dinosaur Night Light by using ACCESS FM

You can use ACCESS FM to analyse existing products, write a specification, annotate designs and to evaluate the final outcome!

Remember to consider the sustainability of your design – try using the 6 R's!

Pillar Drill

File

Fret Saw

Soldering Iron

Line Bender

Practice your tonal drawing skill here

Develop Ideas with Sketches

1) 'Freehand' means drawing without using any equipment (except a pencil or pen).
2) You can combine 2D and 3D sketches to explain details.
3) And you can annotate your sketches (add notes) to explain details further, e.g. describing the materials and processes you'd use.

Practice your isometric drawing here

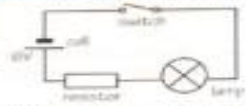
Isometric Drawing Shows Objects at 30°

1) Isometric drawing can be used to show a 3D picture of an object.
2) It doesn't show perspective (things don't get smaller in the distance), but it's easy to get dimensions right.
3) There are three main rules when drawing in isometric:
   - Vertical edges are drawn as vertical lines.
   - Horizontal edges are drawn at 30°.
   - Parallel edges appear as parallel lines.

This drawing is been done on isometric dot paper. You could use plain paper and a 30°/60° set square instead.

Electrical Systems Involve Circuits

1) All electrical systems need to have a complete circuit to make them work. Here's a simple circuit:



The circuit isn't complete yet — there's a gap at the switch. When you press the switch down you make a complete circuit. An electric current flows and the lamp comes on.

You can draw diagrams of electrical circuits using symbols to represent the components.

2) The materials you use in a circuit have to be conductors — they need to let electricity flow through. E.g. copper is used for the wire that joins the components because it's a good conductor and is ductile.
3) Insulators (e.g. PVC) don't let electricity through, so they're used to coat the outside of wires.
4) Voltage from a power cell (a battery) or the mains pushes the electric current around a circuit.
   - Mains power is used for non-portable products like fridges and televisions.
   - Batteries are used in portable products. There are disposable batteries and rechargeable ones.
   - Rechargeable batteries are more expensive than disposable batteries, but can be cheaper in the long run as you don't need to keep replacing them. They're built in to some products, e.g. mobile phones.
5) Resistors are used to reduce the current in a circuit so you don't damage delicate components (e.g. the lamp in the circuit above). Resistance is measured in ohms (Ω). A larger resistance means less current flows.

Colour-coded stripes show the resistance.

Acrylic

polymethyl methacrylate (PMMA) is available in a variety of colours. It is a hard, rigid material that weathers well.

CAD = Computer Aided Design
CAM = Computer Aided Manufacture

Night Light Circuit Diagram

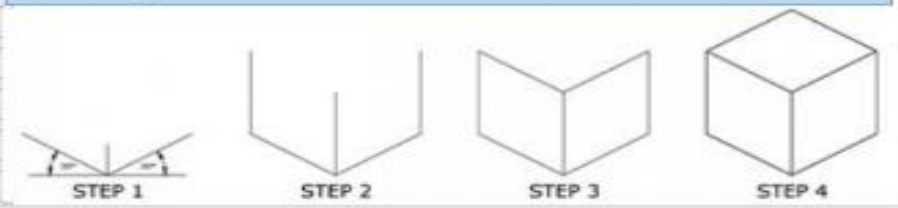
Use modelling to improve your design

Modelling is a good way to solve problems with your design. You can make models using card as it's cheap and easy to work with.
When modelling, try out different aspects of your design. For example, you could model just one part of the product separately, to check it works, before going on to the rest.

Test and evaluate each model

After you've made each model, do some tests to check that it's how it should be. Get some potential customers to try it out and give you feedback too.

1. You'll probably find there are some things that don't work out quite how you'd hoped. Write down what he problem is, suggest how to fix it and try out another model.
2. Record how the design develops – take photos of your models.
3. You should evaluate each model, against the design by considering the strengths and weaknesses.



English - FACE

Writer's Methods	
Acts	Acts are large portions of a play.
Scenes	Scenes are smaller sections of a play. Scenes usually change when the play's setting changes or the focus of the story changes to a new set of characters.
Prologue	a preface or introduction to a literary work. In a dramatic work, the term describes a speech, often, in verse addressed to the audience by one or more of the actors at the opening of a play
Epilogue	Is the final speech in a play.
Stage directions	provide instructions for the technical aspects of a production, including descriptions of characters' appearances and their movements onstage as well as lighting, sound, scenery, and props.
Chorus	a group of actors who described and commented upon the main action of a play with song, dance, and recitation.
Characterisation	Is the representation of characters (persons, creature, or other beings) in narrative or dramatic works.
Plot	The narrative or story in a literary piece.
Rhetoric (ethos, pathos, logos)	the art of effective or persuasive speaking or writing, especially the exploitation of figures of speech and other compositional techniques.
Rhyme	correspondence of sound between words or the endings of words, especially when these are used at the ends of lines of poetry.
Rhythm	a strong, regular repeated pattern of movement or sound.
Imagery	An image created by words so a reader can picture something in their head
Sonnet	Traditionally, the sonnet is a fourteen-line poem written in iambic pentameter, employing one of several rhyme schemes, and adhering to a tightly structured thematic organization.
Speech	a formal address or discourse delivered to an audience.
Article	a piece of writing included with others in a newspaper, magazine, or other print or online publication.
Blog	Is as frequently updated and used like a diary.
Tone	Feelings or emotions conveyed.

Context	
Modern	relating to the present or recent times as opposed to the remote past.
Urban environment	area is the region surrounding a city.
School setting	When something i.e. a story is set in a school
Teenage experience	The common occurrences and events that most teenagers experience

English - FACE

Big Ideas	
Friendship	the emotions or conduct of friends; the state of being friends.
Love	an intense feeling of deep affection.
Fate	the development of events outside a person's control, regarded as predetermined by a supernatural power.
Freewill	the power of acting without the constraint of necessity or fate; the ability to act at one's own discretion.
Justice	just behaviour or treatment.
Crime	an action which constitutes an offence and is punishable by law.
Responsibility	the state or fact of having a duty to deal with something or of having control over someone.
Resilience	the capacity to withstand or to recover quickly from difficulties; toughness.
Identity	the fact of being who or what a person or thing is.
Prejudice	Preconceived opinion that is not based on reason or actual experience.
Vanity	excessive pride in or admiration of one's own appearance or achievements.
Appearances	the way that someone or something looks or is perceived
Beauty	a combination of qualities, such as shape, colour, or form, that pleases the aesthetic senses
Peer pressure	influence from members of one's peer (one that is of equal standing with another) group.
Register	The tone a writer uses by word choices

Language	
Playscript	is the story that has been written for actors to perform.
narrators	a person who narrates something, especially a character who recounts the events of a novel or narrative poem.
Verse	writing arranged with a metrical rhythm, typically having a rhyme.
Setting	The place that a story is set or based.
address to the audience (4th wall)	an invisible, imaginary wall separates actors from the audience.
Poetics	the art of writing poetry.
Connotations	The ideas and feelings linked or associated with words or images.
Dialogue	Speech in a piece of literature.

Why do we cook food?

The application of heat in the preparation of a food or mixture may:
improve digestibility;
improve appearance, flavour, odour and texture;
increase the availability of nutrients;
prevent spoilage;
increase keeping qualities.

Heat Exchange
As a food is heated, its molecules absorb energy and vibrate more vigorously. The faster they move, the more the temperature of the food rises. If heat is removed, the molecules become less active, reducing the foods temperature.

Heat can be exchanged in three ways:
- conduction;
- convection;
- radiation

Factors that affect food choice

Coeliac – cannot eat products containing gluten.
Lactose intolerance – the body can't digest the sugar lactose in dairy products.
Vegetarian: No meat in the diet
Vegan: No products from animals in the diet e.g. meat, milk or honey.
Religion :
Islam: Requires Halal meat, no alcohol, no pork
Judaism: Requires Kosher food, no meat and dairy together, no pork
Hinduism: No beef

Micro-nutrients

Vitamins and minerals are essential nutrients that your body needs in small amounts to work properly.

Fat-soluble vitamins
Fat-soluble vitamins (vitamin A, D, E and K) are mainly found in:
animal fats, vegetable oils, dairy foods, liver and oily fish
While your body needs these vitamins to work properly, you don't need to eat foods containing them everyday.

Water-soluble vitamins
Water-soluble vitamins (vitamin C, the B vitamins and folic acid) are mainly found in:
fruit and vegetables, grains, milk and dairy foods
These vitamins aren't stored in the body, so you need to have them more frequently.
If you have more than you need, your body gets rid of the extra vitamins when you urinate.

Minerals
Minerals include calcium and iron amongst many others and are found in:
Meat, cereals, nuts, fish, milk and dairy foods, fruit and vegetables

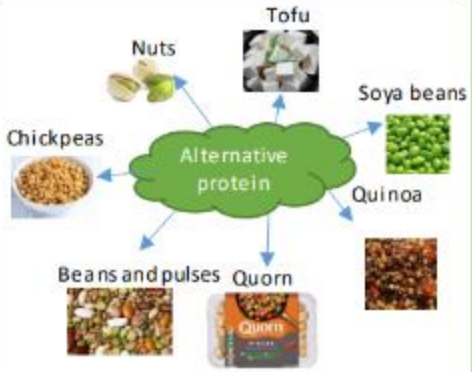
Minerals are necessary for 3 main reasons:
Building strong bones and teeth
Controlling body fluids inside and outside cells
Turning the food you eat into energy

Micros

Macros

Alternative protein

Proteins are known as the building blocks of life: In the body, they break down into amino acids that promote cell growth and repair. (They also take longer to digest than carbohydrates, helping you feel fuller for longer and on fewer calories—a plus for anyone trying to lose weight.) You probably know that animal products—meat, eggs, and dairy—are a good source of protein.



Food Poisoning

Food poisoning is a disease caused by eating a spoiled or contaminated food. Such food may contain certain microorganisms, toxins or enzymes.

Symptoms of food poisoning:
- Stomach pains and cramps
- Nausea and vomiting
- Diarrhoea
- Fever
- Shivers

Vegetarians and **vegans** don't consume meat so instead they use protein alternative products which are manufactured in order to provide protein in a diet and protein rich foods.

Protein complementation is when two LBV **proteins** are eaten together. Examples of protein complementation's are: hummus with pitta bread; nut roast made from a variety of nuts and seeds; vegetable curry and rice; lentils soup and wholemeal bread; baked beans on toast.

