BRISTOL METROPOLITAN ACADEMY

Knowledge Organisers 2024-25 Year 9 – 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.

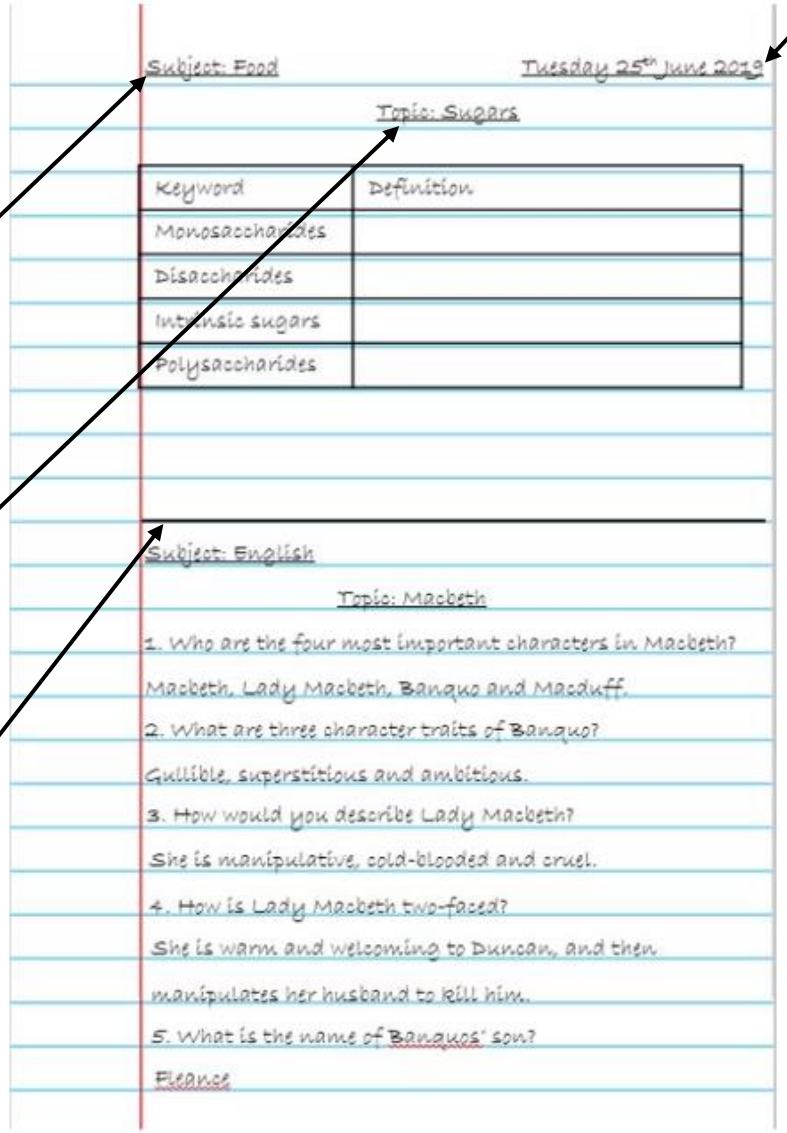
How to present your homework:

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?

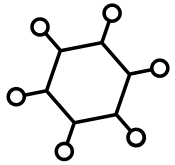
Fleance

Home Learning Strategies to help you revise

Brain Dump

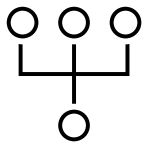
Write down everything you know about o certain topic on a page. Use your KO to add extra notes in a different colour.

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.

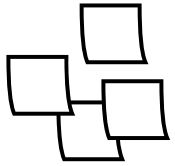
Vocabulary

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 9 Mixed Media Portraits

Content: In this project you will

Knowledge—of different artists who create portraits

Understand—What inspired artists to create their work and how to write about the work

Skills—drawing, collage, painting, printing, showing the influence of other artists in your own work and presentation

Outcomes— Self portraits, celebrity portrait, mixed media portraits, prints, drawings, collage.

Analysis

All artist research pages should be annotated

Artwork-

- **Artist name**
- Describe the work-what does it look like?
- Use the formal elements i.e. colour, line etc.
- What techniques/materials were used?
- What is your opinion of the work?
- How is it relevant to your own idea?

Sentence starters

I like/dislike the way the artist has used...because

I think the colour scheme used is effective because...

I think the artist has been inspired by...because

Evaluation of Your Artwork-

- What inspired you to create the piece?
- What techniques did you use and why?
- What does it mean to you?
- How is it relevant to your idea?

Louie Jover– Is an artist living in Australia. He creates mixed media portraits of celebrities. He works in layers, deconstructing a photograph of celebrities and adds geometric shapes and lines.

ARTISTS

Delita Martin_- Is an artist who lives in Texas, USA. Martin's goal is to create images as a visual language to tell the story of women that have often been marginalized, offering a different perspective of the lives of Black women.

Keywords

Portrait—An artistic representation of a person, in which the face and its expression is the focus.

Mixed Media— art composed from a combination of different media or materials.

Assessment

D	**Deepening** Exceptional, Sophisticated, Perceptive, Imaginative, Masterful.
O+	**On Track (secure)**— Highly Confident, Refined, Thorough, Assured, In-Depth.
O	**On Track (insecure**— Competent, Sustained, Informed, Refined, Thoughtful, Detailed.
Y	**Yet to be on track**— Attempted, Basic, Some, Uneven.
A	**At an earlier stage**— Partial, Limited, inconsistent.

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.

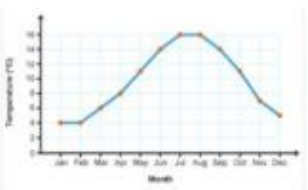
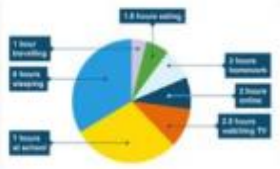
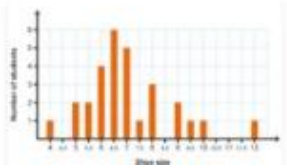
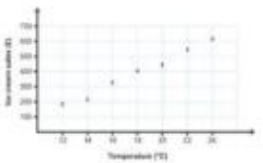
Advantages of using Spreadsheets:

- 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.

Year 9 Drama Knowledge Organiser. ***Make sure when you rehearse and perform your devised piece, you include the following skills and techniques:***

Physical Skills

Body language
Interaction
Posture
Gait
Gesture
Spatial awareness
Proxemics
Control
Mannerisms
Facial expressions
Eye focus / contact
Energy
Stage presence
Characterisation

Vocal Skills

Volume
Diction
Emphasis
Accent
Intonation
Inflection
Emotional tone
Pitch
Pace
Pause

Teamwork
It is important to work together as a team and commit clearly to that group:
- turn up on time
- be positive
- accept ideas
- respect other opinions

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.

Blocking: the precise movement and positioning of actors on a stage

You can include:
Levels, mime, slow motion, direct address, flash back, flash forward, improvisation, silence, pause

The final stages of the process
Run through the piece for an audience that understand its importance.
- get rid of things that don't work
- run the piece with any technical aspects(projection and sound)
- test sound levels and **sightlines**

Then ask for honest feedback and act on it.
- Does it make sense if it needs to?
- Have the initial aims and objectives been met?
- Is the desired message being received clearly?
- Is the pace appropriate?
- Is it running smoothly?
- Has everyone learned what happens, when and where?

Be prepared to make mistakes and be resilient enough to carry on, but most importantly, enjoy performing.

Year 9 D&T – Pewter Project

What is pewter?

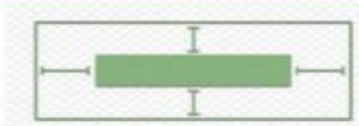
- **Pewter is a malleable metal alloy consisting of tin, antimony, copper, bismuth, and sometimes silver. Modern pewter consists of are 94% tin.**
- **Pewter has a low melting point (around 170–230 °C) making it ideal for melting on a chip forge and brazing hearth and casting**

Elements of Design

LINE

A line is a mark between two points. There are various types of lines, from straight to squiggly to curved and more.

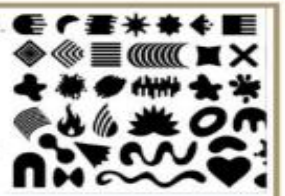
SPACE



Space is the area around or between elements in a design. It can be used to separate or group elements

SHAPE

Height + width = shape. There are three basic shapes : **Geometric** (triangles, squares, circles etc), **natural** (leaves, animals, trees, people) and **abstract** (see image)



TEXTURE

Texture relates to the surface of an object; the look or feel. Concrete is rough; metal is smooth.

2D Design Basic Tools

SELECT – Use this tool to select different tools and highlight objects.

LINE – This tool creates straight lines. Click to start the line, extend out and click to finish.

CIRCLE – This tool creates circle shapes. Click to start the circle, extend to the size needed and click to finish.

PATH – This tool creates curved lines through continual clicks.

RECTANGLE – This tool can be used to create both rectangular and square shapes.

TEXT – Use this tool to insert text onto your designs. The font, size and direction of the text can be changed.

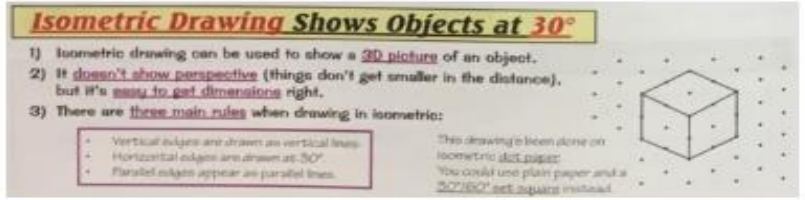
DELETE PART – Use this tool to delete separate lines and objects.

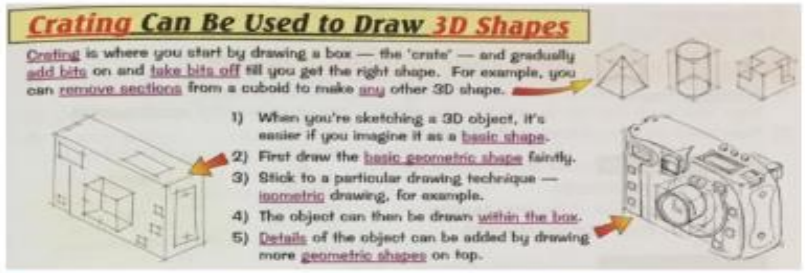
DELETE ANY – Use this tool to delete whole lines and objects.

Computer aided design (CAD)

Computer aided design now has the capability to design new products in 3D, visualise them in a variety of materials and send images around the world for collaboration and consultation. Once production is finalised, these designs are sent to computer aided manufacture (CAM) machines to be formed. Autodesk and Solidworks are common forms of CAD software used.

Advantages of CAD	Disadvantages of CAD
Ideas can be drawn and developed quickly	Expensive to set up
Designs can be viewed from all angles and with a range of materials	Needs a skilled workforce
Some testing and consumer feedback can be done before costly production takes place	Difficult to keep up with constantly changing and improving technology





What is an Alloy?

Definition: A metal alloy is a substance that combines more than one metal or mixes a metal with other non-metallic elements.

Example
Iron + Carbon = Steel
Copper + zinc = Brass

What other alloys can you think of?

Malleable

Definition: A material that can be hammered or pressed into shape without breaking or cracking.

Computer aided manufacture (CAM)

By using Computer aided manufacture, designs can be sent to CAM machines such as laser cutters, 3D printers and milling machines.

Advantages of CAM	Disadvantages of CAM
Fast and accurate production	Expensive to set up
Machines can run constantly on repetitive tasks	Needs a skilled workforce of engineers

Reading Shakespeare's Imagination: *A Midsummer Night's Dream*

Plot

Four lovers, having an argument in the Athenian woods at midnight, are confused by fairies who are only trying to help. Throw in some magic, a custody battle over a little boy, and an amateur actor who unsuspectingly becomes the fairy queen's love interest... oh and a magic set of ass's ears... and there you have it - *A Midsummer Night's Dream*, a comedy.

- Hermia runs away with Lysander instead of marrying Demetrius.
- The King and Queen of the fairies fight over a little boy.
- Puck muddles up the lovers and causes havoc with a love potion.
- Bottom gets the ears of an ass and Titania falls in love with him.
- Oberon puts things right and wins the little boy from Titania.
- The lovers get married. Bottom's friends put on a play to celebrate.
- The play is about Pyramus and Thisbe.
- The fairies bless the marriages.

Context

The most influential writer in all of English literature, William Shakespeare was born in 1564 to a successful middle-class glove-maker in Stratford-upon-Avon, England. Shakespeare attended grammar school, but his formal education proceeded no further. In 1582 he married an older woman, Anne Hathaway, and had three children with her. Around 1590 he left his family behind and travelled to London to work as an actor and playwright. Public and critical success quickly followed, and Shakespeare eventually became the most popular playwright in England and part-owner of the Globe Theatre. His career bridged the reigns of Elizabeth I (ruled 1558–1603) and James I (ruled 1603–1625), and he was a favourite of both monarchs. Indeed, James granted Shakespeare's company the greatest possible compliment by bestowing upon its members the title of King's Men. Wealthy and renowned, Shakespeare retired to Stratford and died in 1616 at the age of fifty-two.

Key Characters

Puck – Also known as Robin Goodfellow, Puck is Oberon's jester, a mischievous fairy who delights in playing pranks on mortals.

Lysander - A young man of Athens, in love with Hermia.

Demetrius - A young man of Athens, initially in love with Hermia and ultimately in love with Helena.

Hermia - Egeus's daughter, a young woman of Athens. Hermia is in love with Lysander and is a childhood friend of Helena.

Helena - A young woman of Athens, in love with Demetrius.

Bottom - The overconfident weaver chosen to play Pyramus in the craftsmen's play for Theseus's marriage celebration.

Oberon - The king of the fairies.

Titania - The beautiful queen of the fairies.

Egeus - Hermia's father, who brings a complaint against his daughter to Theseus.

Theseus - The heroic duke of Athens, engaged to Hippolyta.
Hippolyta - The legendary queen of the Amazons, engaged to Theseus.

Key Quotations

"Ay me, for aught that I could ever read,
Could ever hear by tale or history, The course of true love never did run smooth ..."

"If we shadows have offended, Think but this, and all is mended: That you have but slumbered here, While these visions did appear; And this weak and idle theme,
No more yielding but a dream, Gentles, do not reprehend.
If you pardon, we will mend."

'Though she be little she be fierce'

'I must go seek some dewdrops here,
And hang a pearl in every cowslip's ear'

'Cupid is a knavish lad, Thus to make poor females mad.'

"Love looks not with the eyes, but with the mind, And therefore is wing'd Cupid painted blind.

'Lord what fools these mortal be'

Key Themes

Love:
Shakespeare explores the lighter side of love in *A Midsummer Night's Dream*. Love makes us behave in strange ways – the lovers fight in a most uncivilised way in the woods. It can bring out the best and bravest qualities in a character – Hermia risks her life for love. Lovers often feel invincible against a world that doesn't understand them, just as Hermia and Lysander stand alone against Athens's law. Love can make us ridiculous – Helena asks a boy to treat her like a dog, whilst Titania falls in love with a donkey. Love can be cruel – Helena and Demetrius fall desperately in love with someone who doesn't love them back. Love also has a powerful magical quality: falling in love can be like being under a spell.

Appearance and Reality:
Sometimes things are not quite what they seem. Sometimes we fail to see situations as they really are. People often pretend to be something that they're not, hiding their true selves for one reason or another. Shakespeare was really interested in this idea and explored it in many of his plays. This theme is usually referred to as appearance and reality.