LBV proteins- . Foods that are deficient in one or more of the essential amino acids are said to have a **low biological value (LBV)**. Foods originating from plants (cereals, nuts, seeds, lentils, beans, pulses)

Functions of Eggs

Setting and thickening (coagulation): Eggs will set when cooked. This is shown when you make a quiche or an egg custard.
Enriching: Eggs add nutritional value to a dish. This is shown when you make egg fried rice.
Raising agent: When whisked, eggs can hold air and become a raising agent. They can make a mixture light in texture, e.g. Chocolate éclairs.
As a glaze and to add colour: Beaten egg can be used as a glaze which turns golden brown on heating. An example is glazing sausage rolls with egg before cooking to give a golden brown finish.
Aeration: Eggs can be whisked to hold air and form a foam. The protein in the egg white becomes stretched and holds the air bubbles. This is shown in making meringues or a whisked sponge. When the meringues or whisked sponge are cooked the protein sets and hardens.

Food Spoilage

Cross- contamination

Cross-contamination means that bacteria, toxins or food particles were transferred to a food product.
Cross-contamination can cause food poisoning and allergic reactions.
Anaphylactic shock is a life-threatening reaction of the immune system to an allergen.

Food can become contaminated from:
- ❑ Waste food and rubbish
- ❑ Pest and rodents
- ❑ The cook's hand
- ❑ Work surfaces and equipment
- ❑ Other contaminated foods, including high-risk foods.

Most common allergens:
- ❑ Nuts
- ❑ Fish and seafood
- ❑ Milk
- ❑ Eggs

Signs of Food Spoilage- Many species of microorganism and some enzymes can cause food spoilage.

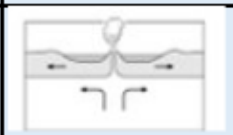
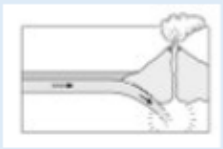
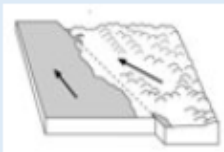
	Bacteria	Yeast	Mould	Enzymes
Food Spoilage	The bacteria Clostridium botulinum produces a toxin which causes meat preserves to bulge. Bacteria can also make meat products look slimy and green in colour.	Ferments sugar in juices and beverages, making them sour, fizzy and foamy. 	Create green, white or black coat on food products such as bread, grapes, tomatoes and jams. 	Turns bananas, apples, potatoes and other foods brown. 

Key words
Microorganism- a very small living bacteria.
Toxins- poison of plant or animal origin, especially one produced by or derived from microorganisms
Preserves – something in its original state
Ferments – The process in which yeast produces the gas carbon dioxide and alcohol.

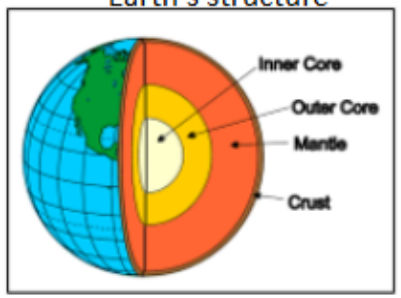
Year 8 Geography

Why do people live in the danger zone?

Keywords	
Natural hazard	A natural process that poses a threat to people and property
Tectonic hazard	A hazard caused by tectonic plate movement
Atmospheric hazard	A hazard in the atmosphere (hurricane, thunder and lightning, drought)
Tropical storm	A very powerful, low-pressure weather storm (e.g. hurricanes, typhoons and cyclones)
Plate boundary	The line between two plates, also known as a fault line

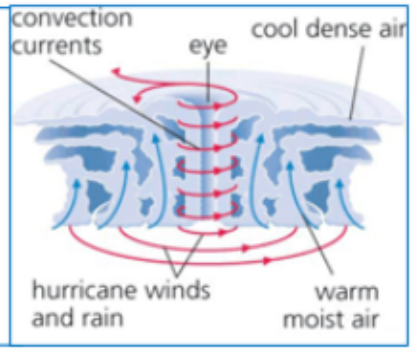
Name of plate margin	Movement of plates	Hazards that occur
Constructive		Volcanoes, earthquakes
Destructive		Volcanoes, earthquakes
Conservative		Earthquakes

Earth's structure



Tropical storms

- Large storms that can have winds up to 320mp/h
- Form in the tropics where the ocean is over 27°C.=
- Warm air rises and the Earth's spin causes the swirling pattern of clouds



Hazard	**Japan 2011**: an earthquake created a tsunami with waves up to 39 metres high	**Afghanistan earthquake 2022:** an earthquake of 6.2 magnitude occurred 4km below ground
Primary	15,000 people killed and 6000 injured Ports and airports were damaged and closed	1150 people killed and 1600 injured 1900 homes destroyed and 10,000 homes suffered damage
Secondary	4 years later 230,000 people were still living in temporary accommodation	Diseases such as cholera spread due to the cramped living conditions
Immediate	A tsunami warning was issued 3 minutes after the earthquake Search and rescue experts flew out	Afghanistan military carried out search and rescue operations UN response teams sent trucks of supplies
Long term	Installed a new tsunami warning system	A team set up to review responses and create a plan to prepare for future emergencies

Cabot Learning Federation

Past Holiday! Year 8 German 8.8 Vocab list

Past participles	**Past participles**
machen → gemacht	To do → did
nehmen→ genommen	To take → took
trinken→ getrunken	To drink → drank
sehen → gesehen	To see → saw
lesen → gelesen	To read → read
wollen → gewollt	To want → wanted
sagen → gesagt	To say → said
gehen → gegangen	To go → went
haben → gehabt	To have → had
fahren → gefahren	To go → went
bleiben → geblieben	To stay → stayed
kaufen → gekauft	To buy → bought
essen → gegessen	To eat → ate
besuchen → besucht	To visit→ visited

Meinungen	**Opinions**
Es war	It was …
toll/spitze	Great
fantastisch	Fantastic
interessant	Interesting
ergriefend	Moving (emotionally)
unvergesslich	unforgetable
unglaublich	Incredible
zu kurz	Too short
langweilig	Boring
zu lang	Trop long
spannend	Exciting
emotional	Emotional
traurig	sad

Wann?	**When?**
heute	Today
normalerweise	Normally
gewöhnlich	Usually
manchmal	Sometimes
Während der Pause/ der Reise	During breaktime/the journey
am Wochenende	On the weekend
nach der Schule	After school
zweimal pro Woche	Twice a week
oft	Often
immer	Always
selten	Rarely
ab und zu	From time to time
Montags	On Monday
gestern	Yesterday
neulich	Recently
letztes Wochenende	Last weekend
letzte Woche	Last week
letztes Jahr	Last year
vor einem Monat	A month ago
morgen	Tomorrow
bald/früh	Soon
in der Zukunft	In the future
nächstes Wochenende	Next weekend
nächste Woche	Next week
nächstes Jahr	Next year
In einem Monat	In a month

Was machst du normalerweise?	**What do you do on holidays?**
sich entspannen (ich entspanne mich)	To relax
Spaß haben (Ich habe Spaß)	To have fun
schwimmen (ich schwimme)	To swim
sich anziehen (ich ziehe mich…an)	To get dressed
aufstehen (ich stehe…auf)	To get up
sich waschen (ich wasche mich)	To wash
aufwachen (ich wache auf)	To wake up
auskommen mit (ich komme gut mit…aus)	To get on with
Ich putze mir die Zähne	I brush my teeth
sich duschen (ich dusche mich)	To shower
sich schminken (ich schminke mich)	To put on make-up

Wie war das Wetter?	**What was the weather like?**
Es war schön	The weather was nice
Es war schlecht	The weather was bad
Es war heiß	It was hot
Es war kalt	It was cold
Es war bewölkt	It was grey / overcast
Es war wolkig	It was cloudy
Es war sonnig	It was sunny
Es war windig	It was windy
Es war neblig	It was foggy
Es war stürmisch	It was stormy
Es hat geregnet	It was raining
Es hat gescneit	It was snowing
Es war frostig	It was frosty

Enquiry: How and why has democracy in Britain changed 1215-1928?

Today, in the United Kingdom, we live in a democracy, where laws are made by a Parliament that we have elected. However, this hasn't always been the case, we are going to be exploring how people in the UK have protested for their right to vote.

History – Year 8 Knowledge Organiser Topic 4

Key Events

1	15 June 1215 – The **Magna Carta** was signed by **King John** at Runnymede.
2	22 August 1642 – 3 September 1651 – The **English Civil War** between the **Parliamentarians** and the **Royalists** over how England should be ruled.
3	1688 - **Glorious revolution** ends absolute power of the monarch.
4	16th August 1819 - **Peterloo Massacre** – Cavalry charged at protesters wanted electoral reform.
5	1832 – **The Great Reform Act** – Gave 40,000 extra men the vote, mostly just the middle classes.
6	**1838-1848** – The **Chartists Movement** – a series of petitions demanding equal voting rights for all men.
7	**1918 – Representation of the People Act** was passed **extending voting rights** to all **men** over 21 and some **women** over 30.
8	**1928 – Representation of the People Act** was passed **extending voting rights** to **women** over 21 bringing **electoral equality**.

Historical Skills Focus

interpretation	A viewpoint or opinion.
change	What aspects of democracy changed and why. Considering rates/speed of change, the amount of change and which groups of people were effected by this change.
continuity	What aspects of democracy stayed the same and why.

Further your learning

Want to find out more about our journey to democracy: https://assets.parliament.uk/education/houses-of-history/main.html

Key Terms

9	propaganda	Information, can be biased or misleading, that promotes a political cause of point of view.
10	democracy	A form of government where the people have a say in how the government is run by voting.
11	reform	To make changes.
12	Suffrage	The right to vote in political elections.
13	Cavaliers	Supporters of King Charles I in the English Civil War – Royalists.
14	Roundheads	Supporters of the English Parliament in the English Civil War – Parliamentarians.
15	MP's	Members of Parliament – they represent voters.
16	charter	A document granting rights/privileges.
17	Suffragists	NUWSS – National Union of Women's Suffrage Societies – Campaigned non-violently for votes for women.
18	Suffragettes	WSPU – Women's Social and Political Union – a militant movement campaigning for votes for women.
19	Historical Significance	To evaluate what was significant about events, people, and developments in the past that had an impact towards changing the future

Key Individuals

King John
Magna Carta

King Charles I
English Civil War

Oliver Cromwell
English Civil War

Henry Hunt
Peterloo Massacre

William Lovett
Chartist

John Frost
Chartist

William Cuffay
Chartist

Millicent Fawcett
Suffragist

Emmeline Pankhurst
Suffragette

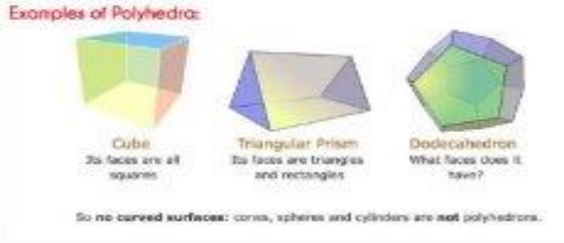
Emily Davison
Suffragette

Solid Geometry is the geometry of three-dimensional space, the kind of space we live in.