Order and Disorder:
Much of the comedy of *A Midsummer Night's Dream* comes from the chaos created when the natural order of things is disrupted. But there's a darker side too. There's not one character that isn't relieved when Oberon finally restores the midnight world to a happier one by c

Unit 2: Shakespeare

Poetry:

Spellbound Emily Bronte

The Poison Tree William Blake

Still I Rise Maya Angelou (consider Helena's voice, link with other characters who are marginalised)

The Magic of the Mind by Clive Webster

Do you carrot All for Me? Anon (humour and word play)

Poetic terms

Meaning – the main message of the poem

Speaker – the voice of the poem.

Imagery – the words which paint images in the reader's mind.

Simile – indirect comparison (like/as)

Metaphor – direct comparison

Personification – when a non-living object is described as looking like or behaving like a human.

Tone – the feeling/atmosphere of the poem

Structure – the organisation of the poem, its rhyme scheme, the rhythm.

Stanza – grouped lines in a poem

Form – the type of poem – i.e. sonnet, ode.

Caesura – punctuation which occurs mid-line; slows the rhythm.

Enjambment – lack of terminal punctuation, speeding up the poem.

End-stopping – punctuation at the end of a line

Metre – number of beats per line

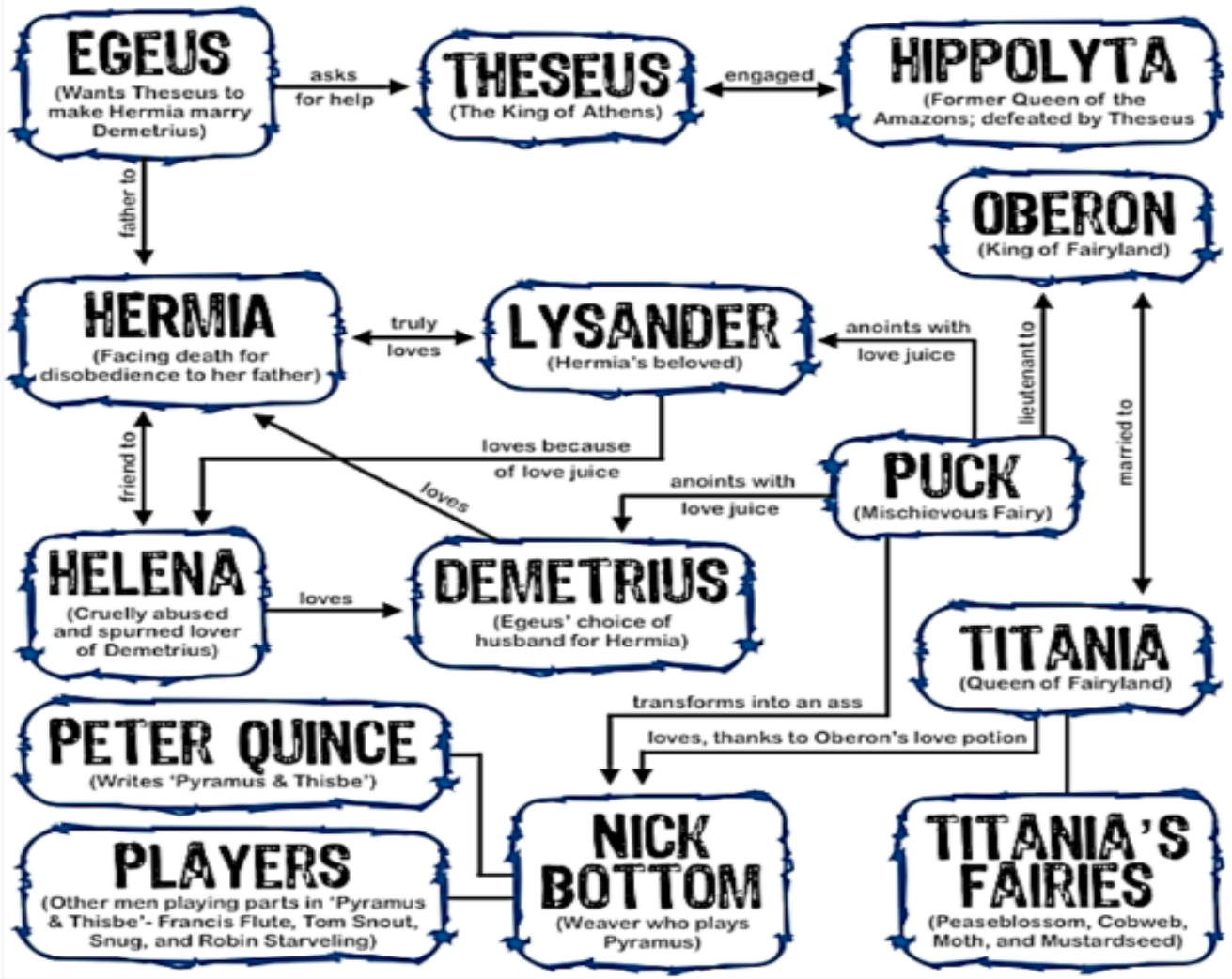
Plosive – sound made by stopping airflow – b,t,k, d, p; it creates a harsh sound.

Onomatopoeia – a word which sounds like the thing it is describing – i.e. bang

Alliteration – the repetition of the same sound

Sibilance – the repetition of the 's' sound

Relationships in the play



Literature terminology - Symbolism, motif, archetype, soliloquy, allusion, lyricism, farce, comedy

Year 9 Knowledge Organiser

Food

What do we need **proteins** for?

Functions
- Build enzymes and hormones
- Build cell membranes
- Repair and maintain tissues
- Defend the body (antibodies)
- Secondary source of energy

What happens if we have too much or too little?

Excess
- Kidney and liver diseases
- Weight gain

Deficiency
- Kwashiorkor
- Slowing growth rate
- Swelling

Protein alternatives

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.


Soy chunks


Tofu


Textured vegetable protein (TVP)


Tempeh


Beans, lentils, chickpeas

What do we need **carbohydrates** for?

Functions
- Primary source of energy
- Store energy for later
- Build DNA
- Prevent the body from using proteins as an energy source

What happens if we have too much or too little?

Excess
- Tooth decay
- Type 2 diabetes
- Weight gain and obesity
- Hyperglycaemia

Deficiency
- Weight loss
- Lack of energy, tiredness
- Severe weakness
- Hypoglycaemia

What do we need **fats** for?

Functions
- Source of energy
- Insulation
- Dissolve vitamins
- Build hormones
- Build cell membranes

What happens if we have too much or too little?

Excess
- Obesity
- Hypertension
- Coronary heart disease
- Fatty liver disease
- Type 2 diabetes

Deficiency
- Weight loss
- Vitamin deficiency
- Heart disease
- Feeling cold

There are two different types of fats

Saturated
- Butter
- Cream
- Eggs

Unsaturated
- Olive oil
- Avocado

Visible fats

Fats you can see, such as on meat are often saturated.

Invisible fats

Unsaturated fats you cannot see, such as in nuts and avocados. They are often good for the brain,

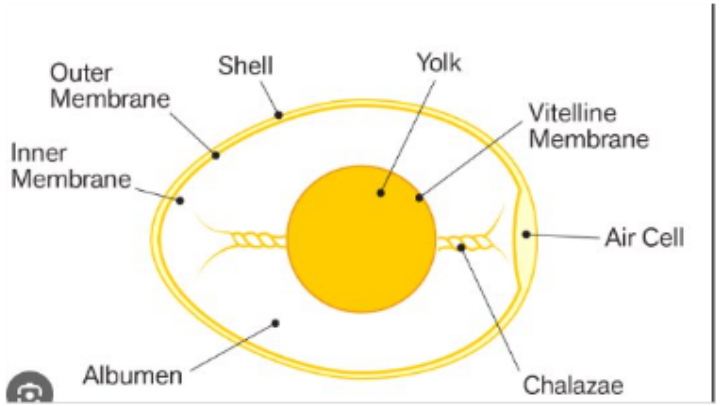
Proteins can denature when:


They are heated


They come into contact with acidic/alkaline ingredients

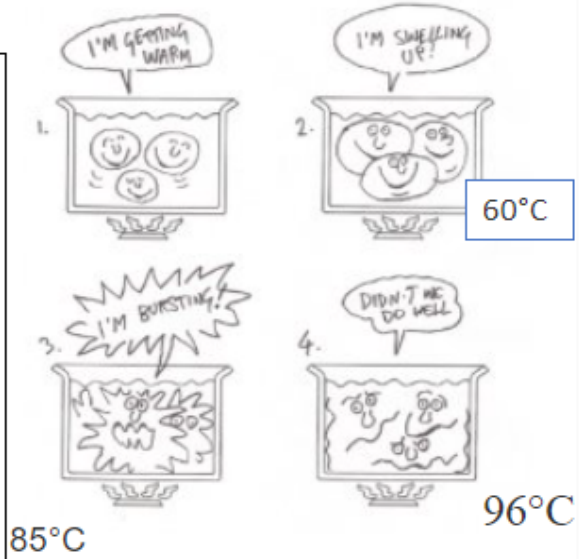

They are whisked, beaten or kneaded


Proteins unravel becoming firm when heated



https://www.ifst.org/lovefoodlovescience/resources/carbohydrates-gelatinisation
https://www.ifst.org/lovefoodlovescience/resources/fats-and-oils-aeration
https://www.ifst.org/lovefoodlovescience/resources/fats-and-oils-plasticity

The food science bit!
Thickening sauces with starches.
- **Gelatinisation** happens when a **starch** and liquid mixture are heated.
- The water enters the **starch** granules and they **swell** and change texture.
- As more water is taken in, the granules expand, and the mixture becomes **viscous** and **thick**.
- This results in a **gel** which thickens sauces by the process of **gelatinisation.**



Gelatinisation happens when **starch** and liquid such as water are heated together.

9.12 Festivals
French Vocab List

¿Quelle est ta fête préférée?	What is your favourite festival
Ma fête préférée est…	**My favourite festival is..**
Le Noël	Christmas
Le Réveillon de Noël	Christmas Eve
La Saint-Sylvestre	New Year's Eve
Le Nouvel An	New Year's Day
Le Divali	Divali
Pâques	Easter
Le Hanoukka	Hanukkah
L'Aïd	Eid
Le premier avril	April Fool's day
L'anniversaire	Birthday
Le premier mai	May day
Une fête	Party
La fête des Mères	Mother's day
La fête de la musique	Music festival
Un jour férié	Bank Holiday
…age/les noces	Marriage/wedding
Le 14 juillet	Bastille Day
La Saint-Valentin	Valentine's day
Le Mardi Gras	Shrove Tuesday

¿Qu'est-ce qu'on fait pour célébrer?	What do we do to celebrate?
Je me lève	I get up
Je me douche	I shower
Je m'habille	I get dressed
Je reçois des cadeaux	I receive presents
J'éteins des bougies	I blow candles out
Je décore l'arbre de Noël	I decorate the Christmas tree
J'achète des nouveaux vêtements	I buy new clothes
Je vais à l'église	I go to church
Je vais à la mosquée	I go to the mosque
Je vais à la place	I go to the square
Je vais à la maison de …	I go to …'s house
… arrive	… arrives
Nous mangeons…	We eat…
Nous jeûnons	We fast
Nous jouons des jeux de société	We play board games
Nous célébrons	We celebrate
Je m'amuse bien	I have a good time
Je regarde des feux d'artifices	I watch the fireworks
Je vais au lit	I go to bed
Je me couche	I go to sleep

C'est comment?	How is it like?
passionnant	Exciting
inoubliable	unforgetable
amusant	Fun
insupportable	Unbearable
Un désastre	A disaster

Les phrases/verbes du passé	Phrases/verbs in the past
L'année dernière	Last year
Le mois dernier	Last month
Avant hier	The day before yesterday
La semaine dernière	Last week
Hier	Yesterday
Dans le passé	In the past
Quand j'avais … ans	When I was … years old
L'été dernier	Last summer
L'hiver dernier	Last winter
Il y a … (deux ans)	… ago (two years)
Le weekend dernier	Last weekend
Je suis allé(e)	I went
J'ai célébré	I celebrated
J'ai mangé	I ate
J'ai bu	I drank
J'ai ouvert	I opened
C'était	It was

Les phrases/verbes du futur	Phrases/verbs in the future
L'année prochaine	Next year
Le mois prochain	Next month
Après demain	The day after tomorrow
Demain	Tomorrow
La semaine prochaine	Next week
Dans le futur / à l'avenir	In the future
Quand j'aurais … ans	When I will be … years old
L'été prochain	Next summer
Je vais aller	I am going to go
Je vais célébrer	I am going to celebrate
J'ai l'intention de manger	I intend to eat
Je voudrais/j'aimerais boire	I would like to drink

9.12 Festivals and Culture

Cabot Learning Federation

Listening check-list

Before I listen …

1. read the exercise carefully, paying attention to the instructions and pictures
2. think of possible words, phrases and ideas I might hear
3. think about how these words and phrases would be pronounced
4. think of the different ways certain phrases could be expressed

While I listen, pay attention to…

5. repetition or paraphrase
6. time marker phrases
7. the questions and tasks that go with the passage
8. all the things I predicted (questions, vocabulary, possible answers)

While I listen, I work out any words I don't know by…

9. using the words I understand to get the general meaning of the passage first
10. listening to words that come before or after the unknown word
11. using my general knowledge to think about what the unknown word might logically mean
12. listening to what comes later in the passage for further clues, or to check whether the unknown word does in fact mean what I think it means
13. using what I know about sentence structure to work out what kind of word it is (noun, adjective, verb)
14. thinking whether the unknown word is like a word I know in English or French/German/Spanish, and then checking whether that meaning would make sense

Reading – Top tips

- Read the introduction to the question carefully. This will help you to give sensible answers. Look for titles.
- Answer every question, especially where you have to write a letter. If in doubt, have a guess.
- Read the whole of the sentence so that you can check that your first reaction is right. If you think the answer is 'P' (positive) for example, read on in the text to make sure that the correct answer is not in fact 'P and N' (positive and negative).
- Do not copy whole chunks of the text because you might include the wrong answer as well as the right answer.
- If you are asked to give **one** reason or **one** detail, only give one.

VOCABULARY IS KEY!

Look through the vocab lists and try to refresh your memory of as much vocabulary as possible.

Translation – Top tips

- Read the whole sentence/paragraph first.
- Chunk the sentences e.g. I play / videogames / in my bedroom.
- Highlight what you don't know.
- Be as ACCURATE as you can.
- What are you being tested on, look out for different time markers.
- Make sure you reread your translation, does it make sense?