There are two main types of solids, "**Polyhedra**", and "**Non-Polyhedra**"

Polyhedra

A **polyhedron** is a solid with flat faces
Each face is a polygon (a flat shape with straight sides)



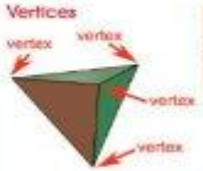
Note: the plural of **polyhedron** is either **polyhedrons** or **polyhedra**

Non –Polyhedra

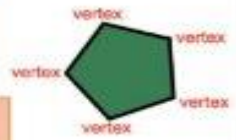
Non-Polyhedra are solids where not all the faces are flat.

Vertices, Edges and Faces

A **vertex** (plural: **vertices**) is a point where two or more line segments meet. This is often called a corner.



This tetrahedron has 4 vertices.



This pentagon has 5 vertices.

An **edge** is a line segment between faces.

For a **polygon** an edge is a line segment **on the boundary** joining one vertex (corner point) to another.

This Pentagon Has 5 Edges

This Tetrahedron Has 6 Edges

For a **polyhedron** an edge is a line segment where **two faces meet**.

A **face** is any of the individual flat surfaces of a solid object.

This tetrahedron has 4 faces (there is one face you can't see)

Prisms: A prism is a solid object with:

- Identical ends
- Flat faces
- The same cross section (found by cutting straight across an object) throughout

Sides

"Side" is not a very accurate word, because it can mean:

- An edge of a polygon, or
- A face of a polyhedron

Euler's Formula

For any polyhedron *that doesn't intersect itself,* then the number of faces (F), edges (E) and vertices (V) are linked using **Euler's Formula**

This can be written: **F + V – E = 2**

Example: Cube

A cube has:

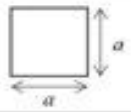
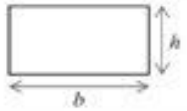
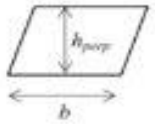
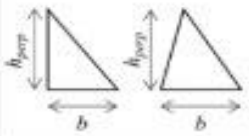
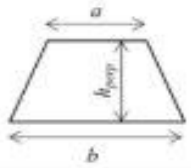
- 6 Faces
- 8 Vertices (corner points)
- 12 Edges

F + V – E = 6 + 8 – 12 = **2**

Area recap

The **area** of a shape is a measure of the two dimensional space that it covers.

Units include: cm^2, mm^2, m^2

Shape	Dimensions	Area formula
Square		a^2
Rectangle		bh
Parallelogram		bh_{perp}
Triangle		$\frac{bh_{perp}}{2}$
Trapezium		$\frac{(a+b)h_{perp}}{2}$
Circle		πr^2

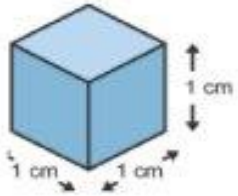
Volume

Volume is the amount of 3-dimensional space something takes up. You can imagine how much water would fit into a container.

Units include: litres, cm^3, mm^3, m^3

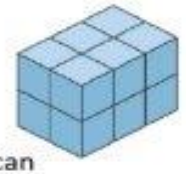
Volume is measured in **cubes**.

A cubic centimeter is the volume within a cube that has sides of length 1cm. It has a volume of $1cm^3$ (1cm cubed).



Cubes and Cuboids

This cuboid is made up of 12 cubes. Each cube is $1cm^3$ so the volume of this cuboid is $12cm^3$



To find out how many cubes are in a cuboid, we can multiply the width by the length by the height

$V = w \times l \times h$

In the cuboid above, we would do $2 \times 2 \times 3 = 12cm^3$

Example (Area)

Area = b × h

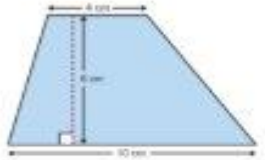
= 3 × 8

= 24 cm^2

Area = πr^2

= $\pi \times 8^2$

= 64π = 201.1cm^2



Area = $\frac{(a+b) \times h}{2}$

= $\frac{(4+10) \times 6}{2}$

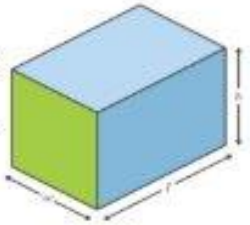
= $\frac{84}{2}$ = 41cm^2

Volume of a prism

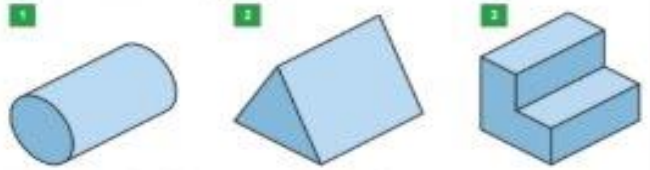
The volume of a cuboid is width × length × height ($V = w \times l \times h$).

We can also think of this as the area of the cross section (in green, which is w × h) × length

So the Volume = area of the cross section × length



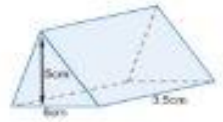
This formula works for all prisms:



1. *volume of a cylinder = area of circle × length*
2. *volume of triangular prism = area of triangle × length*
3. *volume of L-shaped prism = area of L-shape × length*

Example

Here is a triangular prism



The area of the cross section (triangle) is $\frac{b \times h}{2}$

Area = $\frac{5 \times 6}{2} = 15cm^2$

Volume = area of cross section x length

= 15 × 3.5 = 52.5 cm^3

Useful Links https://www.mathsisfun.com/geometry/index.html https://www.bbc.co.uk/bitesize/topics/zrf3cdm https://www.bbc.co.uk/bitesize/guides/zc9wxnb/revision/3

CALCULATING ANGLES - TYPES OF ANGLE

Key Concepts

Regular polygons have equal lengths of sides and equal angles.

Angles in polygons

Sum of interior angles

$= (number\ of\ sides - 2) \times 180$

Exterior angles of **regular** polygons $= \frac{360}{number\ of\ sides}$

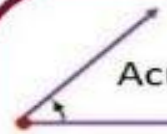
Types of angle

There are four types which need to be identified – acute, obtuse, reflex and right angled.

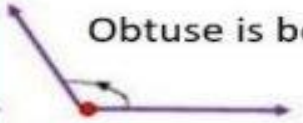
Key Words

Reflex, Polygon, Interior angle, Exterior angle, Acute, Obtuse, Right angle,

Examples



Acute is less than 90°

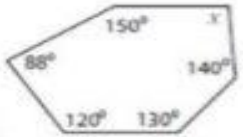


Obtuse is between 90° and 180°

Right angled is 90°

Reflex is between 180° and 360°

Example:



Sum of the interior angles = (Number of sides - 2) x 180°

= (6 - 2) x 180°

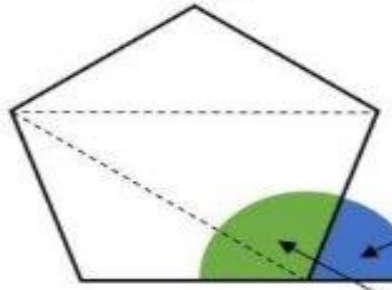
= 4 x 180 = **720°**

Sum of the interior angles = 120° + 140° + 130° + 150° + 88° + x

720° = 628° + x

x = **720°** - 628° = **92°**

Regular Pentagon



Exterior angles

$= \frac{360}{5} = 72^o$

Sum of interior angles

$= (5 - 2) \times 180$

$= 540^o$

Interior angle $= \frac{540}{5} = 108^o$

regular 12-gon

Number of sides =

Each exterior angle =

Useful Links

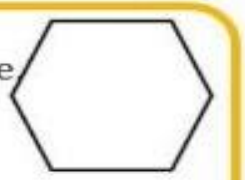
https://vle.mathswatch.co.uk/vle/

https://corbettmaths.com/contents/

https://www.bbc.co.uk/bitesize/subjects/zqhs34j

Questions

1) Calculate the sum of the interior angles for this regular shape.
2) Calculate the exterior angle for this regular shape.
3) Calculate the size of one interior angle in this regular shape.



ANSWERS: 1) 720° 2) 60° 3) 120°

CALCULATING ANGLES

Key Concepts

Angles in a **triangle equal 180°**.

Angles in a **quadrilateral equal 360°**.

Vertically opposite angles are equal in size.

Angles on a **straight line equal 180°**.

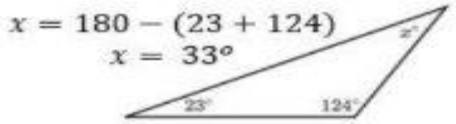
Base angles in an isosceles triangle are equal.

Alternate angles are equal in size.

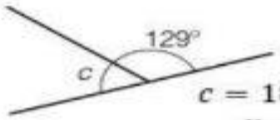
Corresponding angles are equal in size.

Allied/co-interior angles are equal 180°.