Cabot Learning Federation

Les pays francophones	French Speaking Countries
La France	France
Le Cameroun	Cameroon
Le Sénégal	Senegal
La Corse	Corsica
La Guadeloupe	Guadeloupe
La Suisse	Switzerland
La Belgique	Belgium
L'Algérie	Algeria
La Tunisie	Tunisia
La Guinée	Guinea
La Guyane	French Guiana
La Côte d'Ivoire	Ivory Coast
La Polynésie Française	French Polynesia
Le Bénin	Benin
Le Burkina Faso	Burkina Faso
Le Burundi	Burundi
Le Canada	Canada
Le Tchad	Chad
Le Congo	Congo
Le Djibouti	Djibouti
Le Haïti	Haiti
Le Luxembourg	Luxembourg
Le Madagascar	Madagascar
La République du Mali	Mali
Le Monaco	Monaco
Le Niger	Niger
Le Rwanda	Rwanda
Les Seychelles	Seychelles
Le Togo	Togo
Le Vanuatu	Vanuatu
Les Antilles	French speaking Caribbean Islands

Les directions	Directions
nord	north
nord-est	northeast
est	east
sud-est	southeast
sud	south
sud-ouest	southwest
ouest	west
nord-ouest	northwest

La géographie	Geography
Je suis francophone	I speak French
Une langue maternelle	Mother tongue
L'Hexagone	France (slang)
Les DOM TOM	French overseas territories
L'outre-mer	Overseas
Le métropole	Mainland France
Un territoire	Area
Un département	Department
Une région	Region

L'histoire	History
La révolution française	The French Revolution
La colonisation	Colonisation
La civilisation	Civilisation
Le conflit	Conflict
La culture	Culture
Le cinquième république	The 5th Republic
L 'indépendance	Independence
La liberté	Freedom
La Renaissance	The Rennaissance
Un siècle	A century
Contemporain	Contemporary
Moderne	Modern
Laïque	Secular

La langue de tous les jours	Everyday language
Bonjour!	Good morning, hello
Bienvenue.	Welcome
Pardon, excusez-moi.	Pardon, excuse me.
Parlez-vous anglais?	Do you speak English?
Je ne parle pas français.	I do not speak French.
À tout à l'heure!	See you later!
Merci/Merci beaucoup.	Thank you/Thank you very much.
Au revoir!	Goodbye!
De rien.	You're welcome.
Je ne comprends pas.	I do not understand.
Où est un bon restaurant/un bon café?	Where is a good restaurant/a good café?
Où est la plage/le centre-ville?	Where is the beach/city center?
Je cherche le métro/le gare/l'aéroport.	I am searching for the metro/train station/airport
Je cherche l'hôtel/l'hôpital/la banque.	I am searching for the hotel/hospital/bank.
Pourriez-vous prendre ma photo/notre photo?	Can you take my/our photo?
Il n'y a pas de quoi	It's nothing/don't mention it
Vas-y, Allez-y	Go on, go ahead
Bonne soirée!	Good evening!
À demain!	See you tomorrow!
Je suis desolé(e)	I'm sorry
Tu t'appelles comment?	What's your name?
Je suis perdu	I'm lost
Attention! Fais/faites attention!	Careful! Be Carefull!
Bien sûr	Of course
C'est n'importe quoi!	That's nonsense!
Laisse tomber...	Forget it...
Ça te dit?/Ça vous dit?	You up for it?
Tiens-moi au courant!	Keep me up to date!
Bref	all in all
T'sais?	Ya know?
Ça te changera les idées...	It'll take your mind off things...

Year 9 Geography
Will we ever stop human exploitation?

Human rights	Are rights we have simply because we exist as human beings - they are not granted by any state (country). These **universal** rights are **inherent** to us all, regardless of nationality, sex, national or ethnic origin, colour, religion, language, or any other status.
Universal Declaration of Human Rights (UDHR)	Adopted by the UN General Assembly in 1948, was the first legal document to set out the fundamental human rights to be universally protected.
Migrant	Someone who moves, this can be within a country or between countries. Either permanently or temporary but not as a tourist.
Immigrant	Someone that moves into a new place
Emigrant	Someone that leaves a place
Push factor	A reason that makes someone to leave (negative)
Pull factor	A reason that attracts someone to a new location
Forced migration	Movement of people away from their homes due to political conflict, natural disaster
Forced labour	Work that is involuntarily and under the menace of any penalty.
Globalisation	The process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange

Qatar is hosting the 2022 World Cup. It is building 8 new stadiums and an entire new city.
Migrants make up 94% percent of all workers in Qatar and 86% of the country's total population— the world's highest ratio of migrants to citizens. The highest proportion of migrant workers come from India and Bangladesh.

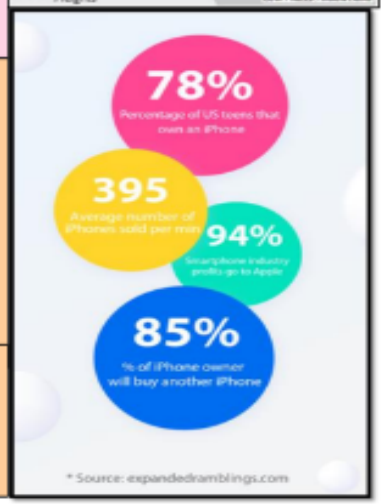
Qatar is located in Western Asia on the Persian Gulf. The capital city is Doha.

Syria is located in Western Asia. The capital city is Damascus.

Syria has faced a number of years of war and political instability. This has led to mass migration of people from Syria. People who are forced to leave their country as a result of war are refugees.

China is the biggest manufacturer of iPhones globally, with 349 suppliers.
Apple outsource to companies such as Foxconn.

Conditions that some face in factories: long 12 hour shifts, cramped living conditions, relentless and repetitive work.



Cabot Learning Federation

Year 9 German – Festivals and Traditions

Celebration /Festivals	Celebrations/Festivals
der Aschermittwoch	Ash Wednesday
der Karfreitag	Good Friday
der Karneval/der Fasching	Carnival/Carnival
der Maifeiertag	May Day
der Mutterstag	Mother's Day
Ostern	Easter
Pfingsten	Whitsun
Tag der Deutschen Einheit	Day of German Unity
der Valentinstag	Valentine's Day
Geburtstag/Halloween	Birthday/Halloween
der Neujahrstag	New Year's Day
Silvester	New Year's Eve
der Aprilscherz	April Fool's Day

Key vocab	Key vocab
die Einladung	Invitation
die Feier/das Fest	Celebration/Festival or celebration
die Festlichkeit	Celebration
der Feiertag	Public holiday
die Tradition/kirchlich	Tradition/religious
die Moschee	Mosque
die Fastenzeit	Period of fasting/Lent
die Umzüge/die Wagen	Processions/floats
der Osterhase/ das Osterei	Easter bunny/Easter egg
das Feuerwerk	Fireworks
die Kerze/das Licht	Candle/light
der Gast/der Gastgeber/die Menge	Guest/host/crowd
die Geschenke	Presents
die Zuckertüte	Cone filled with sweets
die Gastfreundschaft	Hospitality
die Party/Das Straßenfest	Party /street party

Key Vocab	Key phrases
München	Munich
Köln	Cologne
Berliner Pfannkuchen	Sweet doughnut
das Oktoberfest	October Beer festival
Scherze/Streiche	Jokes/tricks
die Hexe	Witch
das Kostüm	Costume
das Volksfest	Public festival
die Besucher	Visitors
der Grillabend	barbecue

Key verbs in infinitive	Key verbs in infinitive
bekommen	to get/to receive
danken	to thank
einladen	to invite
feiern	to celebrate
sich verkleiden	to dress up
besuchen	to visit
teilnehmen	to take part
stattfinden	to take place
dauern	to last
freuen (sich auf)	to look forward to
freuen (sich über)	to be pleased about sthg
schmücken	to decorate
verstecken /schicken	to hide/to send

Weihnachten	Christmas
der Adventzkranz	Advent wreath
der Weihnachtsbaum	Christmas tree
die Weihnachtslieder	Christmas carols
Heiliger Abend	Christmas Eve
Erste Weihnachtstag	Christmas Day
Zweite Weihnachtstag	Boxing Day
der Lebkuchen	Gingerbread
austauschen	To exchange
der Sankt Nikolas Tag	St Nicholas' Day (6th Dec)
Gänsebraten/ der Rotkohl	Roast goose/red cabbage

Key Question words	Key Question words
Wann?	When?
Warum?	Why?
Wer	Who?
Wie?	How?
Was?	What?
Was für?	What sort of?
Wo?	Where?
Wohin?	Where to?
Woher?	Where from?
Wozu?	What for? Why?
Wieso?	Why? How come?
Wie viel?	How much?
Wie viele?	How many?

German

Cabot Learning Federation

Year 9 Geography, History and culture

Ich kann sprechen	Everyday language
Guten Tag	Good day
Guten Morgen	Good Morning
Guten Abend	Good evening
Gute Nacht	Good night
Auf Wiedersehen	Goodbye
Auf Wiederhören	Goodbye (on phone)
Hallo!	Hi!
Tschüss	Bye
Grüß Gott	Hello
Wie geht's?	How are you?
Bis später	See you later
Bis morgen	See you tomorrow
Bitte	Please/you're welcome
Danke	thanks
Natürlich	Of course
Was ist los mit dir?	What's wrong with you?
Wie schade	What a pity
Es tut mir leid	I am sorry
Ich weiß nicht	I don't know
Ich verstehe nicht	I don't understand
Vielleicht	perhaps
Wie bitte?	I beg your pardon
Viel Glück	Good Luck

Erdkunde	Geography
auf dem Land	In the countryside
an der Küste	On the coast
der Fluss	River
die Gegend	area
am Meer	By the sea
der Einwohner	Inhabitant
der Baum/die Blume	Tree/flower
der Hafen	Port/harbour
in den Bergen	In the mountains
der Hügel	Hill
die Landschaft	Landscape
die Insel	Island
die Mauer	Wall
der Platz	Place/square
die Umgebung	Surrounding area
der Wald	Wood/forest
der Rhein	Rhine
Die Alpen	The Alps
Die Bundesländer	The Federal States
Bayern	Bavaria
der Schwarzwald	The Black Forest
die Mosel	Moselle
die Donau	Danube
Wien	Vienna
die Schweiz	Switzerland
Österreich	Austria
Genf	Geneva

Wo ist	Where is
im Norden	In the north
im Osten	In the east
im Westen	In the west
im Süden	In the south
die Hauptstadt	Capital city
am Stadtrund	On the outskirts of town
im Stadtzentrum	In the town centre

Erdkunde	Geography
die Ostsee	Baltic Sea
das Mittelmeer	Mediterranean
Asien	Asia
die Nordsee	North Sea
der Ärmelkanal	English Channel
Rom	Rome
Venedig	Venice
Basel	Basle
der Bodensee	Lake Constance
die S-Bahn	Suburban railway
die U-Bahn	Underground
die Straßenbahn	Tram
die Tankstelle	Petrol station
tanken	To fill up
der Zebrastreifen	Zebra crossing
das Benzin	Petrol
der Verkehr	traffic

Context

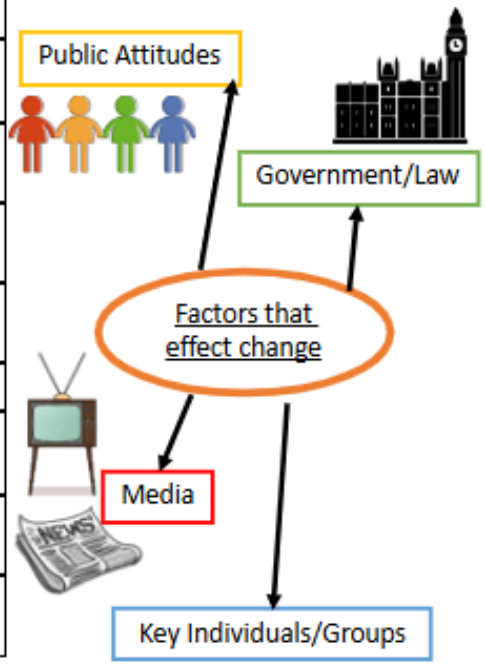
1960's and 70's Britain is often regarded as a period of revolution and change. During this topic we are going to assess how much change occurs during this time period for LGBTQ+, women and Black people.

Key Events

1	**1961** – The **Contraceptive pill** available for married women for the first time on the NHS.
2	**30th April – 17th September 1963 – Bristol Bus Boycott** took place to challenge discrimination on Bristol's buses.
3	**1965 – Race Relations Act** passed, first law to ban racial discrimination in public places and made it a criminal offence.
4	**1967 – Sexual Offences Act** was passed which decriminalised private homosexual acts between men aged over 21.
5	**1967 – Family Planning Act** passed, contraception available to all through the NHS.
6	**1968** – The first **St Pauls Carnival** took place in Bristol.
7	**7th June 1968** – 187 women sewing machinists at the Ford Motor Company plant in **Dagenham**, Essex, went on strike.
8	**9 August 1970** – Black Power activists march against police harassment of the Black community in Notting Hill, London.
9	**1 July 1972** - First **Pride march** took place in the UK, approximately 2000 protesters marched in **London**.

History – Year 9 Knowledge Organiser Term 5

How much did life change for LGBTQ+, women and Black people during the 1960's and 70's?



Key Terms

10	activism	Any action of campaigning to bring about change. Usually social or political change.
11	civil rights	The rights of citizens to political and social freedom and equality.
12	decriminalisation	To no longer to treat something as illegal or as a criminal offence.
13	equality	The state of being equal, especially in status, rights, or opportunities.
14	legalisation	To make something that was previously illegal allowed by law.
15	liberation	To set someone or something free. For example from oppression.
16	revolution	To overthrow a government or social order, in favour of a new system.
17	Second Wave Feminism	Feminists who sought to change social and sexual discrimination.

Key Skills

18	Change and continuity.	What changed and continued, stayed the same, for each group during the 60's and 70's? Why? How quickly did things change? To what extent did they change?

1968 - British Black Panthers BBP

1970 - Gay Liberation Front GLF

c.1960's – Women's Liberation Movement WLM

1978 - Organisation of Women of Asian and African Descent OWAAD

Darcus Howe *BBP*

Olive Morris *BBP*

Stella Dadzie *OWAAD*

Roy Hackett *Bristol Bus Boycott*

Paul Stephenson *Bristol Bus Boycott*

Aubrey Walter *GLF*

Bob Mellors *GLF*

Maths

RATIO AND DIRECT PROPORTION

Key Concepts

To calculate the **value** for a single item we can use the **unitary method**.

When working with best value in monetary terms we use:

$$Price\ per\ unit = \frac{price}{quantity}$$

In recipe terms we use:

$$Weight\ per\ unit = \frac{weight}{quantity}$$

If 20 apples weigh 600g. How much would 28 apples weigh?

600 ÷ 20 = 30g ⟶ weight of 1 apple

30 × 28 = **840g**

Box A has 8 fish fingers costing £1.40.
Box B has 20 fish fingers costing £ 3.40.
Which box is the better value?

$A = \frac{£1.40}{8} = £0.175$ $B = \frac{£3.40}{20} = £0.17$

Therefore Box B is better value as each fish finger costs less.

Examples

The recipe shows the ingredients needed to make 10 Flapjacks.
How much of each will be needed to make 25 flapjacks?

Ingredients for 10 Flapjacks
80 g rolled oats
60 g butter
30 ml golden syrup
36 g light brown sugar

Method 1: Unitary

80 ÷ 10 = 8
8 × 25 = **200g**

30 ÷ 10 = 3
3 × 25 = **75g**

60 ÷ 10 = 6
6 × 25 = **150g**

36 ÷ 10 = 3.6
3.6 × 25 = **90g**

Method 2: 5 flapjacks

80 ÷ 2 = 40
40 × 5 = **200g**

30 ÷ 2 = 15
15 × 5 = **75g**

60 ÷ 2 = 30
30 × 5 = **150g**

36 ÷ 2 = 18
18 × 5 = **90g**

Key Words

Unitary, Best Value, Proportion
Quantity

Useful Links

https://vle.mathswatch.co.uk/vle/
https://corbettmaths.com/contents/
https://www.bbc.co.uk/bitesize/subjects/zqhs34j

Ingredients to make 16 gingerbread men
180 g flour
40 g ginger
110 g butter
30 g sugar

1) How much will we need to make 24 gingerbread men?

2) Packet A has 10 toilet rolls costing £3.50. Packet B has 12 toilet rolls costing £3.60. Which is better value for money?

3) If 15 oranges weigh 300g. What will 25 oranges weigh?

ANSWERS 1) 270g flour, 60g ginger, 165g butter, 45g sugar 2) Packet B 30p per roll 3) 500g

Year 9 Term 6 Maths

DIRECT AND INVERSE PROPORTION

Key Concepts

Variables are **directly proportional** when the **ratio is constant** between the quantities.

Variables are **inversely proportional** when **one quantity increases in proportion to the other decreasing.**

Examples

Direct proportion:

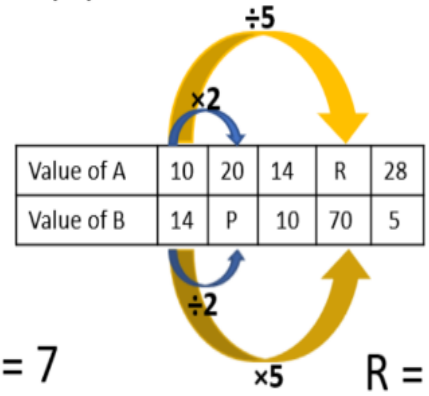
Value of A	32	P	56	20	72
Value of B	20	30	35	R	45

Ratio constant: $20 \div 32 = \frac{5}{8}$

From A to B we will multiply by $\frac{5}{8}$.
From B to A we will divide by $\frac{5}{8}$.

$P = 30 \div \frac{5}{8} = 48$
$R = 20 \times \frac{5}{8} = 12.5$

Inverse proportion:



P = 7 R = 2

Key Words

Direct, Inverse, Proportion
Divide, Multiply, Constant

Useful Links

https://vle.mathswatch.co.uk/vle/
https://corbettmaths.com/contents/
https://www.bbc.co.uk/bitesize/subjects/zqhs34j

Complete each table:

1) Direct proportion

Value of A	5	P	22
Value of B	9	28.8	Q

2) Inverse proportion

Value of A	4	P	18
Value of B	9	3	Q

ANSWERS 1) P = 16, Q = 39.6 2) P = 12, Q = 2

Maths

Year 9 Term 6 Maths

SIMILARITY - LENGTHS

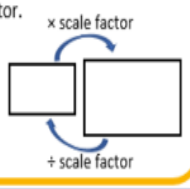
Key Concepts

Similar shapes are an enlargement of one another.

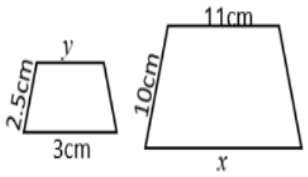
A **scale factor** is used, whereby all lengths are multiplied by the same number.

When finding a missing length on the larger shape we **multiply** by the scale factor.

When finding a missing length on the smaller shape we **divide** by the scale factor.



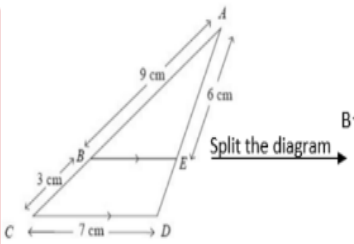
Examples



$$Scale\ factor = \frac{10}{2.5} = 4$$

$$x = 3 \times 4 = 12cm$$

$$y = 11 \div 4 = 2.75cm$$



$$Scale\ factor = \frac{12}{9} = \frac{4}{3}$$

$$x + 6 = 6 \times \frac{4}{3}$$

$$x + 6 = 8$$

$$x = 8 - 6$$

$$x = 2cm$$

$$y = 7 \div \frac{4}{3} = 5.25cm$$

Key Words

Similar, Scale factor, Enlarge, Length

Useful Links

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

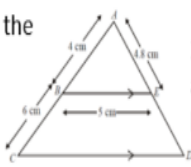
https://corbettmaths.com/contents/

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

1) Calculate the length of:

a) PR

b) BC



2) Calculate the length of:

a) CD

b) ED

ANSWERS 1a) 39cm b) 30cm 2a) 12.5cm b) 7.2cm

PLANS AND ELEVATIONS

Key Concepts

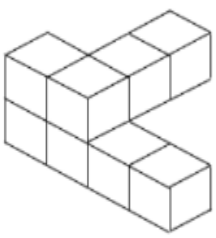
A 3 dimensional shape can be mathematically drawn from **three view points**:

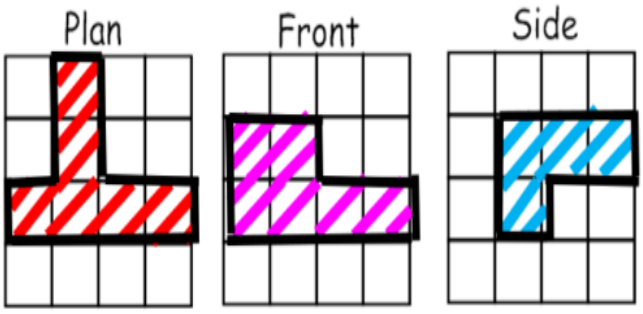
Side view
Front view
Plan view – from above

They are drawn as 2 dimensional representations

Examples

Draw this 3D shape from the side view, the front view and the plan view.





Key Words

Elevation, Plan, Side, Front

Useful Links

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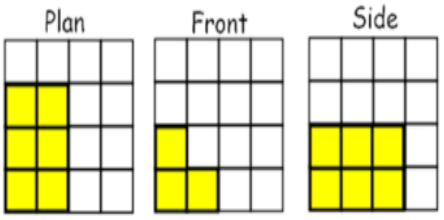
https://corbettmaths.com/contents/

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



Sketch the 3D shape that has these three views.

ANSWERS

Maths

TRANSFORMATION- REFLECTION,ROTATION AND TRANSLATION

Key Concepts

A **reflection** creates a mirror image of a shape on a coordinate graph. The mirror line is given by an equation eg. $y = 2, x = 2, y = x$. The shape does not change in size.

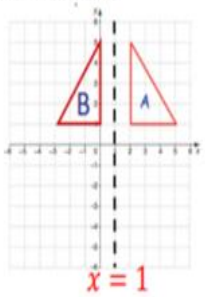
A **rotation** turns a shape on a coordinate grid from a given point. The shape does not change size but does change orientation.

A **translation** moves a shape on a coordinate grid. Vectors are used to instruct the movement:

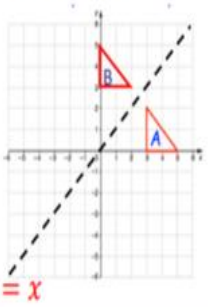
$\begin{pmatrix} x \\ y \end{pmatrix}$ Positive-Right, Negative - Left; Positive-Up, Negative - Down

Examples

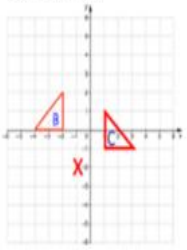
Reflect shape A in the line $x = 1$. Label it B.



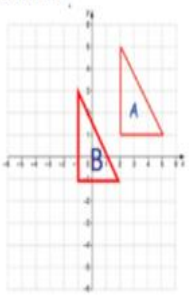
Reflect shape A in the line $y = x$. Label it B.



Rotate shape B from the point (-1, -2)



Translate shape A by $\begin{pmatrix} -3 \\ -2 \end{pmatrix}$. Label it B



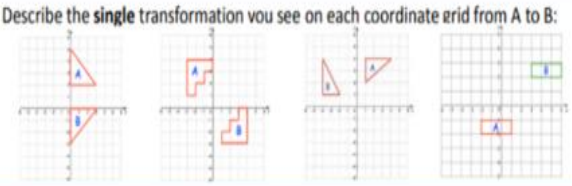
Key Words

Rotate, Clockwise, Anticlockwise, Centre, Degrees, Reflect, Mirror Image, Translate, Vector

Useful Links

https://vle.mathswatch.co.uk/vle/
https://corbettmaths.com/contents/
https://www.bbc.co.uk/bitesize/subjects/zqhs34j

Describe the **single** transformation you see on each coordinate grid from A to B:



ANSWERS: a) reflection, $y = 1$ b) reflection $y = x$ c) rotation, centre (0,0), 90° anticlockwise d) translation $\begin{pmatrix} 5 \\ 4 \end{pmatrix}$

TRANSFORMATION - ENLARGEMENT

Key Concepts

An **enlargement** changes the size of an image using a scale factor from a given point.

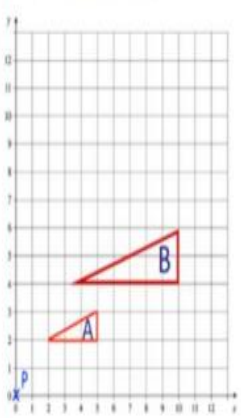
A **positive scale factor** will increase the size of an image.

A **fractional scale factor** will reduce the size of an image.

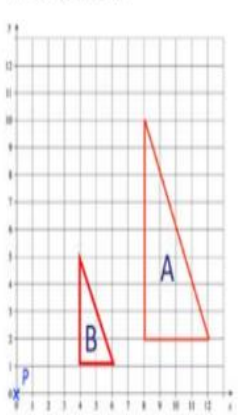
A **negative scale factor** will place the image on the opposite side of the centre of enlargement, with the image inverted.

Examples

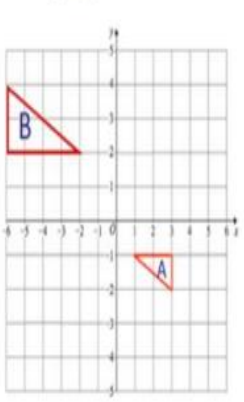
Enlarge shape A by scale factor 2 from point P.



Enlarge by scale factor $\frac{1}{2}$ from point P.



Enlarge by scale factor -2 from (0,0).



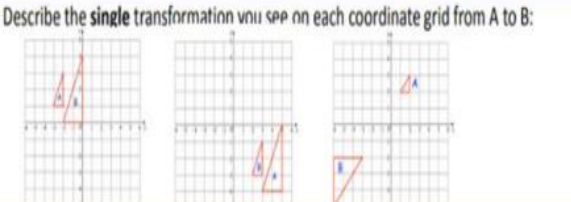
Key Words

Enlargement, Scale Factor, Centre, Positive, Negative

Useful Links

https://vle.mathswatch.co.uk/vle/
https://corbettmaths.com/contents/
https://www.bbc.co.uk/bitesize/subjects/zqhs34j

Describe the **single** transformation you see on each coordinate grid from A to B:

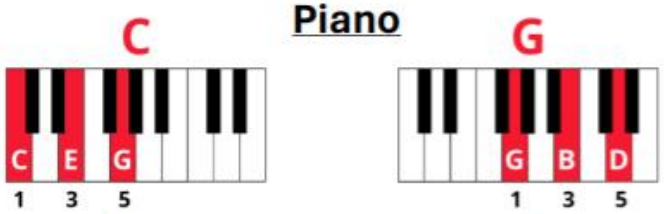


ANSWERS: a) enlarge, centre (-4,2) scale factor 2 b) enlarge, centre (1,-2) scale factor $\frac{1}{2}$ c) enlarge, centre (0,1) scale factor -3

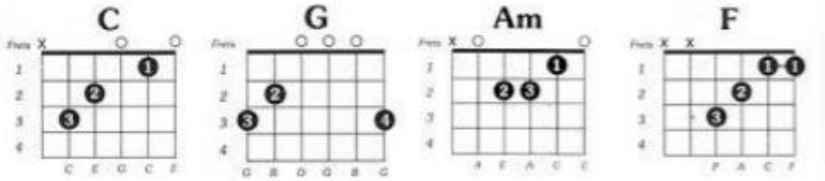
Music KO – Instrumental Skills

Chords

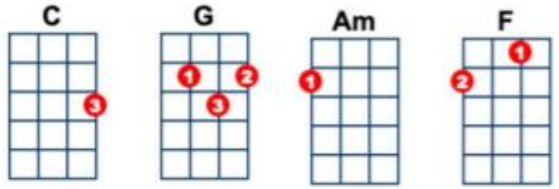
Piano



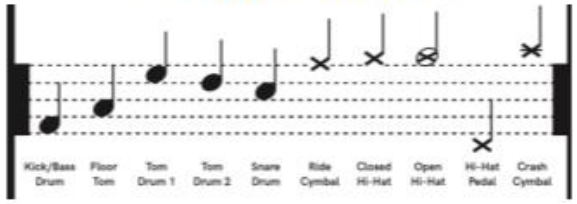
Guitar



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

PE Knowledge Organiser

COMPONENTS OF PHYSICAL FITNESS






Aerobic endurance: the ability of the cardio-respiratory system to efficiently supply nutrients and oxygen to working muscles during sustained physical activity.

Muscular endurance: the ability of the muscular system to work efficiently, where a muscle can continue contracting over a period of time against a light to moderate fixed resistance load.

Flexibility: having an adequate range of motion in all joints of the body; the ability to move a joint fluidly through its complete range of movement.

Speed: distance divided by the time taken. (Accelerative speed, pure speed, speed endurance).

Muscular strength: the maximum force (in kg or N) that can be generated by a muscle or muscle group.

Body composition: the relative ratio of fat mass to fat-free mass (vital organs, muscle, bone) in the body.

COMPONENTS OF SKILL-RELATED FITNESS





Agility: the ability of a sports performer to quickly and precisely move or change direction without losing balance or time.

Balance: ability to maintain a centre of mass over a base support. (Static, dynamic).

Coordination: the smooth flow of movement needed to perform a motor task efficiently and accurately.

Power: the product of strength and speed.

Reaction time: the time taken for a sports performer to respond to a stimulus and the initiation of their response.

Changemakers: How does belief inspire change? Knowledge Organiser

RS

NEED TO KNOW WORDS	
Activism	The use of action to bring about change
Civil Rights	Political and social equality and freedom
Civil Disobedience	refusal to comply with certain laws
Democracy	A publicly elected government
Racism	To discriminate against people of a certain race
Equality	A state of being equal
Social Justice	Fair distribution of wealth and rights in a society
Prejudice	Prejudged opinions of a person or group.
Discrimination	Unfair treatment of a group

What is activism?

The word "activism" is only about 100 years old, at least in its current use, and derives from the verb to act. An activist is someone who is active in campaigning for change, normally on political or social issues. Activism is what activists do, that is, the methods they use in order to bring about change. Human rights activism is thus about reacting to injustice, to abusive treatment, to violence or discrimination, and trying to correct it.

Christian views on prejudice and discrimination

Christians believe that all humans are made in the image of God. Therefore any action that devalues a person is an insult to God who created and loves that person:

'Love your neighbour as yourself.' - **Matthew 22:39**

Islamic views on prejudice and discrimination

Islam teaches that God created everyone as equal but different. As all are created by God, discrimination against any human is unjustified. The ummah crosses all gender, race and wealth boundaries:

"All human beings are equal like the teeth of a comb." - ***Hadith***

Social Justice – Malcolm X

Malcolm X was an important leader who fought against racism and worked to empower Black people in the United States. He believed that Black people should have control over their own lives and communities, and he criticized the way that mainstream civil rights leaders were approaching the issue. He contributed to social justice by:

- Promoting Black independence and challenging the idea of white superiority.
- Advocating for Black economic and political power through initiatives such as Black nationalism and separatism.
- Highlighting the impact of systemic racism and institutional discrimination on the Black community.