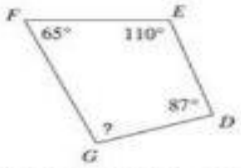
Examples



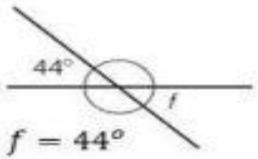
$x = 180 - (23 + 124)$
$x = 33°$



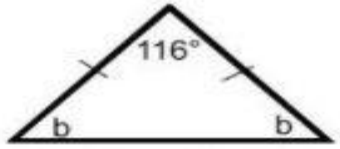
$c = 180 - 129$
$x = 51°$



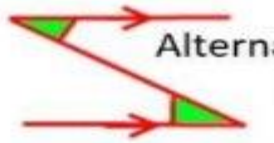
$? = 360 - (65 + 110 + 87)$
$? = 98°$



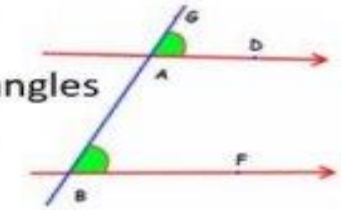
$f = 44°$



$b = (180 - 116) \div 2$
$b = 32°$



Alternate angles are equal



Corresponding angles are equal

Allied/co-interior angles equal 180°

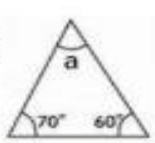
Key Words

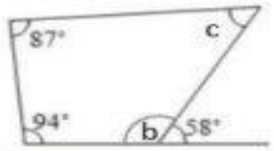
Angle, Vertically opposite, Straight line, Alternate, Corresponding, Allied Co-interior

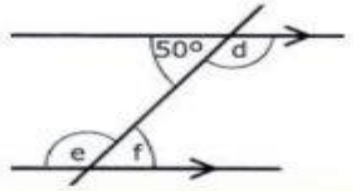
Questions

Calculate the missing angle:

a)







Useful Links

https://vle.mathswatch.co.uk/vle/

https://corbettmaths.com/contents/

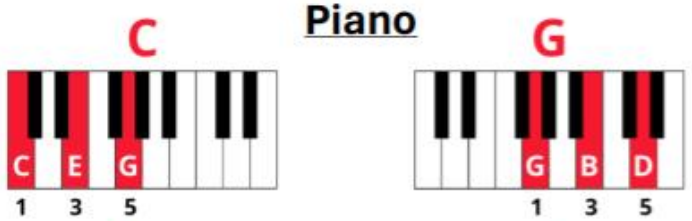
https://www.bbc.co.uk/bitesize/subjects/zqhs34j

ANSWERS: 1) a=50° 2) b=122° c=57° 3) d=130° e=130° f=50°

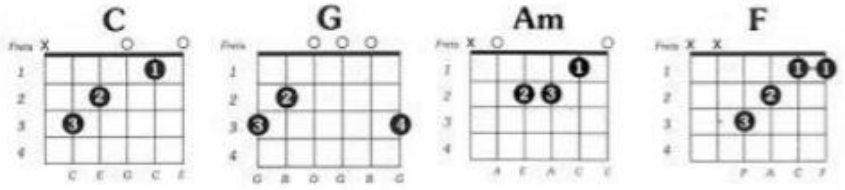
Music KO – Instrumental Skills

Chords

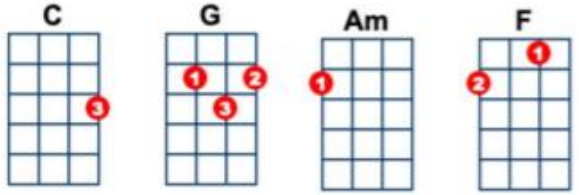
Piano



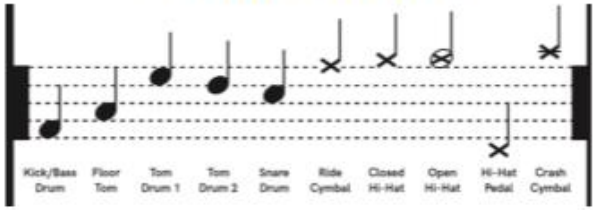
Guitar

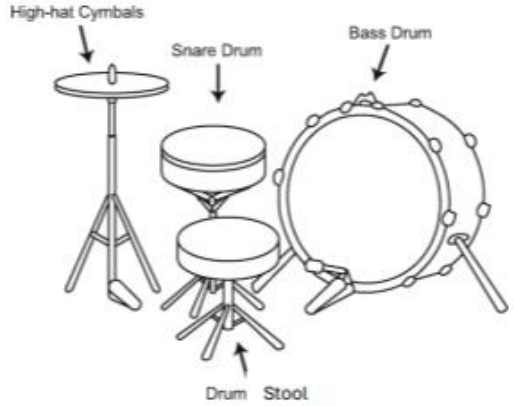


Ukulele



Drum Notation

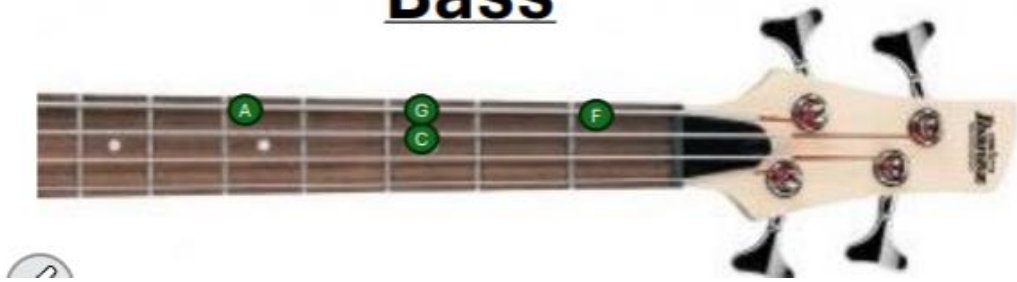




Keywords

- Chords – Multiple notes played at the same time
- Inversion – Changing the order of notes in a chord
- Structure – The order of sections in a piece of music
- Melody – A string of notes one at a time, the melody is sung in a song
- Pulse – The constant, steady beat in music that keeps different parts in time
- Riff – a repeating musical pattern
- Frets – The spaces between the metal bars on the neck of a guitar, ukulele or bass (Start counting from furthest away from the instrument body)

Bass



METHODS OF TRAINING

Plyometric training

- Plyometric training improves power.
- It is used by sports performers such as sprinters, hurdlers, and netball, volleyball and basketball players.
- Plyometric exercises need maximal force as the muscle lengthens (eccentric action) before an immediate maximal force as the muscle shortens (concentric action).


Aerobic endurance training

- **Continuous**

This involves training at a steady pace and moderate intensity for a minimum of 30 minutes.

- **Fartlek**

Fartlek training involves changes in intensity.

- **Interval**

This is where the individual performs a work period followed by a rest or recovery period.

Circuit training

- Circuit training involves doing one exercise after another.
- Each exercise is called a station (usually 60-10 stations).
- Circuit training can be used to improve:
  - Muscular strength
  - Muscular endurance
  - Power
  - Aerobic endurance

Weight training

- Improves muscular strength or muscular endurance.
- Free weights are weights that are not attached to a machine.

Muscular strength:

- High loads and low reps

90% 1RM and 6 reps

Muscular endurance:

- Low loads and high reps

50-60% 1RM and 20 reps

Elastic strength:

- Medium loads and medium reps

75% 1RM and 12 reps

Flexibility training

- **Static stretching**
  - Active stretching
  - Passive stretching


- **Ballistic stretching**

- **Proprioceptive Neuromuscular Facilitation (PNF)**

Speed training

- **Hollow sprints**

- **Acceleration sprints**

- **Interval training**

Evil and Suffering Knowledge Organiser

NEED TO KNOW WORDS

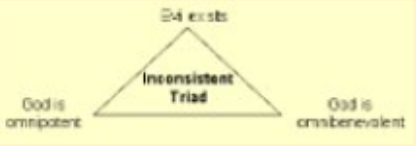
Angels	Follow the orders of Allah including protecting us from harm.
Atheist	Someone who do not believe in a god
Evil	Something wicked and immoral
Free will	The ability to make your own choices
Humanist	A belief that humans should be free to give meaning to their own lives.
Immoral	Doesn't meet the accepted moral standard.
Karma	The belief that our actions have consequences
Moral	Standards of good behaviour
Moral evil	Suffering caused by our behaviour (e.g. bullying)
Natural evil	Suffering caused by nature (e.g. natural disasters)

Inconsistent triad: The problem of evil and suffering

Various types of evil and suffering are evident in the world. This can cause problems for many believers, as they believe in a loving, powerful and all-knowing God:

If God was all - knowing (**omniscient**), He would know that we were suffering.
If God was all - powerful (**omnipotent**), He would be able to stop our suffering.
If God was all -loving (**omnibenevolent**), He would want to stop our suffering.

We know evil and suffering exist so how can God exist?



Free Will

Free will is the ability to make choices and act upon them without being forced to do so. In many religions, people believe that God gives us free will so that we can make our own choices in life.

Sometimes, when we make choices that are not good, they can lead to negative consequences like sadness, pain, or suffering. However, God also gives us the ability to make good choices, and when we do, it can bring happiness and positive things into our lives.

So, while we might experience suffering or difficulties in life, it is not necessarily because God is punishing us. Instead, it can be a natural result of our choices or circumstances.

Soul making

The belief is that when we face challenges, we are given the opportunity to develop our character, cultivate virtues like courage, compassion, and perseverance, and deepen our relationship with God.

For example, when we face difficulties, we can learn to be more empathetic and understanding towards others who are going through similar experiences. Or, when we overcome obstacles, we can become stronger and more resilient, and learn to trust in God's guidance and grace.

So, even though pain and suffering can be difficult to bear, they can also be seen as opportunities for growth and transformation, and for strengthening our spiritual lives.

Life is a test

The idea that life is a test means that our time on earth is meant to challenge us and help us grow. It's like taking a test at school - we are given the chance to show what we know, and to learn from our mistakes.

In life, we are given the opportunity to choose between good and bad, and to act in ways that show our values and beliefs. By doing the right thing, helping others, and being kind and fair, we are passing the test and we can show that we are worthy of a good and happy life, and of eternal reward.

Evil and Suffering Knowledge Organiser

RS

NEED TO KNOW WORDS

Nature	Characteristics we inherit from our parents
Nurture	Influences from our environment
Original Sin	inherited from Adam in consequence of the Fall
Omnipotent	All-powerful
Omnibenevolent	All-loving
Satan	A force that tempts people from God
Soul making	The idea that suffering helps us develop
Suffering	the state of undergoing pain, distress, or hardship.
Upbringing	the treatment and instruction received by a child from its parent (s) or caregiver throughout its childhood

Nature

- Refers to the genetic traits and features that we inherit from our parents
- Includes things like eye colour, height, and personality traits
- Cannot be changed or controlled by us
- Plays a role in determining who we are and how we behave

Nurture

- Refers to the environmental factors that shape our development
- Includes things like our upbringing, social environment, and life experiences
- Can have a big impact on our beliefs, values, and behaviours
- Can be influenced and changed by us, and by the people and experiences around us

The Role of Angels in Islam

Angels are spiritual beings in Islam who are created by God to carry out various tasks. They are believed to have no free will and always obey God's commands.

According to Islamic teachings, angels are responsible for many things, including recording people's good and bad deeds, guarding and protecting humans, and communicating messages from God to His prophets.

Angels do not cause suffering or allow it to happen. Instead, it is believed that God allows suffering to occur for a variety of reasons, including to test people's faith, to help them grow and learn, and to bring about a greater good.

Karma in Buddhism and Hinduism

Karma is a concept in Hinduism, Buddhism, and other religions that suggests that our actions have consequences, and that what we do in this life will affect our future lives.

The idea is that every action we take - whether good or bad - creates a kind of energy that will eventually come back to us in some way. This energy can affect our future lives, either positively or negatively, depending on the nature of our actions.
For example, if we do good deeds, we create positive karma that can lead to good things happening to us in the future. On the other hand, if we do bad deeds, we create negative karma that can lead to negative consequences.