Examples of Activism

Demonstrations and protests	During a demonstration or a protest, people united by a common belief meet together. They might march along a specific route, sit in at a specific place to draw attention to the cause, or hold a vigil to honour someone's life
Boycotts	to refuse to buy a product or take part in an activity as a way of expressing strong disapproval
Strikes	When workers deal with unfair or dangerous work conditions, low wages, or other issues, they might refuse to work when negotiations are refused or they fail.
Social media campaigns	Also known as "hashtag activism," it brings activism to social media networks like Instagram and Twitter. Users raise awareness of issues, organizations, and actions through posts, graphics, videos, and more.

Changemakers: How does belief inspire change? Knowledge Organiser

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NEED TO KNOW WORDS

Conviction	A firmly held belief or opinion
Marginalised	individuals or groups who are excluded from mainstream society
March on Washington	the historic civil rights march on Washington D.C. on August 28, 1963, where Martin Luther King Jr. delivered his famous "I Have a Dream" speech.
LGBTQ+ rights	equal rights and protections of LGBTQIA+ individuals

Racism– Martin Luther King Jr

Martin Luther King Jr. was a famous civil rights leader who fought for racial equality and social justice in the United States during the mid-20th century.

Influence of Beliefs:

Christian beliefs strongly influenced his activism and his vision for social justice. He saw the struggle for civil rights as a moral issue, and he believed that all people were created equal in the eyes of God. He emphasised the importance of love and nonviolence in the struggle for justice, drawing on Jesus' teachings in the New Testament.

Contributions to change

- Advocating for nonviolent protests to challenge racial discrimination and segregation.
- Leading the Montgomery Bus Boycott and the **March on Washington**, which brought national attention to the Civil Rights movement.
- Promoting racial equality and the end of segregation through the Civil Rights Act of 1964 and the Voting Rights Act of 1965.

Education – Malala Yousafzai

Malala Yousafzai is a Pakistani education activist who has become a prominent voice for girls' education and women's rights.

Influence of Beliefs:

Malala Yousafzai is a Muslim, and her faith has played a significant role in inspiring her activism for girls' education and women's rights.
She drew on the example of Prophet Muhammad, who taught that seeking knowledge was a duty for both men and women, to inspire her own advocacy for girls' education.

Contributions to change

- Advocating for girls' education in Pakistan.
- Co-founding the Malala Fund to promote girls' education around the world
- Speaking out on a variety of global issues, including refugees, climate change, and social justice.

LGBTQI+ – Marsha P Johnson

Marsha P. Johnson was a Black transgender woman and LGBTQ+ rights activist who fought for justice and equality for marginalized communities.

Contributions to change

- Being a prominent figure in the Stonewall uprising of 1969, which is widely considered a turning point in the fight for LGBTQ+ rights
- Co-founding the Street Transvestite Action Revolutionaries (STAR) which provided housing and support to homeless transgender youth.
- Challenging traditional gender norms.
- Promoting the idea that all people should be free to express their true selves.

Impact on religion:

Marsha P. Johnson's legacy has inspired many religious communities to re-examine their traditional teachings on gender and sexuality. Some religious organizations have even begun to recognize and celebrate the lives of LGBTQ+ figures like Marsha P. Johnson as part of their own religious traditions, highlighting the intersections between faith and social justice.

Changemakers: How does belief inspire change? Knowledge Organiser

RS

NEED TO KNOW WORDS

Speciesism	The belief that one species, typically humans, is superior to and has the right to dominate over other species
Climate change	Refers to the long-term changes in the Earth's climate primarily due to human activities such as burning fossil fuels and deforestation.
Ummah	the global community of Muslims

Christian views on Activism

Many Christians believe that they are called to work for justice and to serve others, based on the teachings of Jesus Christ. They see activism as a way to live out their faith and to make a positive impact in the world. This can take many different forms, including political advocacy, social justice work, and community service.

At the same time, many Christians also believe in the importance of prayer, worship, and spiritual reflection as a way to sustain their activism and to remain connected to God's guidance and wisdom. They see activism as part of a larger spiritual journey, and they believe that their faith can provide strength and inspiration for their work.

Speciesism – Peter Singer

Peter Singer is a philosopher and ethicist who is known for his work in animal rights

Contributions to change

- Criticizing the use of speciesism, or the belief that humans are superior to other animals, as a justification for the exploitation and mistreatment of non-human animals.

Significance

Peter Singer's secular humanist worldview has led him to be a strong advocate for the rights and well-being of all beings, and has inspired many people to re-examine their own ethical beliefs and values.

Climate – Extinction Rebellion

a global environmental movement that aims to raise awareness about the climate crisis and the urgent need for action to prevent further damage to the planet.

Aims:

To pressure governments and other institutions to take immediate action to address the climate crisis, including reducing carbon emissions, transitioning to renewable energy, and protecting biodiversity.
XR also advocates for systemic change that would move away from a fossil fuel-based economy and toward a sustainable and just society.

Activism:

The methods used by XR include nonviolent civil disobedience, such as blocking roads and disrupting public spaces, as well as other forms of protest and direct action. The movement believes that such tactics are necessary to draw attention to the urgency of the climate crisis and to pressure those in power to take action.

Islamic views on Activism

In Islam, the concept of social justice is central, and Muslims believe that they have a responsibility to work for the betterment of society and to alleviate the suffering of those in need. This can take many forms, including political activism, social welfare work, and community service.

Muslims also believe in the importance of prayer and worship as a way to connect with God and to seek guidance and inspiration for their work. They see activism as a way to live out the principles of their faith and to embody the teachings of the Prophet Muhammad.

Science

EDEXCEL 9-1 Combined Science | Year 10 **Physics Topic 1 – Motion, Forces and Energy** | Required Knowledge

CPG F & H tier p145-164

Vector	Scalar
A property with magnitude (size) & direction.	A property with magnitude (size) only.
Velocity	Speed
Displacement	Distance
Weight	Mass
Acceleration	
Force	

Acceleration: units: m/s². Speeding up or slowing down. Two equations to learn:

$$v - u = a \times t$$

a = acceleration
v = final velocity
u = initial velocity
t = time taken

And:

$$v^2 - u^2 = 2 \times a \times s$$

Where s = distance.
Slowing down is negative acceleration, **not** deceleration.

Newton's First Law: An moving object will continue to move at the same velocity (speed and direction) until acted on by a resultant force.

Or:

A stationary object will remain at rest until acted on by a resultant force.

Mass	Weight
How much matter there is.	The force of gravity acting on the mass.
Same regardless of location.	Changes depending on location (e.g., different planets).
Measured in kilograms (kg).	Measured in Newtons (N).
Scalar (size only).	Vector (size and direction).

Weight = mass x gravitational field strength

$$W = m \times g$$

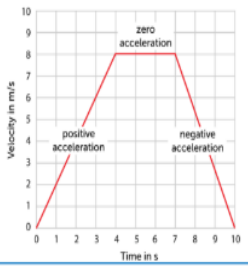
On Earth, $g = 10\ N/kg$.

Average speed is calculated using this equation:

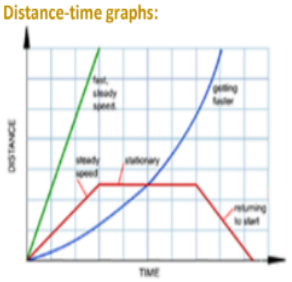
$$\text{Speed (m/s)} = \frac{\text{total distance (m)}}{\text{total time (s)}}$$

formula triangle

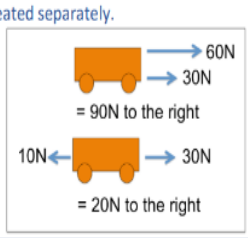
Velocity-time graph: Area under the line = distance travelled.



Distance-time graphs:



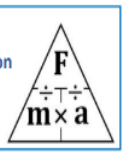
Resultant forces: Forces acting on an object can be added together to give the resultant force. Remember some forces are **negative** because force is a **vector**. Horizontal and vertical forces must be treated separately.



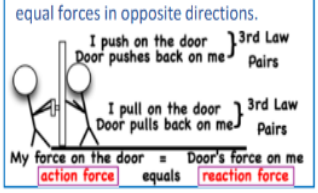
Newton's Second Law:

Force = mass x acceleration

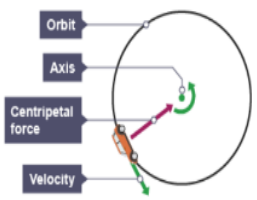
$$F = m \times a$$



Newton's Third Law: Two objects interacting with one another experience equal forces in opposite directions.



H – Circular motion: An object moving in a circle is constantly changing direction. Change in direction means change in velocity, and therefore the object is accelerating (positive or negative) even if its speed does not change. This means a force is required to keep the object moving in a circle. This force is called the **centripetal force.**



H – Momentum: A measure of how hard it is to stop an object moving. Vector. Units: kg.m/s.

Momentum = mass x velocity

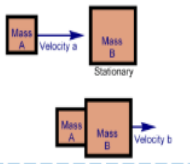
$$p = m \times v$$

To change the momentum of an object, a resultant force is needed:

$$\text{Force} = \frac{\text{Change in momentum}}{\text{time}}$$

$$F = \frac{mv - mu}{t}$$

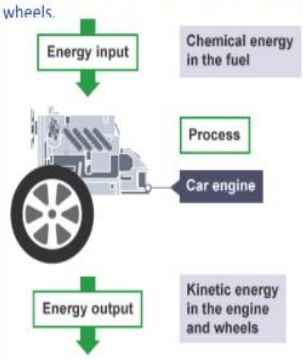
Collision between two objects: The total momentum is conserved before and after the collision.



Energy stores: Energy is stored in different ways.

- **Chemical energy:** Stored in chemical form, e.g.: food, fuel (e.g. petrol), batteries.
- **Kinetic energy:** Stored in moving objects, e.g. car, train, sprinter.
- **Thermal energy:** Stored as heat, e.g.: hot water.
- **Elastic potential energy:** Stored in stretched materials, e.g.: springs, rubber bands.
- **Gravitational potential energy:** Stored in objects raised a height above ground, e.g. a ball held above the ground.
- **Nuclear energy:** Stored inside atoms.

Conservation of energy: Energy cannot be created or destroyed. It can only be transferred from one store to another. For example, a car transfers energy from the chemical store (fuel) to the thermal store (in the engine) and then to the kinetic store (in the wheels). The total amount of energy stays constant. This is the **law of conservation of energy**. Some of the energy is transferred to the thermal store as friction and not to the kinetic store in the wheels.



Energy: Energy is a body's capability to have an effect on its surroundings. For example: A hot cup of tea will heat the air around it and the table top it sits on. Units: Joules (J).

Stopping distance = thinking distance + braking distance.

Thinking distance:

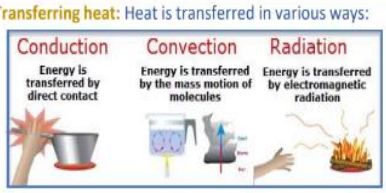
- The distance travelled in the time between the driver seeing the situation and reacting.
- Affected by: tiredness; drugs; alcohol; illness; distractions (e.g. using a mobile phone).

Braking distance:

- The distance travelled while the brakes are applied.
- Slows the car down by friction.
- Affected by: Road conditions (e.g. loose gravel, wet); tyre conditions; weight of the vehicle.

Crash hazards: Rapid acceleration (positive or negative) – like in a car crash – is dangerous to the human body. Cars have **crumple zones** where the engine compartment crumples in a crash, increasing the time over which the impact takes place. This reduces the size of the acceleration felt by the passengers.

Transferring heat: Heat is transferred in various ways:



Kinetic energy = ½ x mass x (velocity)²

$$KE = \frac{1}{2} \times m \times v^2$$

Gravitational potential energy = mass x gravitational field strength x height.

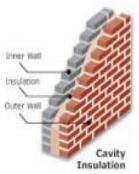
$$GPE = m \times g \times h$$

Non-renewable resources include coal, oil and gas, known as fossil fuels. When burnt they release carbon dioxide and other gases, which contribute to climate change. Nuclear fuel (uranium) is also non-renewable but contributes less to climate change. Instead it leaves nuclear waste, which remains dangerous for thousands of years.

Renewable resources include solar cells, hydroelectricity, wind turbines and tidal power. Renewable resources will not run out. They do not generate carbon emissions. Renewable resources are being increasingly used as they become cheaper and as non-renewable resources begin to run out. Bio-fuels are made from animal waste or plants. They are burned to generate energy.

Keeping warm: It is difficult to keep a house warm because heat energy tends to spread. Insulation stops heat spreading.

Cavity wall insulation reduces heat loss because the air gaps stop heat energy being conducted from inside to outside.

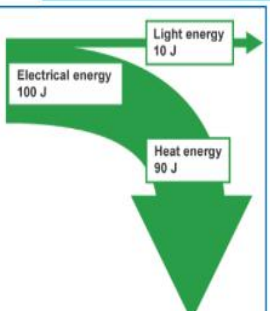


Energy diagrams:

Energy transfers between energy stores can be represented by Sankey diagrams.

In a Sankey diagram, the width of the arrow represents the amount of energy transferred. The arrow splits into different directions for transfers to different energy stores.

The Sankey diagram opposite shows energy transfers in a filament light bulb. It shows that most of the energy is wasted as heat.



Energy efficiency: Energy cannot be created or destroyed. Some energy is transferred to the useful store (light in the case of the lightbulb). Some of the energy is transferred to a different store and is wasted (heat in the case of the lightbulb).

$$\text{Efficiency} = \frac{\text{Useful energy transferred by the device}}{\text{Total energy transferred by the device}}$$

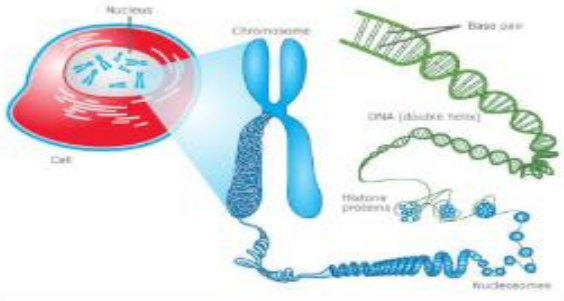
A lightbulb which consumes 100 J of electrical energy and outputs 10 J of light energy has an efficiency of 0.10.

EDEXCEL 9-1 Combined Science | **Biology Topic 3 – Genetics** | Required Knowledge

CPG F & H tier: pages 27-28.

DNA (Pg 27)

- **DNA** is the genetic material contained in the **nucleus** of a cell
- The entirety of the human DNA is called the **genome**.
- DNA is contained within the chromosomes inside the nucleus.
- It has a double helix shape.

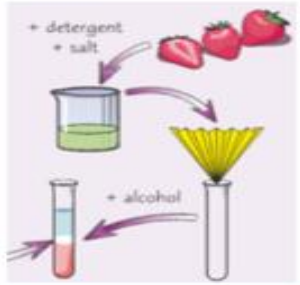


Base pairs (Pg 27)

- Four base pairs:
  - A (adenine)
  - T (thymine)
  - C (cytosine)
  - G (guanine)
- Base pairs are bonded together with **hydrogen bonds**
- **A always bonds with T, C always bonds with G**
  - These are known as complimentary base pairs
- Each base is attached to a **sugar** and **phosphate** backbone. Together these are known as a **nucleotide**.

Extracting DNA (Pg 27)

1. Mix washing up liquid **(breaks down cell membranes)** and salt **(clumps DNA together)**
2. Mash fruit **(breaks up cells)**
3. Filter **(separates solid lumps of fruit and the now dissolved DNA)**
4. Gently add ice-cold ethanol **(DNA is insoluble in ethanol, so precipitates out to be collected).**



Genes & Alleles (Pg 28)

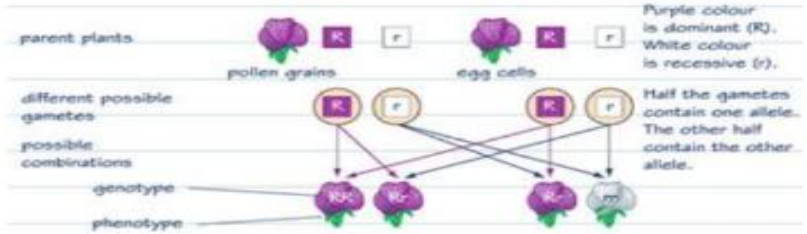
- Genes are short lengths of DNA that code for s specific protein.
- This means they control certain features (e.g. eye colour)
- Alleles are different versions of the same gene (e.g. blue eye gene or brown eye gene.)
- You have two alleles for each gene, one from Mum and the other from Dad.
- Alleles can be dominant (use a capital letter) or recessive (use a lower-case letter)
  - Aa

Genetics keywords (Pg 28)

Key word	Definition
Gene	A section of DNA that codes for one thing.
Allele	A different version of the same gene.
Offspring	The 'children' of an organism.
Dominant	The stronger allele.
Recessive	The weaker allele.
Homozygous	Having 2 of the same allele.
Heterozygous	Having 2 different alleles.
Genotype	The different alleles that an organism has e.g. Rr
Phenotype	The characteristic the organism has. E.g. purple flowers

Genetic diagrams (Pg 28)

- Used to predict the possible outcomes of a cross depending on the parents genotypes.
- Two kinds



- Punnett squares are easier to use

Father's genotype

Mother's genotype	R	r
R	R R	r R
r	R r	r r

EDEXCEL 9-1 Combined Science | **Biology Topic 3 – Genetics** | Required Knowledge

CPG F & H tier: pages 6, 28-31

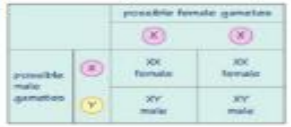
Probabilities (Pg 28)

- Possible outcomes are represented as probabilities.

- RR = 1/4 = 25% = 0.25
- Rr = 2/4 = 50% = 0.50
- Rr = 1/4 = 25% = 0.25

Sex determination (Pg 29)

- The sex of a child dependent on the 23rd pair of chromosomes (either X or Y)
  - XX = woman
  - XY = Man
- Use a Punnett square to show the probability of having a boy or girl.



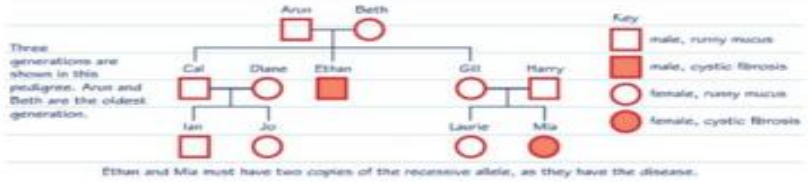
- XX = 2/4 = 50% chance girl
- XY = 2/4 = 50% chance of boy

Variation (Pg 30)

- Differences in the same species is known as **variation**.
- Variation can be **inherited** from parents (e.g. eye colour)
- Variation can be **environmental** (e.g. a scar or tattoo)
- Variation can be a combination of **both** inheritance and environment. (e.g. weight)

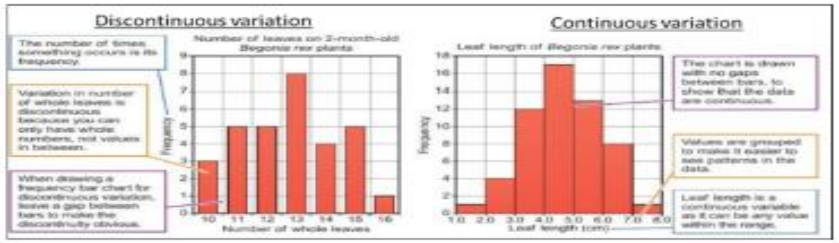
Pedigree charts (Pg 29)

- Used to track genetic disorders which can be passed from parent to child.
- Parents can be carrier of the gene that causes the disease but not suffer with the disease.



Studying variation (Pg 6)

- Data gathered can be either continuous (data can be any value in a range) or discontinuous (data can only take on a limited number of values)
- Plotted on bar graphs with differences in how each is plotted.



Mutation (Pg 30)

- Mutations are caused by changes to the original DNA code in an organism.
- Mutations can cause changes in phenotype if the code of certain genes is changed.
- These changes to specific genes bring about different alleles.
- Mostly mutation cause no change to phenotype at all.

Human Genome Project (Pg 31)

- Complete map of the human genome.
- Decoding the base pairs making up all the genes in our DNA.
- Took 13 years to complete.

- Advantages
  - Predicting and preventing inherited diseases (see if genes known to interact to cause like heart disease or cancer present – make changes to lifestyle accordingly)
  - Testing and treatment for inherited disorders (look to see if disease exists before baby is born)
  - Development of new drugs where known interactions between drugs and genes is known.
- Disadvantages
  - Stress/worry (if you possess a known disease gene)
  - Gene-ism (people pressured not to have a baby of they have a known gene)
  - Discrimination (people with known genes prevented from getting jobs or health insurance)

EDEXCEL 9-1 Separate Science | **Biology Topic 3 – Genetics** | Required Knowledge

CPG Biology: pages 36-37. 40-41.

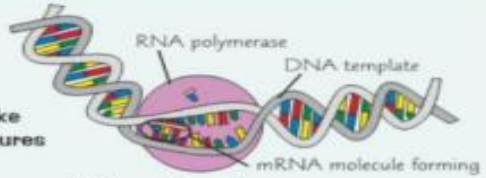
Transcription & translation (Pg 36)

- Proteins made in two stages

Transcription

- Uses mRNA to read the code on the DNA strand
- Base pair Uracil (U) instead of thymine (T)

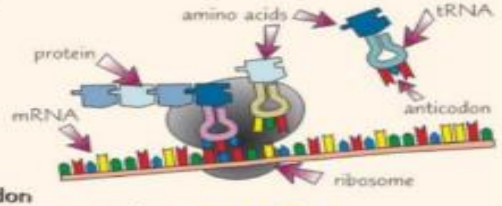
1) RNA polymerase binds to a region of non-coding DNA in front of a gene.
2) The two DNA strands unzip and the RNA polymerase moves along one of the strands of the DNA.
3) It uses the coding DNA in the gene as a template to make the mRNA. Base pairing between the DNA and RNA ensures that the mRNA is complementary to the gene.
4) Once made, the mRNA molecule moves out of the nucleus and joins with a ribosome.



Translation

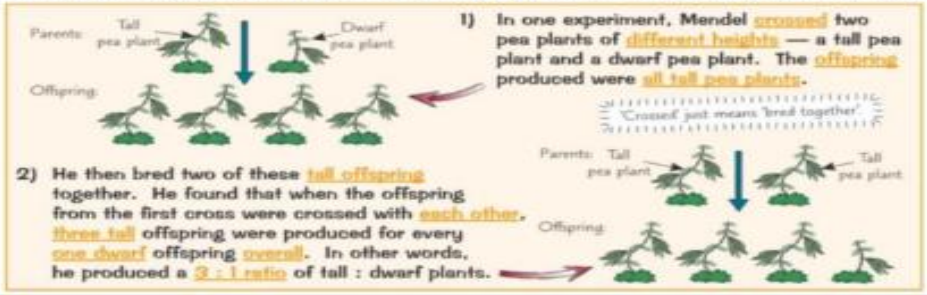
- mRNA binds to a ribosome (site of protein synthesis)
- Protein is then assembled

1) Amino acids are brought to the ribosome by another RNA molecule called transfer RNA (tRNA).
2) The order in which the amino acids are brought to the ribosome matches the order of the base triplets in mRNA. Base triplets in mRNA are also known as codons.
3) Part of the tRNA's structure is called an anticodon — it is complementary to the codon for the amino acid. The pairing of the codon and anticodon makes sure that the amino acids are brought to the ribosome in the correct order.
4) The amino acids are joined together by the ribosome. This makes a polypeptide (protein).



Gregor Mendel (Pg 37)

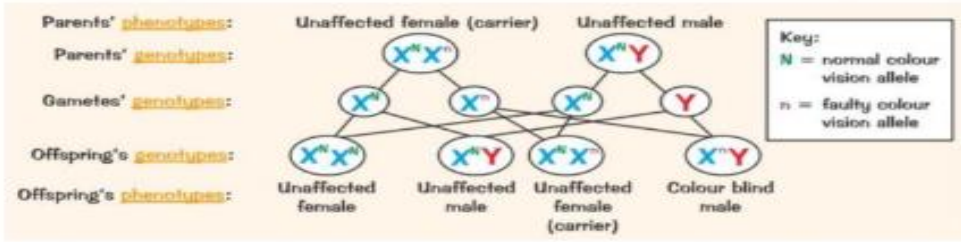
- Identified the presence of dominant and recessive genes through his work on peas



1) In one experiment, Mendel crossed two pea plants of different heights — a tall pea plant and a dwarf pea plant. The offspring produced were all tall pea plants.
2) He then bred two of these tall offspring together. He found that when the offspring from the first cross were crossed with each other, three tall offspring were produced for every one dwarf offspring overall. In other words, he produced a 3 : 1 ratio of tall : dwarf plants.

Sex-linked disorders (Pg 40)

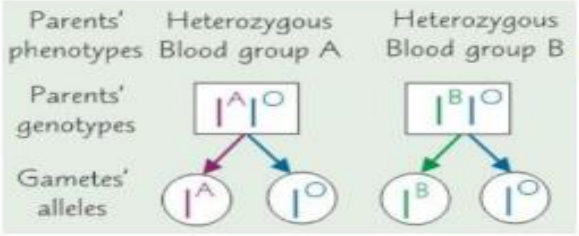
- X and Y chromosomes are a different length (Y is shorter)
- Genes present on the longer part of the X chromosome automatically expressed in the phenotype of a boy as there is no corresponding gene to compete with it.
- Sex-linked disorders more likely to be seen in boys because of this.
- For example: colour-blindness

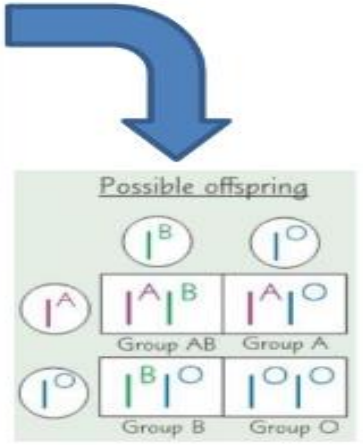


- No possible colour blind female offspring, 50% chance of colour blind if having a boy.

Blood groups (Pg 41)

- Four blood groups (A, B, AB & O).
- Three possible alleles (I^O, I^A & I^B) – this is known as codominance
- I^A & I^B are codominant with each other, I^O is recessive
- Blood group AB caused by having I^AI^B genotype



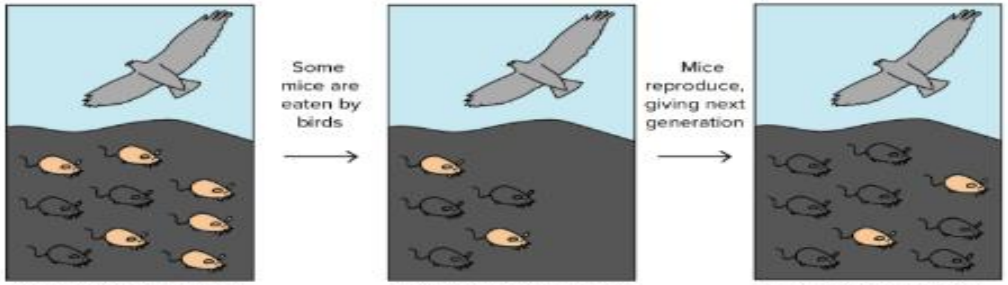


EDEXCEL 9-1 Combined Science | **Biology Topic 4 – Natural Selection and Genetic Modification**

CPG F & H tier: pages 32-36.

Natural Selection (p32)

1. Genetic variation exists in populations because of mutations
2. Selection pressures happen (competition, predation etc)
3. Some individuals are better adapted to the conditions
4. They are more likely to survive and reproduce – 'survival of the fittest'
5. The alleles causing the variation are more likely to be passed on
6. Individuals less well adapted die



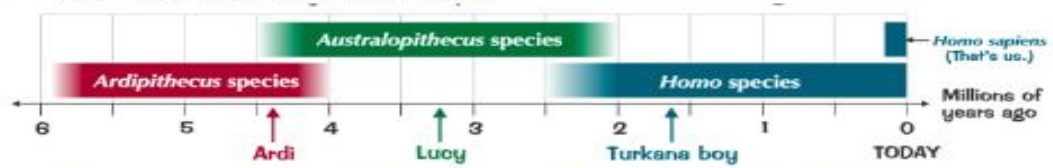
A population of mice has moved into a new area where the rocks are very dark. Due to natural genetic variation, some mice are black, while others are tan.

Tan mice are more visible to predatory birds than black mice. Thus, tan mice are eaten at higher frequency than black mice. Only the surviving mice reach reproductive age and leave offspring.

Because black mice had a higher chance of leaving offspring than tan mice, the next generation contains a higher fraction of black mice than the previous generation.