Book of Job

The story follows a man named Job, who is a faithful servant of God. One day, Satan challenges God, saying that Job only loves and serves God because he has a good life. God allows Satan to test Job's faith by taking away everything he has, including his family and his possessions.

Despite all the suffering he endures, Job remains faithful to God and refuses to curse Him or give up his faith. In the end, God rewards Job's faithfulness by restoring everything he lost and giving him even more than he had before.

The Book of Job teaches us that suffering is not always a punishment for something we have done wrong. Sometimes, good people suffer for reasons that we may not understand, and it is important to trust in God and remain faithful, even in the face of hardship.

KS3 Science

Photosynthesis and Ecosystems

1. Photosynthesis in Plants

Animals need to eat food to get their energy. But green plants and algae do not. Instead they make their own food in a process called **photosynthesis**. Almost all life on Earth depends upon this process. Photosynthesis is also important in maintaining the levels of oxygen and carbon dioxide in the atmosphere.

Word equation

carbon dioxide + water → glucose + oxygen

from the air — from the ground — their food — released into the air

Balanced symbol equation

$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

2. Location of photosynthesis in plants

Photosynthesis takes place inside the **chloroplasts** of the plant cells, these contain a green pigment, **chlorophyll**. This absorbs the light energy needed to make photosynthesis happen. The leaf is a plant organ adapted to carry out photosynthesis. The table describes some of its adaptations:

Thin	a short distance for CO2 to move by diffusion
Chlorophyll	Absorbs light
Stomata	Allows CO2 to move in by diffusion
Guard cells	open and close the stomata depending on the conditions
Tubes	To transport water (xylem) and glucose (phloem)

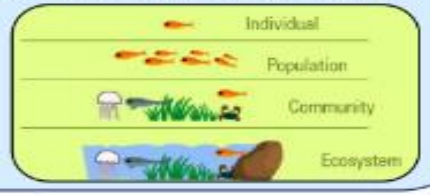
3. Measuring the effect of light intensity on photosynthesis

Method:

1. Leave for five minutes for the pondweed to acclimatise to the new
2. Count the number of bubbles given off in one minute.
3. Move the light 10 cm further back.
4. Leave for five minutes for the pondweed to acclimatise again.
5. Count the number of bubbles given off in one minute.
6. Repeat by moving the lamp away by 10 cm intervals until 50 cm is reached.

4. Habitats and Ecosystems

An **ecosystem** consists of **communities** of different living things, in single species **populations** living in their habitats. Examples of these include habitats include coral reefs, marshes and lakes. All the living things (**biotic factors**) and non-living things (**abiotic factors**) in an ecosystem depend upon each other for survival. This interdependence indudes through feeding, pollination.



5. Sampling Techniques

Sampling is done to look at the organisms in a population within an ecosystem in a practical way as counting each one individually is not always feasible. This is usually done using quadrats which marks off small areas to then use to estimate the population. A quadrat is usually a square made of wire. It may contain further wires to mark off smaller areas inside, such as 5 × 5 squares or 10 × 10 squares. The organisms underneath, usually plants, can be identified and counted. Quadrats may also be used for slow-moving animals, eg slugs and snails.

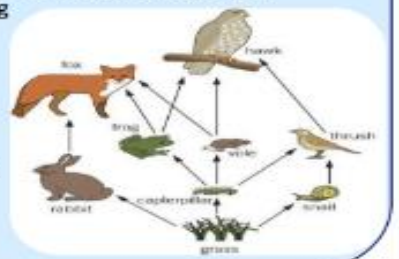
6. Food Chains/Biomass

A food chain shows the different species of an organism in an ecosystem, and what eats what. Organisms at each level have different terms:

The population of each organism in a food chain can be shown in a bar chart called a pyramid of numbers or a pyramid of biomass where the bars are drawn to scale. Energy is lost to the surroundings as we go from one level to the next, so there are usually fewer organisms at each level in this food chain.

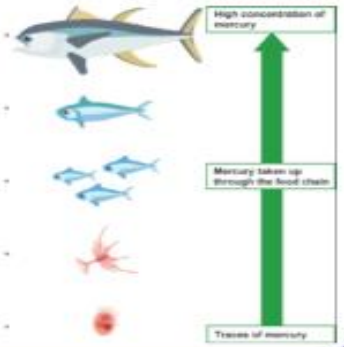
7. Food Webs

When all the food chains in an ecosystem are joined up together, they form a **food web.** Although it looks complex, it is just several food chains joined together. This leads to some interesting effects if the population in the food web decreases. Some animals can just eat more of another organism if food is in short supply, while others may starve and die. This in turn can affect the populations of other organisms in the food web.



8. Pollution and Pesticides

Some pollutants (including pesticides) quickly break down in the environment whilst others do not. These bio-accumulate in the food chain and damage the organisms in it. The predators at the end of the chain are most effected because compounds cannot be excreted and travel up the food chain.



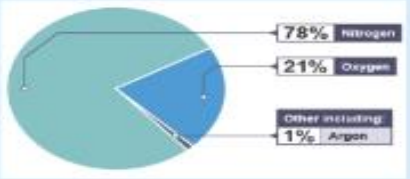
1. Composition of the Earth

The Earth's crust, it's atmosphere and the oceans are the only sources of natural resources for human life!

The Earth has four layers:
– Crust (thin and rocky)
– Mantle (properties of solid but flows easily)
- Outer core (made from nickel and iron)
– Inner core (made from nickel and iron)

4. Composition of the Today's Atmosphere

Nitrogen is the most abundant gas in today's atmosphere at 78%. Today's atmosphere contains 21% Oxygen and 1% Argon.

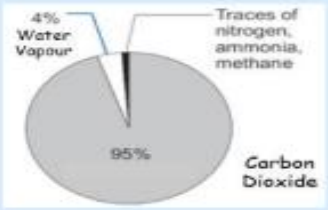


5. Fossil Fuels

About three-quarters of the electricity generated in the UK comes from power stations fuelled by fossil fuels. Energy from the burning fuel is used to boil water. The steam turns turbines, and these turn electrical generators.

2. Composition of the Early Atmosphere

The Earth's early atmosphere was composed of 95% carbon dioxide, 4% water vapour and 1% of trace gases which included Nitrogen, Ammonia and Methane.



KS3 Science

Earth & Atmosphere

6. Generating Electricity

Crude oil, coal and gas are fossil fuels. They were formed over millions of years from the remains of dead organisms. Coal was formed from dead trees and plant matter. Crude oil and gas were formed from dead marine organisms.

3. Evolution of Atmosphere

In the 4.5 billion years since the Earth formed it's atmosphere has changed considerably. This has happened in three main stages:

Stage 1 – Volcanoes:
The majority of the early atmosphere was carbon dioxide and water vapour. This was produced by volcanoes. After a time the water vapour condensed and formed the oceans.

Stage 2 – Green plants:
Green plants and algae evolved and used the carbon dioxide for photosynthesis. They also produced oxygen. Basic organisms evolved that were able to use the oxygen.

Stage 3– Complex animals:
The oxygen allowed more complex organisms to form. The ozone layer formed and this allowed further evolution of complex organisms.

7. Non Renewable Energy Sources

Non renewable energy sources include fossil fuels such as coal, oil and natural gas. These sources are a finite resource, which means when they have been used up, they cannot be replaced. Worryingly, humans are using them faster than they are forming!

8. Renewable Energy Sources

Scientists are trying to find alternative methods of generating electricity using renewable energy sources.

These are energy sources that will not run out or produce carbon dioxide and other greenhouse gases. They are 'cleaner' and more sustainable although they do come with advantages and disadvantages.

9. Renewable Energy Resources

Resource	Adv.	Disadv.
Wind	no CO_2	Unsightly, not always windy
Solar	No CO_2	Expensive, not always sunny
Hydroelectric	No CO_2	Destroys habitat
Geothermal	No CO_2	Specific locations

10. Carbon Cycle

All cells - whether animal, plant or bacteria - contain carbon. Carbon is passed from the atmosphere (as carbon dioxide) to living things, passed from one organism to the next and returned to the atmosphere as carbon dioxide again. This is known as the carbon cycle.

11. Carbon Cycle

Step 1: Removing carbon dioxide from atmosphere
Green plants remove carbon dioxide from the atmosphere by photosynthesis. The carbon becomes part of complex molecules such as proteins, fats and carbohydrates in the plants.

Step 2: Returning carbon dioxide to atmosphere
Organisms return carbon dioxide to the atmosphere by respiration. It is not just animals that respire. Plants and microorganisms do, too.

12. Carbon Cycle

Step 3: Passing carbon from one organism to next
When an animal eats a plant, carbon from the plant becomes part of the fats and proteins in the animal. Microorganisms and some animals feed on waste material from animals, and the remains of dead animals and plants. The carbon then becomes part of these microorganisms and detritus feeders.
Step 4: Returning carbon dioxide to the atmosphere
When fossil fuels are burned (combustion) in factories or transportation, carbon is released into the atmosphere as carbon dioxide gas.

KS3 Science

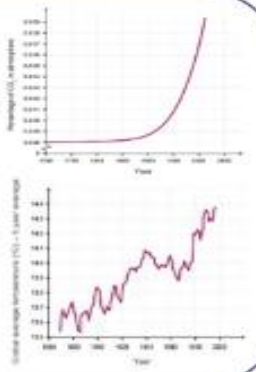
Earth & Atmosphere

13. Greenhouse Effect

The greenhouse effect is when greenhouse gases (carbon dioxide, methane and water vapour) in the Earth's atmosphere trap radiation from the sun and heat up the planet. Without the greenhouse effect the Earth would be too cold for us to survive on it.

14. Global Warming

The extra greenhouse gases released by human activity lead to the enhanced greenhouse effect. More heat is trapped by the atmosphere, causing the planet to become warmer than it would be naturally. The increase in global temperature this causes is called global warming.



Year 8 Block 4 Biology Knowledge Organiser Ecosystems

Revision guide Pgs: 23-24 + 28

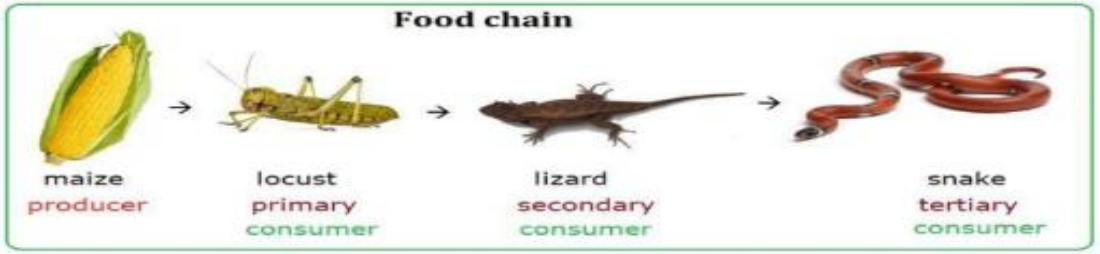
https://www.bbc.com/bitesize/subjects/z4882hv

KPI 8.1: Describe feeding relationships and food webs, and explain how a changing environment may affect them.