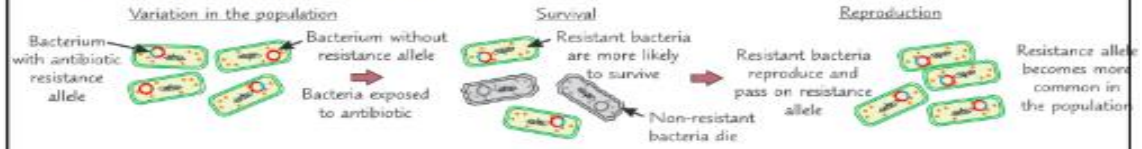
Evidence for Evolution (p32/33/34)

- Fossils arranged in date order show gradual changes in organisms over time
- Key hominid (human-like) fossils:

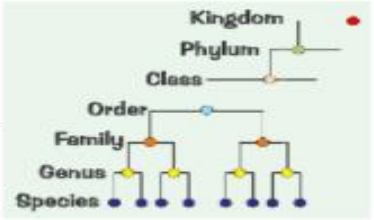


- Over time the features of the fossils changed from more ape-like to more human-like; arms got shorter, legs got longer, feet became adapted for walking not climbing, brain got bigger
- Tools found with the fossils of Homo species also got more complex over time (they help date fossils using carbon dating on wood or looking at depth in older rocks

- Bacteria and antibiotic resistance



Classification (p35)



- Organisms are classified (grouped) using similarities and differences
- <u>5 kingdom classification system</u>
- Animals, plants, fungi, prokaryotes (single-celled organisms with no nucleus, protists (single-celled organisms with a nucleus/eukaryotes)
- Kingdoms are subdivided to smaller groups with more in common
- <u>3 Domain classification system</u>
- Technology and understanding of DNA led to a new classification system with 3 large groups (prokaryote kingdom split into 2)
- Eukarya : animals, plants, fungi and protists
- Bacteria: single celled organisms with no nucleus
- Archaea: organisms which look like bacteria but have difference in DNA

Breeds and Varieties (p35)

- Breeds = animals e.g. dog breeds
- Varieties = plants e.g. apple varieties

Selective Breeding (p36)

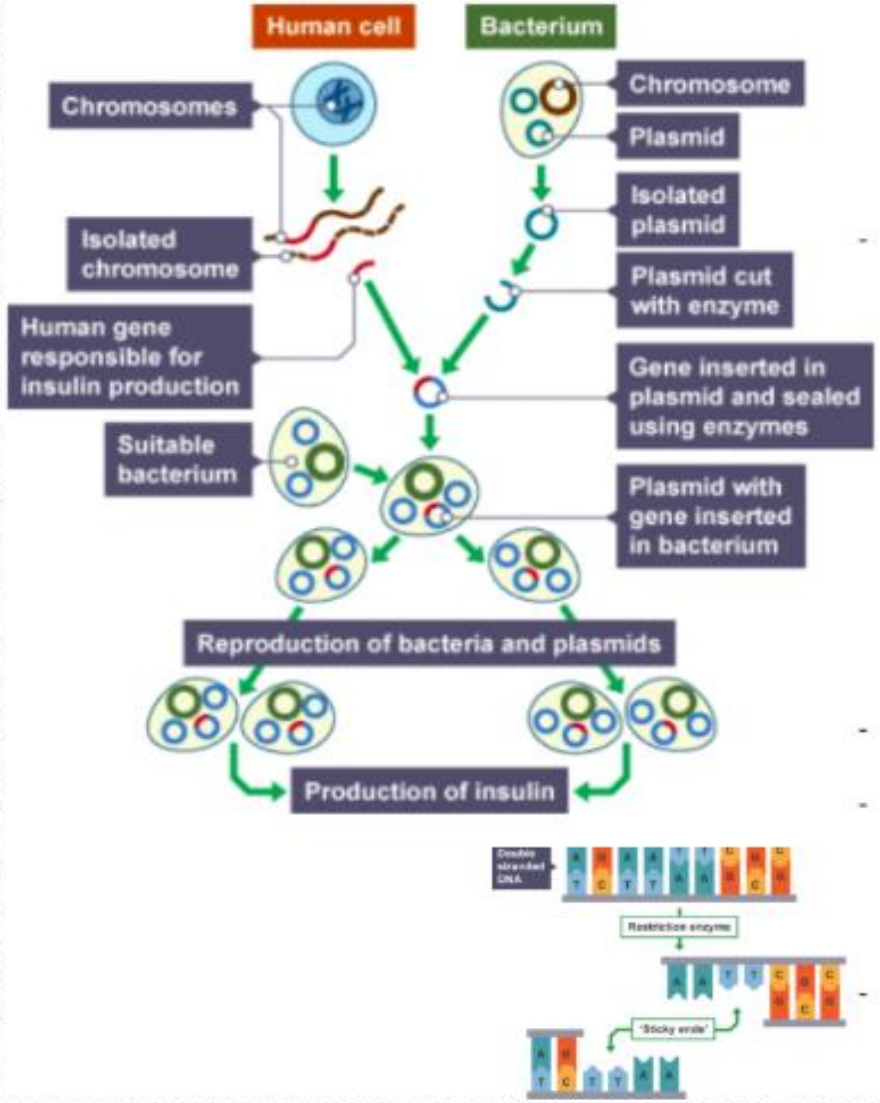
1. Humans choose organisms with the characteristics they want
2. They breed them together
3. They select the best of the offspring, and breed them together
4. Continue for several generations until all offspring have the desired characteristic

- Useful in farming e.g. producing animals with more milk or meat
- However, it reduces the gene pool, the best organisms are always used and they are closely relate = inbreeding which can cause health problems
- Also the lack of variation in the population means that if one organisms is affected by a new disease the others are also likely to be affected

EDEXCEL 9-1 Combined Science | **Biology Topic 4 – Natural Selection and Genetic Modification**

CPG F & H tier: pages 37.

Higher - Genetic engineering of bacteria (p37)



- Genetic engineering changes an organisms DNA to introduce desirable characteristics
- It uses **vectors** (carriers). There are 2 types: **Plasmids**, which are circular molecules of DNA which can be transferred between bacteria **Viruses** which insert DNA into the organism the infect
- It also uses 2 types of enzyme:
- **Restriction enzyme** to cut DNA at specific point leaving 'sticky ends'
- **Ligase** to join pieces of DNA using sticky ends

Genetic engineering in agriculture (p37)

- Used to produce crops resistant to herbicides so weeds can be killed without killing plants
- Used to make crops resistant to insect pests to improve yields (feed a growing population) and reduce use of pesticides
- Concerns about effect on the organism, effect on food chains and human health and about transfer of genes out into the environment - 'superweeds'
- Can produce more food in other ways to avoid these risks e.g. use of fertilisers, biological control of pests by introducing predators (although this can cause problems as they are usually non-native)

Don't forget to try the revision questions for topics 3 & 4 on page 38!

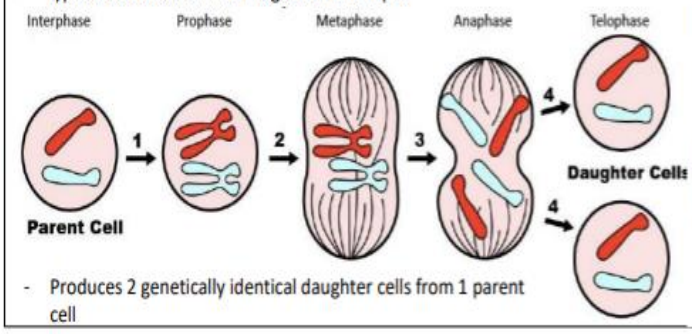
Science

EDEXCEL 9-1 Combined Science | **Biology Topic 2 – Cells and Control** | Required Knowledge

CPG F & H tier: pages 20-22. 26.

Mitosis (p20)

- Type of cell division used for growth and repair

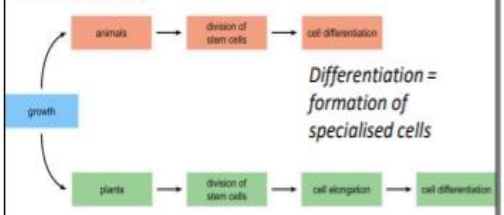


- Produces 2 genetically identical daughter cells from 1 parent cell

Interphase – cell makes extra sub-cellular parts. DNA replication occurs, chromosome copies stay attached.
Prophase – nucleus breaks down and spindle fibres appear. Chromosomes become visible
Metaphase – chromosomes use spindle fibres to line up along the **m**iddle of the cell.
Anaphase – chromosome copies are separated and move **a**part to each end of the cell using spindle fibres.
Telophase – a new nuclear membrane forms around each set of chromosomes.
Cytokinesis – new cell membrane forms to separate the 2 daughter cells.

IPMATC

Growth (p21)

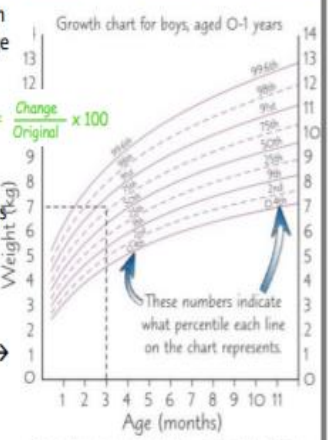


Differentiation = formation of specialised cells

- Measure growth using percentage change

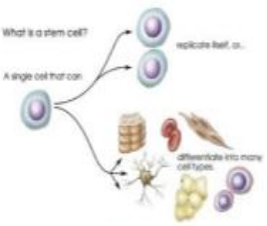
Percentage change = $\frac{\text{Change}}{\text{Original}} \times 100$

- Or using percentile charts which divide a measurements from a large group into 100 equal sections →



E.g. a three-month-old who weighs 7 kg is just above 75th percentile — roughly 75% of three-month-olds are lighter and 25% are heavier.

Stem Cells (p22)

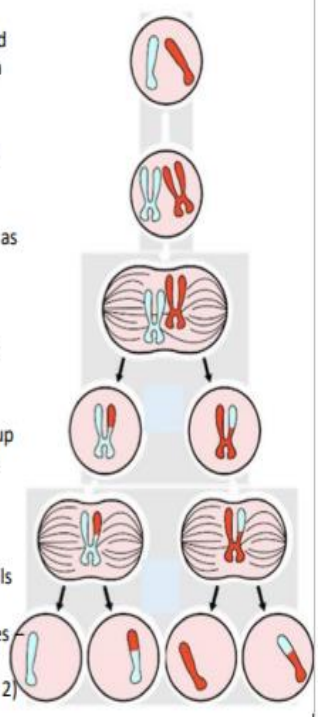


- Embryonic stem cells found in embryos can differentiate into any specialised cell
- Adult stem cells are limited in the type of cell they can differentiate into
- Lots of potential uses
- Ethical issues

- Plant stem cells called meristem cells are found in shoots and roots and can differentiate into any cell type

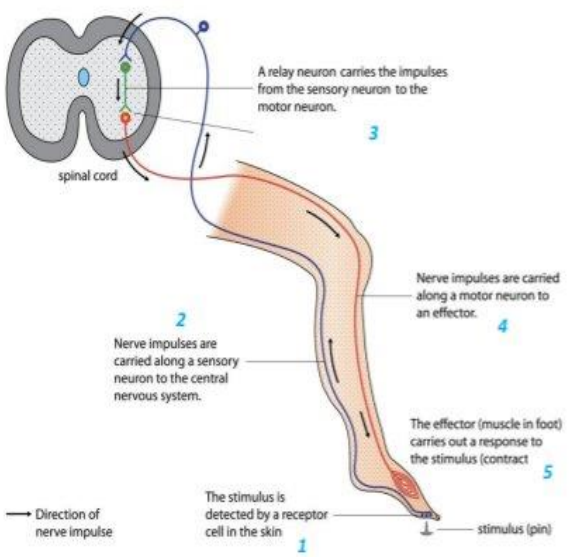
Meiosis (p26)

- Type of cell division used to form gametes (sperm and egg cells)
- Produces 4 genetically different daughter cells from 1 parent cell
- The chromosomes are copied in the same way as mitosis
- Pairs of copied chromosomes line up along the middle of the cell
- The pairs separate
- The chromosomes line up along the middle of the cell again
- The copies within each pair then separate
- This leaves 4 haploid cells (half of the original number of chromosomes in this diagram 1 chromosome instead of 2)



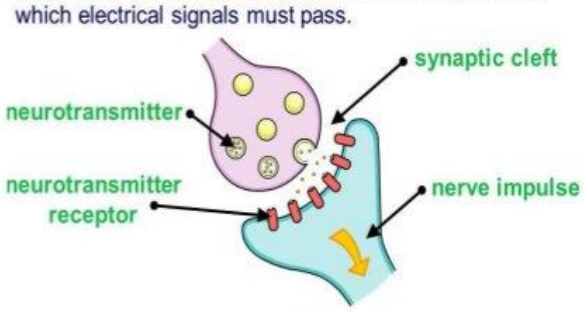
Reflexes (p24)

- An automatic response to a stimulus



Synapses (p24)

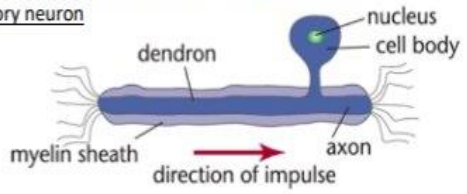
A **synapse** is a junction between two neurones across which electrical signals must pass.



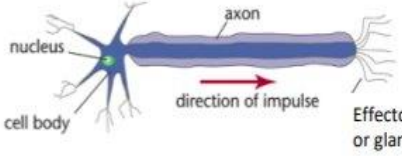
Neurotransmitter molecules diffuse from vesicles towards the neurotransmitter receptors, moving from an area of high concentration to low concentration.

Nervous System (p23)

- Central nervous system = brain and spinal cord
- Peripheral nervous system = all other neurons (nerve cells) around the body, including sensory motor and relay neurons
- Sensory neuron



- Motor neuron



Don't forget to try the revision questions for topics 1 & 2 on page 25!

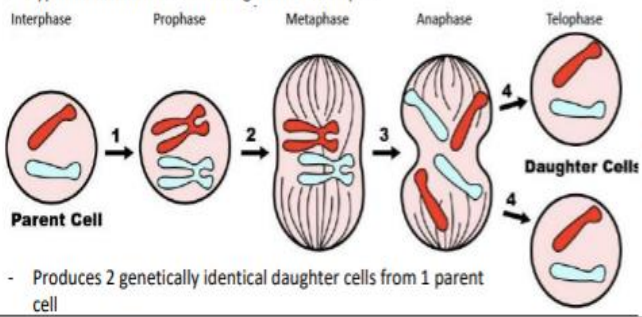
Science

EDEXCEL 9-1 Biology | **Topic 2 – Cells and Control** | Required Knowledge

CPG Biology: pages 24-26. 32.

Mitosis (p24)

- Type of cell division used for growth and repair



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IPMAT

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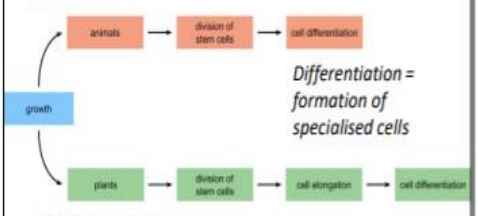

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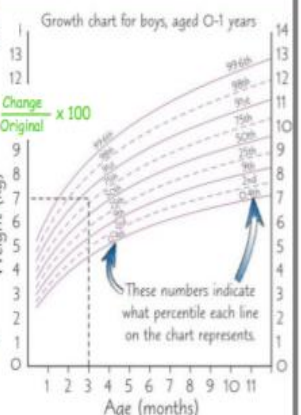

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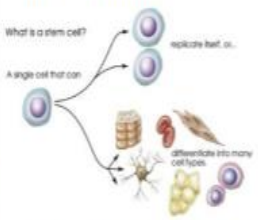

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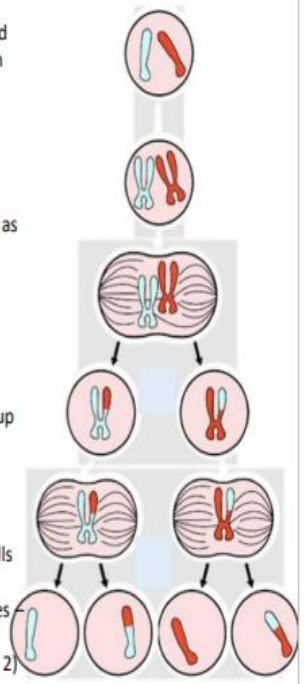
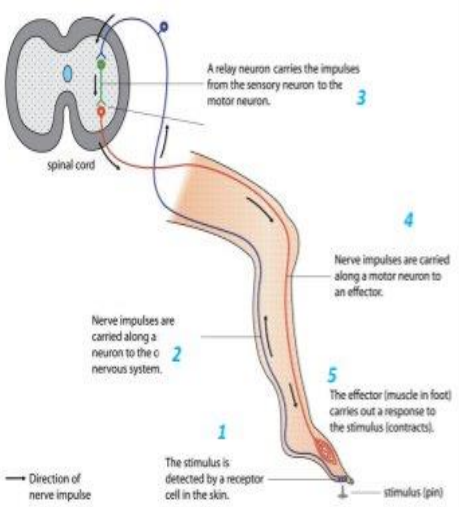
- The copies within each pair then separate
- This leaves 4 haploid cells (half of the original number of chromosomes in this diagram 1 chromosome instead of 2)



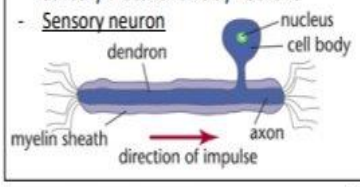
Reflexes (p29)

- An automatic response to a stimulus

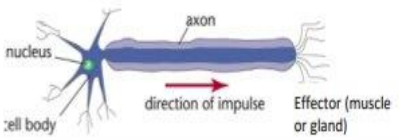


Nervous System (p27)

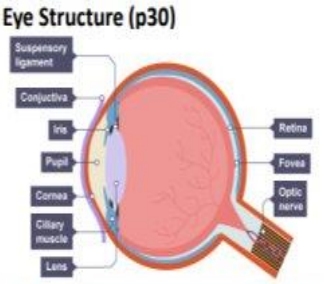
- Central nervous system = brain and spinal cord
- Peripheral nervous system = all other neurons (nerve cells) around the body, including sensory motor and relay neurons
- Sensory neuron



Motor neuron



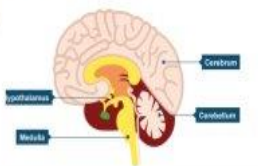
Eye Structure (p30)



Structure	Function
Cornea	Refracts light - bends it as it enters the eye
Iris	Controls how much light enters the pupil
Lens	Focuses light onto the retina
Retina	Contains the light receptors
Optic nerve	Carries impulses between the eye and the brain

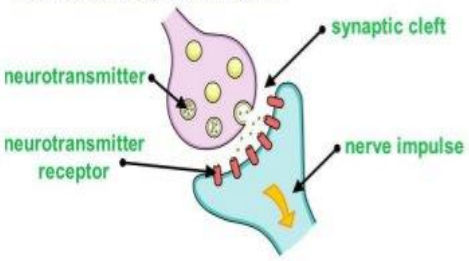
Brain (p29)

- Cerebral hemispheres: largest part, centre of intelligence, memory, speech and consciousness. Left = right
- Cerebellum: controls muscle function, speech, thought, emotions, reading writing and learning
- Medulla oblongata: centre for controlling respiration, circulation and digestion
- Studied using CAT or PET scans.