All food chains start with a green plant, producers. Arrows point to the eater and show the flow of energy in a food chain. Each stage is called a trophic level.

mahogany tree → caterpillar → song bird → hawk

maize → locust → lizard → snake



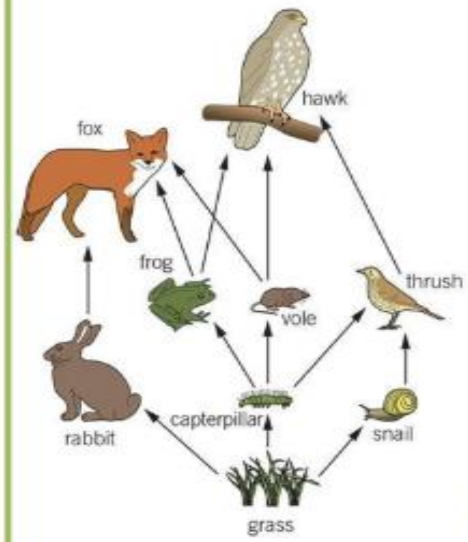
The first eater in a food chain is called the **primary consumer** and is a herbivore.

The next organism is the **secondary consumer** and the next is the **tertiary consumer** and this is usually the **top carnivore**.

Food chains do not go on indefinitely as energy is lost at each stage of the food chain. Some of the available energy goes into growth and the production of offspring. This energy becomes available to the next stage, but most of the available energy is used up in other ways: in respiration, keeping warm, movement and waste materials, such as faeces.

All of the energy used in these ways returns to the environment, and is not available for the next stage.

Key Terms	Function
Herbivore	Organism eats plant only, prey organisms
Carnivore	Organism eats other organisms, they hunt prey for their dinner
Omnivore	Organism eats both plant and animals
Primary consumer	The first eater in a food chain
Secondary consumer	The second eater in a food chain
Tertiary consumer	The 3rd organism feeding in the food chain, usually the top carnivore
Trophic level	Stages in the food chain e.g producers, or primary consumers
Bioaccumulation	The build up of toxic substances in the food chain, affecting organisms at the top of food chains
Ecosystem	A community of interacting organisms and their physical environment



Food chains show a simplistic view of who's eating who in an **ecosystem**. Organisms eat more than 1 food so food chains link together to make **food webs.**

Removing an organism or adding an organism to a food chain can have big implications on other organisms.

Year 8 Block 4 Biology Knowledge Organiser Ecosystems

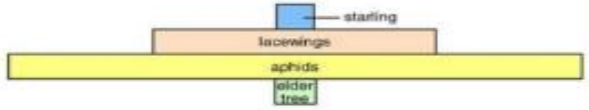
Revision guide Pgs: 23-24 + 28

https://www.bbc.com/bitesize/subjects/z4882hv

KPI 8.1: Describe feeding relationships and food webs, and explain how a changing environment may affect them.

Pyramids of numbers and biomass

Pyramids of numbers show how many organisms are at each **trophic level.** The width of each box represents the number of organisms.



Pyramids of number can end up odd shapes when 1 producer is large in size e.g one tree that supports lots of tiny organisms e.g aphids.

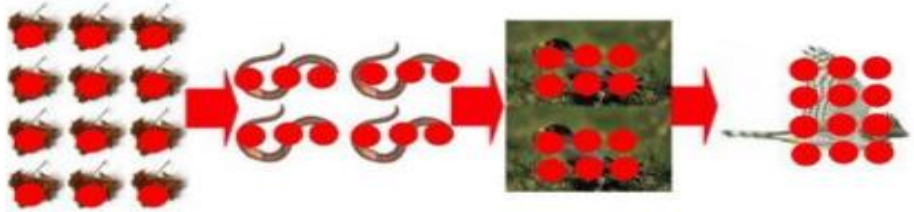
Pyramids of biomass show more accurately what is happening to the energy in a food chain than pyramids of number do. Pyramids of biomass are always pyramid shaped.

Key Terms	Function
Herbivore	Organism eats plant only, prey organisms
Carnivore	Organism eats other organisms, they hunt prey for their dinner
Omnivore	Organism eats both plant and animals
Primary consumer	The first eater in a food chain
Secondary consumer	The second eater in a food chain
Tertiary consumer	The 3rd organism feeding in the food chain, usually the top carnivore
Trophic level	Stages in the food chain e.g. producers, or primary consumers
Bioaccumulation	The build up of toxic substances in the food chain, affecting organisms at the top of food chains

Bioaccumulation

Some toxic substances like pesticides can pass up food chains.

Organisms near the bottom of the food chain absorb them in small amounts. The concentration in these organisms is too low to cause significant harm. However, as these organisms cannot excrete these substances, when they are eaten by others higher up the food chain, the concentration becomes more toxic and eventually causes harm. DDT is an example of a pesticide that was used and built up in the food chain.



Year 8 Block 4 Biology Knowledge Organiser Ecosystems

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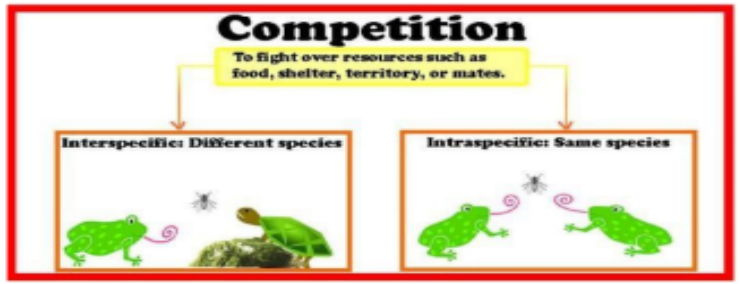
KPI 8.2: Explain how variation allow organisms to compete, and the way this drives natural selection

Organisms compete for resources like food, water, mates, space, light, and minerals.

There are 2 types of competition. **Interspecific competition** is between individuals of different species and **Intraspecific competition** is between individuals of the same species.



Organisms have special features known as **adaptations** to help them survive in their environment. For example polar bears are white so they are camouflaged in the snow.

Variation

Variation can be caused by genes e.g. eye colour and your blood group. It can also be caused by environment which means the food you eat, the chemicals you're exposed to , the way you're brought up. Often variation is a combination of genes and environment e.g. intelligence and weight.

Genetic variation always gives rise to **discontinuous data** where there is a limited set of data e.g. tongue roller or non roller.

Continuous data can be of any value and is caused by genetic and environmental factors.

Key Terms	Definition
Interspecific competition	Competition between individuals of different species
Intraspecific competition	Competition between individuals of the same species
Camouflaged	When an organisms blends in to their environment
Variation	Differences between organisms caused by genetics, environment or both
Continuous variation	This variation has no limit on the value e.g. height
Discontinuous variation	This type of variation has set categories or a limited set of values e.g. eye colour and is caused by genetic factors
Natural selection	The process whereby organisms better adapted to their environment tend to survive and produce more offspring

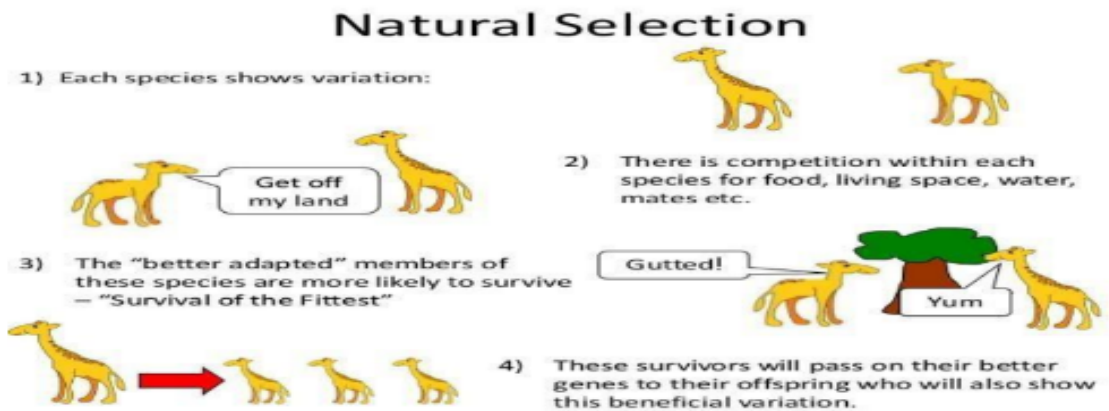
Natural selection

Natural selection states that there is variation within a species.

Some adaptations are better than others. Those with the best adaptations **survive**, and the others die.

The survivors can **reproduce** and have **offspring**.

Their offspring **inherit** the **genes** for the best adaptations, so the organisms **population** changes over time. This is survival of the fittest. Charles Darwin came up with this theory in the 1800's.



Past tense holidays 8.8 Spanish Knowledge Organiser

Cabot Learning Federation

A **verb** is a doing, being or having word. e.g. to speak, to eat, to be. **Reflexive verbs** in Spanish are verbs which usually mean an action done to yourself (e.g. wash yourself, shower etc.). Many are regular -ar verbs and they need an extra **reflexive pronoun**. We know a Spanish verb is reflexive because it will have «se » on the end of its infinitive eg. lavarse (to wash) and levantarse (to get yourself up).