Synapses (p29)

A synapse is a junction between two neurones across which electrical signals must pass.

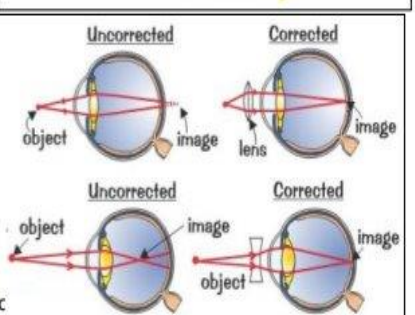


Neurotransmitter molecules diffuse from vesicles towards the neurotransmitter receptors, moving from an area of high concentration to low concentration.

Don't forget to try the revision questions for topics 1 & 2 on page 31!

Eye Problems (p30)

- Long sighted: image forms behind retina. Corrected using convex lens to bring rays together and move image forwards
- Short sighted: image forms in front of retina. Corrected using concave lens to spread out rays and move image back
- Colour blindness: genetic condition with fault cones cells in the retina leading to difficulty differentiating colours. Not able tc be corrected.
- Cataracts: a clouding of the lens. Corrected by replacing the lens.



9.12 Festivals
Spanish Vocab List

Cabot Learning Federation

¿Cuál es tu festival favorito?	What is your favourite festival
Mi festival favorito es...	**My favourite festival is..**
La Navidad	Christmas
La Nochebuena	Christmas Eve
La Nochevieja	New Year's Eve
El día de año nuevo	New Year's Day
El día de los Reyes Magos	Three Wise Men Day
La Semana Santa	Easter / Holy Week
Las hogueras	The bonfires
La feria de abril	The April fair
Día de muertos	The day of deaths
El cumpleaños	Birthday
El carnaval	Carnival
La feria	Fair
El día de la madre	Mother's day
El día del padre	Father's day
El día festivo	Bank Holiday
El encierro	The bull running
Las fallas	Fallas
Els castells	Human towers
La Tomatina	Tomato festival

¿Qué hacemos para celebrar?	What do we do to celebrate?
Me levanto	I get up
Me ducho	I shower
Me visto	I get dressed
Recibo regalos	I receive presents
Soplo velas	I blow candles
Monto el árbol de Navidad	I put up the Christmas tree
Compro ropa nueva	I buy new clothes
Voy a la iglesia	I go to church
Voy a la mezquita	I go to the mosque
Voy a la plaza	I go to the square
Voy a casa de...	I go to ...'s house
... llega	... arrives
Comemos...	We eat...
Ayunamos	We fast
Jugamos a juegos de mesa	We play table games
Celebramos	We celebrate
Lo paso muy bien	I have a good time
Me acuesto	I go to bed
Voy a dormir	I go to sleep

¿Cómo es?	How is it like?
Emocionante	Exciting
Conmovedor	Moving
Divertido	Fun
Insoportable	Unbearable
Impactante	Striking

¿Qué pasa en los encierros / las corridas de toros ?	What happens in the bull running / bull fighting?
San Fermín	A bull running festival held in Pamplona every July
Los toros	The bulls
Las calles	The streets
Correr	To run
Las corridas de toros	Bullfighting
Los encierros	Bull running
La plaza de toros	The bullring

¿Qué pasa en las Fallas?	What happens in Fallas?
Fallas	A festival held in Valencia every March
La hoguera	The bonfire
El cartón	Cardboard
Las fallas	Sculptures made of cardboard
Los fuegos artificiales	Fireworks
Los petardos	Firecrackers
Las bandas de música	Music bands

¿Qué pasa en la Tomatina?	What happens in the tomato festival?
La gente	People
Lanza tomates	Throw tomatoes
Aplasta tomates	Squish tomatoes
Se ensucia	Gets dirty
Tiene lugar en Buñol	Takes place in Buñol
La batalla	The battle
El caos	Chaos

9.12 Geography & History
Spanish Vocab List

Cabot Learning Federation

La geografía	Geography
El país	The country
La región / la comunidad	The region
La ciudad	The city
El pueblo	The town/ village
La costa	The coast
Las islas	The islands
El interior	The inland regions

La historia	History
Castellano / Español	Spanish language
La Reconquista	Period of time when the Christian kingdoms "reconquered" the península from the Muslims (Moors).
Moros	Moors – Muslim inhabitants of modern-day Spain in
Conquistadores	Conquerors of American territories in the 16th century
La Colonización	Colonisation of the Americas
La Guerra Civil Española	The Spanish Civil war between 1936 and 1939
La Dictadura fascista	The fascist dictatorship in Spain between 1939 and 1975
La Transición	Transition into democracy after the dictatorship
La monarquía parlamentaria	The current political system in Spain: a parliamentary monarchy, like in the UK

El lenguaje de todos los días	Everyday language
¡Hola!	Hello
Buenos días	Good morning
Buenas tardes	Good afternoon
Buenas noches	Good night
¿Cómo te llamas?	What's your name?
Me llamo…	My name is…
¡Adiós!	Goodbye
Hasta luego / hasta la vista	See you later
Por favor	Please
Gracias	Thank you
Muchas gracias	Thanks a lot
De nada	You are welcome
Perdone / Perdón	Excuse me / Apologies
Lo siento	I'm sorry
¿Habla inglés?	Do you speak English?
Hablo un poco de español	I speak a bit of Spanish
No entiendo	I do not understand
¿Dónde hay un buen restaurante?	Where is a good restaurant?
¿Dónde está el centro / la playa?	Where is the centre / the beach?
Me he perdido	I am lost
Busco un hotel / un hospital / un banco	I am looking for a hotel / hospital / bank
Busco la estación / el aeropuerto / la parada de bus	I am looking for the station / airport/ bus stop
¿Me podría sacar una foto?	Could you take a picture?
¡Cuidado!	Be careful!
¡Vamos!	Let's go!

Festivals Year 9.12 Spanish – Knowledge Organiser

3 Time frames

Cabot Learning Federation

The preterite tense of **regular verbs** is formed on an infinitive stem with the following endings:

Infinitive:	hablar	comer	vivir
Stem:	habl-	com-	viv-
Yo (I)	hablé	comí	viví
Tú (you)	hablaste	comiste	viviste
él/ella/usted (he/she/you)	habló	comió	vivió
Nosotros (We)	hablamos	comimos	vivimos
Vosotros (You all)	hablasteis	comisteis	vivisteis
ellos/ustedes (They/ you all)	hablaron	comieron	vivieron

Ser / Ir (To be /to go)

fui (I was / I went)
Fuiste (You were / You went)
Fue (he/she was // he /she went)
Fuimos (we were / we went)
Fuisteis (you all were / you all went)
Fueron (they were /they went)

The future tense of **regular verbs** is formed adding the endings **e,as,a emos, eis, an** to the infinitive.

FUTURE SIMPLE			
Person	Verbs		
	Hablar	Comer	Vivir
Yo	hablar - é	comer - é	vivir - é
Tú	hablar - ás	comer - ás	vivir - ás
Usted, él, ella	hablar - á	comer - á	vivir - á
Nosotros-as	hablar - emos	comer - emos	vivir - emos
Vosotros-as	hablar - éis	comer - éis	vivir - éis
Ustedes, ellos, ellas	hablar - án	comer - án	vivir - án

Regular verbs – present tense endings			
	AR verbs	ER verbs	IR verbs
I	o	o	o
you	as	es	es
he/she/it	a	e	e
we	amos	emos	imos
you(pl)	áis	éis	ís
they	an	en	en

Textiles Hierarchy of Key words

Tier 3 'Academic' keywords.

Plain seam
analyse
sustainable
embellishment
Woven/ bonded/ knitted
function
Free machine embroidery
develop

Tier 2 Valuable keywords used in most lessons every lesson.

Complementary colours
contrast
environment
fastening
compare
embroidery
equipment
iron
context
appliqué
effect
improve

Tier 1 Basic keywords used in almost every lesson.

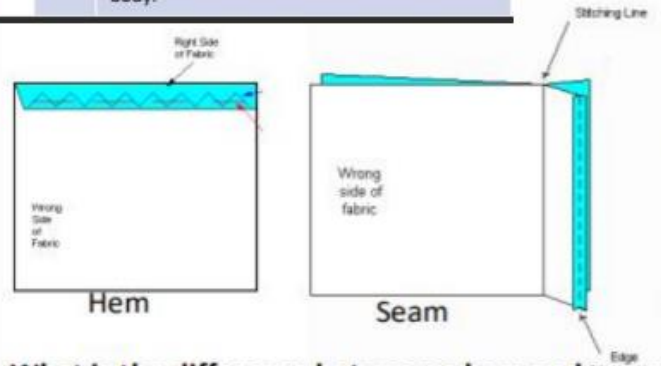
colour
design
shape
machine
pattern
Texture
line
tone
theme
Fabric
thread
sew

Year 9 Textiles Knowledge Organiser

Equipment	Use
Bobbin 	A bobbin is a cylinder, to which cotton thread is wrapped around. It is found in the bottom part of a sewing machine.
Overlocker machine 	An overlocker does not replace a sewing machine. Its primary function is to clean finish a raw edge, giving the project a professional appearance
Quick unpick 	It is used to quickly remove stitches and seams.
Tailor's chalk 	Used to mark on to fabric. It is easily washed off.
Measuring Tape 	It is a flexible ruler that can be used for body measurements, tailoring and dressmaking. It is flexible to measure fabric and curves of the body.

Batik

Batik is a type of resist printing process in which wax is applied to the fabric in specific areas. When the wax hardens, the fabric is submerged in dye. The wax prevents the dye from reaching the fibers. The fabric is then boiled to remove the wax. This fabric-dyeing method makes cotton look crackled. Batik is characterised by a unique, nearly pattern-less appearance.

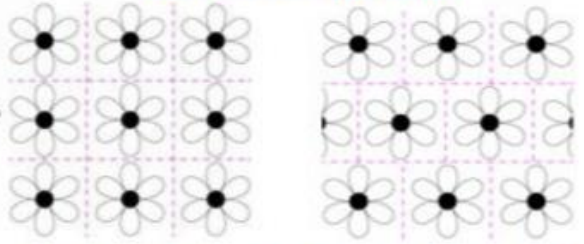


What is the difference between a hem and a seam?

A hem is a neat non fraying edge made by folding fabric over and stitching it down. A seam is a line along which pieces of cloth are joined by sewing.

The 6 R's when it comes to sustainability

The motif has been repeated to make two different patterns



plain repeat pattern

brick repeat pattern/ offset repeat pattern

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

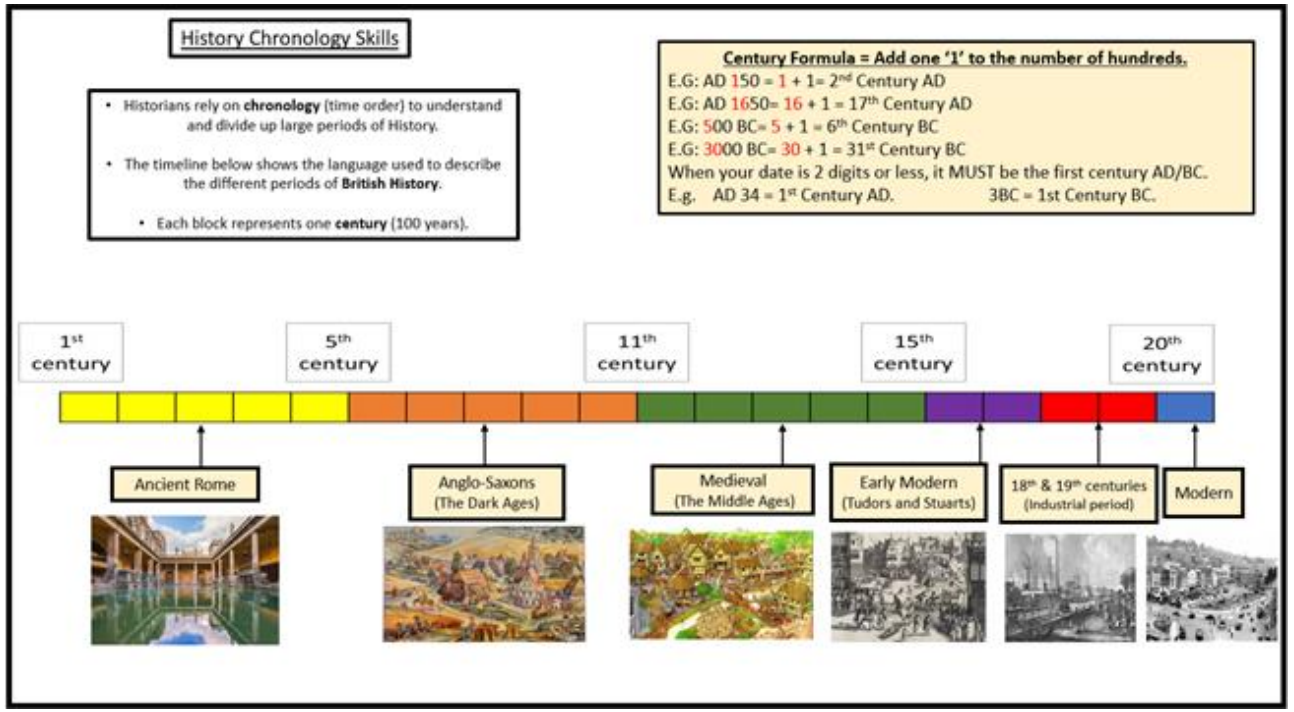
One similarity is…

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.

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

Timetable

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