Subject pronouns	Reflexive pronouns
yo (I)	**me**
tú (you)	**te**
él (he), **ella** (she)	**se**
nosotros/as (we)	**nos**
vosotros/as (you) (pl)	**os**
ellos/ellas (they)	**se**

Examples:

lavarse - to wash
me lavo > I wash
levantarse– to get up
nos levantamos > we get up
Ducharse- to shower
Te duchas > you shower

Reflexive verbs, the preterite (past tense)

The **preterite** is the past tense used in Spanish to describe a completed action at a specific time in the past (e.g. ayer (yesterday), el año pasado (last year)). For regular we take off –ar, -er – ir and add the below endings :

	-AR	-ER / -IR
I	é	í
You (sg)	aste	iste
He/she/it	ó	ió
We	amos	imos
You (pl)	asteis	isteis
They	aron	ieron

Examples:

Tomar = to take
To form " I took"

TOMAR > tom > tomé

Hablar = to speak
To form "she spoke"

HABLAR > habl > habló

Careful! Not all verbs are regular in the preterite. Some key irregulars are :

Hacer (to do)	hice, hiciste, hizo, hicimos, hicisteis, hicieron
Ir (to go)	fui, fuiste, fue, fuimos, fuisteis, fueron
Ser (to be)	fui, fuiste, fue, fuimos, fuisteis, fueron
Tener (to have)	tuve, tuviste, tuvo, tuvimos, tuvisteis, tuvieron

8.8 Past holidays
SPANISH

Cabot Learning Federation

Las opiniones	Opinions
Fue genial	It was great
Fue fantástico	It was fantastic
Fue interesante	It was interesting
Fue emocionante	It was exciting
Fue inolvidable	It was unforgettable
Fue increíble	It was incredible
Fue demasiado corto	It was too long
Fue demasiado largo	It was too short

¿Qué tiempo hacía?	What was the weather like?
Hacía buen tiempo	It was nice weather
Hacía mal tiempo	It was bad weather
Hacía sol	It was sunny
Hacía calor	It was hot
Hacía frío	It was cold
Hacía viento	It was windy
Llovía	It was raining

¿Qué hiciste durante las vacaciones?	What did you do on holidays?
Fui a la playa	I went to the beach
fui al restaurante	I went to the restaurant
fui de compras	I went shopping
Me quedé	I stayed
Comí	I ate
Bebí	I drank
Vi	I saw
Probé	I tried (food)
Hice deportes acuáticos	I did watersports
Descansé	I rested
Me relajé	I relaxed
Me divertí	I had fun
Visité monumentos	I visited monuments
Di paseos	I went walking
Saqué fotos	I took photos
Compré recuerdos	I bought souvenirs
Tomé el sol	I sunbathed

La vida cotidiana	Daily life
La gente	People
Los habitantes	Inhabitants
Hablar	To speak
Vivir	To live
Celebrar	To celebrate
Preparar	To prepare
Ir a trabajo	To go to work
Ir al instituto	To go to school
Volver a casa	To go back home
Ver la tele	To watch TV
Cenar	To have dinner
Bañarse	To have a bath
Ducharse	To have a shower

¿Cuando?	When?
Ayer	Yesterday
La semana pasada	Last week
El fin de semana pasado	Last weekend
El mes pasado	Last month
El año pasado	Last year
Hace dos días	Two days ago
El otro día	The other day

REMEMBER!
Any practical work you do at home, take photos and this can be classed as homework if there is evidence in your homework book!

Decorative Textile Techniques

Applique is the method of sewing pieces of fabric onto other fabric bases in beautiful designs. You can stitch the applique pieces by hand as well as by sewing machine.

Spray dying creates a speckled, graffiti effect on fabric. Try not to spray too close as it will not have the same effect on the fabric.

Dyeing involves adding colour to the fabric by way of soaking it in a solution of dye. You can dye a fabric fully or partially ; Batik, tie and dye, shibori dyeing are all variations of dyeing fabric to bring about beautiful patterns on fabric surface.

Rubbings use natural textures to create interesting designs on to fabric, layer different colours to make your design more original.

Shaving foam marbling is a method of creating a marble effect, using shaving foam and acrylic paints. You can mix colours together to create a colourful design. Be careful not to overmix as this could result in to getting an all over brown colour.

Decorative stitches are created by selecting different stitch settings on a sewing machine, these are good to use in different colours to match your creative work. They can be sewn in a curved line as well as just sewing straight.

Year 8 Textiles Knowledge Organiser

The 4 Rs of sustainability

The UK wastes around £1 billion of clothing each year, which effects the environment we live in. A way to support the environment is to follow the four Rs of sustainability at home.

Recycle – Making unwanted clothing in to something new i.e. Jeans in to shorts.
Reduce – Buy high quality clothing which will last for longer.
Repair – If there is a rip or hole in your clothing, fix it by hand sewing it or adding a patch.
Reuse – If you no long want your clothing, donate it to a sibling or local charity shop.

Textiles Hierarchy of Key words

Tier 3 'Academic' keywords.
Plain seam, analyse, sustainable, embellishment, Woven/ bonded/ knitted, Free machine embroidery, function, develop

Tier 2 Valuable keywords used in most lessons every lesson.
Complementary colours, contrast, environment, fastening, compare, embroidery, iron, equipment, context, appliqué, effect, improve

Tier 1 Basic keywords used in almost every lesson.
colour, design, shape, machine, pattern, line, Texture, tone, theme, Fabric, thread, sew

Use these in your writing and speaking

Use connectives to link each paragraph!	**Explain an idea:** • Although • Except • Unless • However • Therefore	**Sequencing:** • Firstly • Secondly • Next • Finally • Since
Adding to: • Furthermore • Also • As well as • Moreover	**Cause and effect:** • Thus • So • Therefore • Consequently	**Contrasting:** • Whereas • Instead of • Alternatively • Otherwise • Then again
To empathise: • Above all • Ultimately • Especially • Significantly	**To compare:** • Likewise • Equally • In the same way • Similarly	**Give examples:** • Such as • For example • In the case of • As revealed by • For instance

DESCRIBE

I believe that…

I think that…

The main idea is…

EXPLAIN

This means that…

Therefore…

This maybe because…

JUSTIFY

This is positive because…

This is negative because…

It is useful/not useful because…

ANALYSE

One strength is…

One weakness is…

One argument is…

EVALUATE

One advantage is…

One disadvantage is…

The best option is…

COMPARE AND CONTRAST

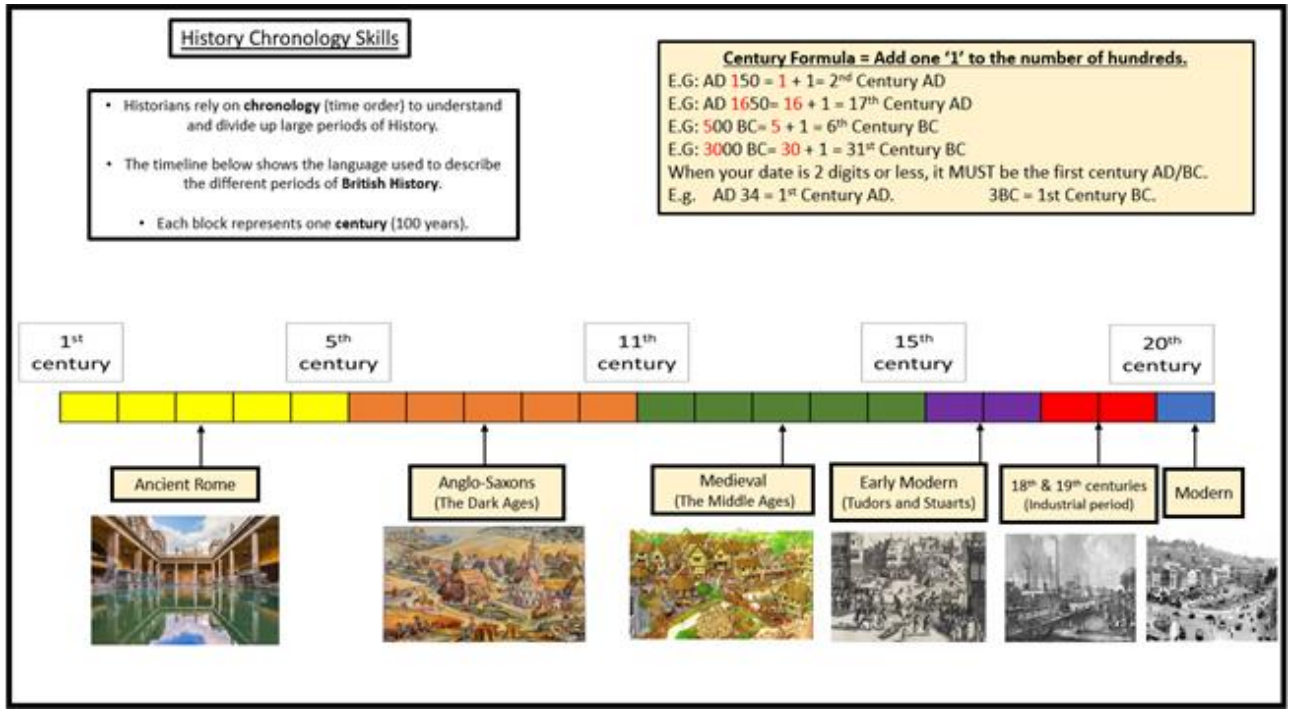
One similarity is…

One difference is…

On the other hand…

Sentence starter phrases

Most people would agree…
Only a fool would think…
We all know…
A sensible idea would be…
The fact is that…
Surely you would agree that…
Without a doubt…
I am certain that…
Some people might argue…
However…
Also…



Use these in your writing and speaking in DT

Design and Technology Keywords

Food and Nutrition	Design and Technology	Textiles
Caramelisation Aeration Amino acids Plasticity Shortening Denaturation Coagulation Gelatinisation Emulsification Pasteurisation	Carbon footprint Planned Obsolescence Iterative Design Tolerance Technology Push Anthropometrics Consumer Social Footprint Ergonomics Forming Processes	Plain seam analyse sustainable embellishment Woven/ bonded/ knitted Free machine function embroidery develop
Unsaturated Protein Radiation Saturated Carbohydrates Conduction Deficiency Digest Convection Cross-contamination Micro-organisms	Aesthetics Target Market Properties Deciduous Coniferous Automation Functionality Primary Source Sustainability Continuous Improvement	Complementary colours contrast environment fastening compare embroidery iron equipment context appliqué effect improve
Claw grip Flavour Texture Aroma Nutrients Energy Appearance Bridge hold Mix Smell	Cost Customer Materials Annotation Product Safety Environment Design User Prototype	colour design shape machine pattern Texture line tone theme Fabric thread sew

Sentence Starters - DT

I have designed…because
My project was about…
I found… during my research
My design is suitable for…
I have learnt how to…
The most enjoyable part of my project was….
The area I found the most challenging was…
Equipment I have used include…
I would improve my work by…
I am pleased with my finished product because…

Sentence Starters- Food and Nutrition

In order to work hygienically/safely I made sure I ….
I worked safely when in the kitchen by...
If I could improve any skill, I would improve...because...
Overall, I am happy/unhappy with my progress/dish because....
The texture of my dish is… this is because…

Sentence starters- Textiles

I have designed….
The context of my design is…
My research is useful because…
By researching, I am able to…..
By researching I have found out….
I researched into….
My design is suitable for…..
My design is based upon…
I have planned to..
The order I will work in is…
The most enjoyable part of m project was…
The area I found most challenging was…
I am most pleased with…
I am pleased with my finished project because…
Equipment I used was…

The periodic table of the elements

1	2											3	4	5	6	7	0
							1 H hydrogen 1										4 He helium 2
7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[98] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86

Key

relative atomic mass
atomic symbol
name
atomic (proton) number

* The elements with atomic numbers from 58 to 71 are omitted from this part of the periodic table.

The relative atomic masses of copper and chlorine have not been rounded to the nearest whole number.


UNITED KINGDOM
LOW / HILLS / MOUNTAINS
Orkney Islands
Shetland Islands
Prime Meridian
Scotland
Outer Hebrides
Highlands
North Sea
Atlantic Ocean
Inverness
Aberdeen
Ben Nevis
Edinburgh
Northern Ireland
Glasgow
Sunderland
N
United Kingdom (UK)
Londonderry
Belfast
Carlisle
PENNINES
Leeds
Isle of Man
Irish Sea
Dublin
Liverpool
England
Ireland
Cambrian Mts.
The Fens
Birmingham
Ipswich
Oxford
Wales
London
Bristol
Celtic Sea
130 mi
130 km
Cardiff
Thames
Portsmouth
Dover
Plymouth
Exeter
Falmouth
English Channel
Channel Tunnel
France
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EUROPE
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15° W
0°
15° E
30° E
45° E
60° E
ARCTIC CIRCLE
Barents Sea
White Sea
Norwegian Sea
Iceland
Faroe Islands (Denmark)
Norway
Finland
Russia
400 mi
400 km
60° N
Atlantic Ocean
Scotland
North Sea
Sweden
Estonia
Latvia
Lithuania
(European Russia)
Ural Mountains
Baltic Sea
Northern Ireland
Netherlands
Belarus
UK
Belgium
Denmark
Poland
Ireland
England
Germany
50° N
Wales
Czech Rep
Slovakia
Ukraine
Sea of Azov
Kazakhstan
English Channel
Luxembourg
Liechtenstein
Austria
Hungary
Romania
Moldova
Switzerland
Azores
Madeira Islands
Bay of Biscay
France
Slovenia
Croatia
Bosnia and Herzegovina
Monaco
Serbia
Bulgaria
Black Sea
Caspian Sea
Italy
San Marino
Montenegro
Macedonia
Georgia
Andorra
Vatican
Albania
Armenia
40° N
Corsica (France)
Sardinia (Italy)
Spain
Greece
European Turkey
Turkey
Azerbaijan
Portugal
Balearic Islands
Iran
0°
Sicily (Italy)
Malta
Crete (Greece)
Cyprus
Syria
Canary Islands
Algeria
Mediterranean Sea
Lebanon
ASIA
Gibraltar (UK)
PRIME MERIDIAN
Tunisia
15° E
30° E
Israel
Jordan
Iraq
Morocco
Libya
worldatlas
30° N
AFRICA
Egypt
Saudi Arabia
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Barents Sea
Novaya Zemlya (Russia)
Kara Sea
Laptev Sea
Arctic Ocean
NORTH AMERICA
Norwegian Sea
ARCTIC CIRCLE
Ostrova Anzhu (Russia)
worldatlas
Russian Federation
Ural Mts
Bering Sea
Alaska
European Russia
Lake Baikal
Ostrov Sakhalin (Russia)
Sea of Okhotsk
Kamchatka Peninsula
Aleutian Islands
EUROPE
Aral Sea
Kazakhstan
Mongolia
North Korea
Caspian Sea
Black Sea
Uzbekistan
Kuril Islands (Russia)
INTERNATIONAL DATE LINE
MONDAY | SUNDAY
Turkey
Turkmenistan
Kyrgyzstan
Tajikistan
ASIA
Lebanon
Syria
MIDDLE EAST
Afghanistan
China
Yellow Sea
Sea of Japan (East Sea)
Japan
Pacific Ocean
Israel
Iraq
Persian Gulf
Iran
Nepal
Bhutan
South Korea
Jordan
Kuwait
Qatar
Bahrain
Pakistan
Bangladesh
Hong Kong (China)
East China Sea
Ryukyu Islands (Japan)
Bonin Islands (Japan)
Macau (China)
Gulf of Tonkin
India
TROPIC OF CANCER
Saudi Arabia
U.A.E.
Oman
Gulf of Oman
Burma
Laos
Hainan (China)
Taiwan
Okinawa (Japan)
Volcano Islands (Japan)
Red Sea
Arabian Sea
Bay of Bengal
Andaman and Nicobar Islands (India)
Thailand
Vietnam
SOUTHEAST ASIA
South China Sea
Philippines
Yemen
Gulf of Aden
Laccadive Sea
Lakshadweep Islands (India)
Andaman Sea
Philippine Sea
AFRICA
Socotra (Yemen)
Sri Lanka
Phuket (Thailand)
Cambodia
Brunei
Sulu Sea
Malaysia
Gulf of Thailand
Celebes Sea
New Guinea (Indonesia)
EQUATOR
Maldives
Borneo (Indo.)
Singapore
Sumatra (Indo.)
Java Sea
Indonesia
Banda Sea
British Indian Ocean Territory (UK)
Indian Ocean
Java (Indo.)
Bali (Indo.)
Flores Sea
Savu Sea
East Timor
Arafura Sea
OCEANIA
Coral Sea
AUSTRALIA
1000 mi
1000 km
60° E
90° E
120° E
150° E
180°
15° S
0°
15° N
30° N
45° N
60° N
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Azores (Portugal)
Portugal
Spain
EUROPE
Turkey
15° W
Algiers
Mediterranean Sea
Syria
ASIA
Madeira Is. (Portugal)
Tunisia
Israel
Iran
Iraq
MIDDLE EAST
30°N
Morocco
Cairo
Jordan
Persian Gulf
Canary Is. (Spain)
Algeria
Libya
Egypt
Kuwait
Western Sahara
TROPIC OF CANCER
Qatar
Atlantic Ocean
U.A.E.
Oman
Saudi Arabia
Mauritania
Nile River
Red Sea
Arabian Sea
Niger
Cape Verde
Senegal
Mali
Eritrea
15° N
Dakar
Chad
Sudan
Yemen
Burkina Faso
Benin
Gulf of Aden
Gambia
Lake Chad
Djibouti
Guinea
Guinea-Bissau
Togo
Djibouti
Socotra (Yemen)
Cote D'Ivoire
Nigeria
South Sudan
Ethiopia
Somalia
Sierra Leone
Central African Rep.
Accra
Uganda
Liberia
Ghana
Gulf of Guinea
Cameroon
Indian Ocean
0° EQUATOR
Rwanda
Kenya
Eq. Guinea
Nairobi
Dem. Rep. of the Congo
Sao Tome & Principe
Lake Victoria
Zanzibar (Tanzania)
800 mi
Congo
Tanzania
800 km
Gabon
Burundi
Malawi
Seychelles
AFRICA
Cabinda (Angola)
Lake Malawi
Angola
Comoros
PRIME MERIDIAN
15° S
Zambia
Lusaka
Mozambique Channel
Namibia
Zimbabwe
Mauritius
TROPIC OF CAPRICORN
Botswana
Windhoek
Reunion (France)
Madagascar
Atlantic Ocean
Mozambique
30° S
South Africa
Swaziland
worldatlas
Indian Ocean
Lesotho
Cape Town
60° E
30° W
15° W
0°
15° E
30° E
45° E
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Subject websites

These websites will help you with homework, reading around the subject and revision

English

https://www.sparknotes.com/ - *Macbeth, A Christmas Carol, An Inspector Calls*
https://app.senecalearning.com/ - *Macbeth, A Christmas Carol, An Inspector Calls, Power and Conflict Poetry*
https://www.bbc.com/bitesize - *Macbeth, A Christmas Carol, An Inspector Calls*

Maths

https://corbettmaths.com/
https://vle.mathswatch.co.uk/vle/
https://www.mathspad.co.uk/

Science:

https://www.bbc.com/bitesize
https://www.senecalearning.com/
https://www.memrise.com/

Geography

Time for Geography - videos (mainly focused on physical processes)
Bitesize
Cool Geography

History

Seneca Learning
BBC bitesize - use Edexcel resources for GCSE.

Art Websites

https://www.tate.org.uk/
https://www.bbc.co.uk/bitesize/subjects/z6f3cdm
https://www.incredibleart.org/

Computer Science and IT.

www.mrahmedcomputing.co.uk

Drama

https://youtu.be/VeTpob9LBM8
https://youtu.be/wISEU13mRBE
https://www.bbc.co.uk/bitesize/guides/zsf8wmn/revision/1

DT:

http://www.mr-dt.com/
http://technologystudent.com/
https://www.senecalearning.com/

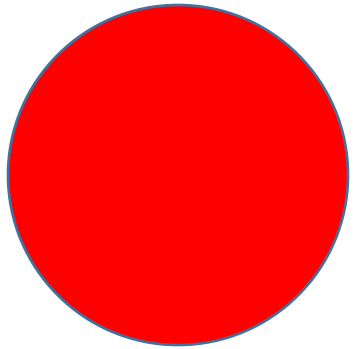
PE

https://www.bbc.com/bitesize/examspecs/ztrcg82
https://sites.google.com/view/ocrgcseperevision/home

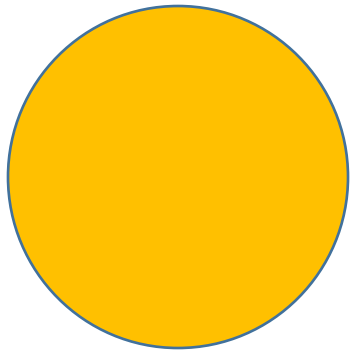
RS

KS3 https://www.bbc.co.uk/bitesize/subjects/zh3rkqt

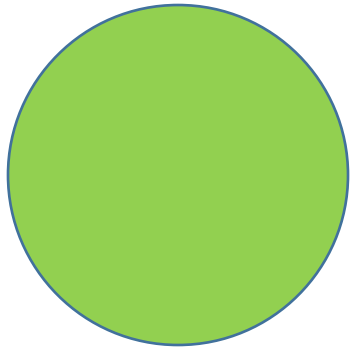
How would you describe your learning in this lesson?



I don’t understand the learning in this lesson and would like some help



I am not confident with the learning in this lesson so might need some extra help.



I am confident with the learning in this lesson and can work independently

Timetable

	Monday	Tuesday	Wednesday	Thursday	Friday
Tutor time					
Lesson 1					
Lesson 2					
Break					
Lesson 3					
Lesson 4					
Lunch					
Lesson 5					
Lesson 6					