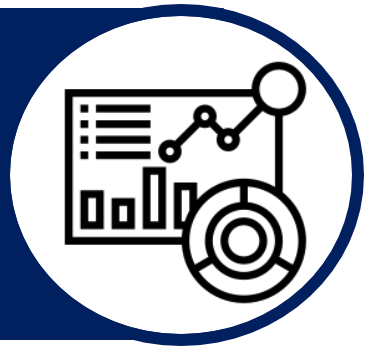
WINTERSTOKE HUNDRED ACADEMY

Knowledge Organisers



Term 5 and 6
Year 9

Contents

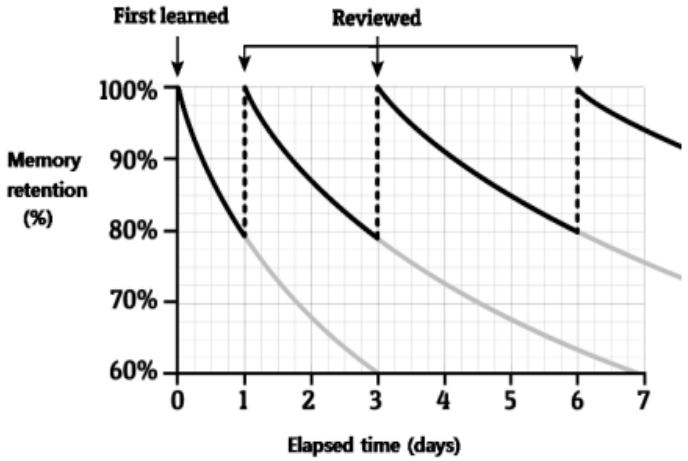
How to revise

Successful Learning Takes Place Over Time

It's rare for anyone to be completely comfortable with something they learn for the first time. This could be a new piece of music, dance move, language or chemistry. We all have to practice. In most instances, the aim is to be at your optimum on the day it matters, e.g. the performance, race or exam. Everything leading up to this point is part of the process of improving. It's about the long-term rather than the short-term, which also means there are no quick fixes. During this period, it's okay to make mistakes; it's okay to feel frustrated. What matters is what you do about it.

Space out your learning on a subject

Spacing out your learning over time is far more effective than last-minute cramming. This is based on research into how we forget and how we remember. The speed at which we forget something will depend on many factors such as the difficulty of the material, how meaningful it was to us, how we learned it and how frequently we relearn or remember it. The last factor tells us that when we learn something for the first time, we need to review it quickly afterwards. The more times we force ourselves to remember something, the longer the gap between reviews, which the diagram below illustrates nicely. The Leitner system and Cornell Notes mentioned earlier provides a wonderful way of achieving this, but the principle applies to all of the learning strategies mentioned in this booklet



Revision strategies

List It

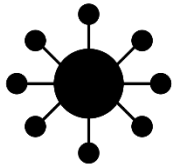
This is a simple free recall task that is very versatile. It can feel challenging, but this is a good thing, and it provides clear feedback on what you do and don't know. Choose a topic, set yourself a time limit and…

- List as many keywords as you can
- List as many facts as you can
- List as many key events/quotes/individuals as you can
- List as many causes of X as you can
- List as many consequences of Y as you can

Flashcards

Flashcards have the potential to be a powerful learning aid. However, how successful this is will depend on the thought you put into making them in the first place and then how they're used. It's very important to remember that they're for testing, not summarising

Mapping



Mapping is a brilliant way of organising and learning information, demonstrated on various pages in this booklet. It helps you break down complex information, memorise it, and see the connections between different ideas.

Self-testing

Research has shown that every time you bring a memory to mind, you strengthen it. And the more challenging you make this retrieval, the greater the benefit. Self-testing improves the recall of information, transfer of knowledge and making inferences between information. Equally, there are many indirect effects, such as a greater appreciation of what you do and don't know, which helps you plan your next steps.

Flashcards

Flashcards are small sheets of paper or card with matching pieces of information on either side. They are a useful tool for learning facts and allow you to quickly check whether you have remembered something correctly.

When making and using flashcards:

Do:

- ✓ …make flashcards quickly.
- ✓ …put a single piece of information of each flashcard.
- ✓ …sort your flashcards according to your confidence with them (see below).
- ✓ …test yourself on the flashcards from memory.

Don't:

- X …spend more time making flashcards than actually using them.
- X …put lots of information onto each flashcard.
- X …revise the flashcards in the same order every time that you use them.
- X …only read through flashcards.

1861	groynes	osmosis	Where is the pharmacy?
Pasteur published his paper about germ theory.	A low wall on the coastline which slows longshore drift	Net movement of water from a high concentration to low concentration across a partially permeable membrane	Où est la pharmacie?

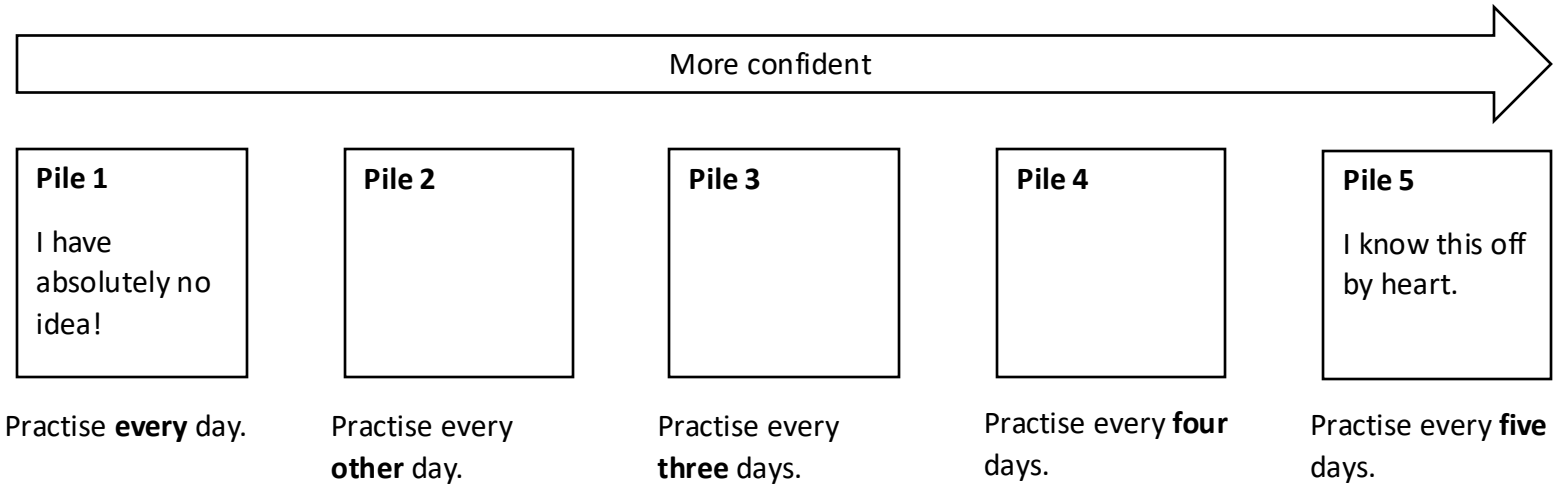
How to make flashcards:

- You can by a set of flashcards or use a free website such as Quizlet.
- Find the information you want to put onto flashcards using your existing revision resources (e.g. a knowledge organiser).
- Fold a piece of A4 paper into 10.
- Write the questions on the top half of the paper.
- Write the answers on the bottom half of the paper.
- Cut the paper along the dotted lines shown here.
- Fold the strips of paper so that the writing is on either side.

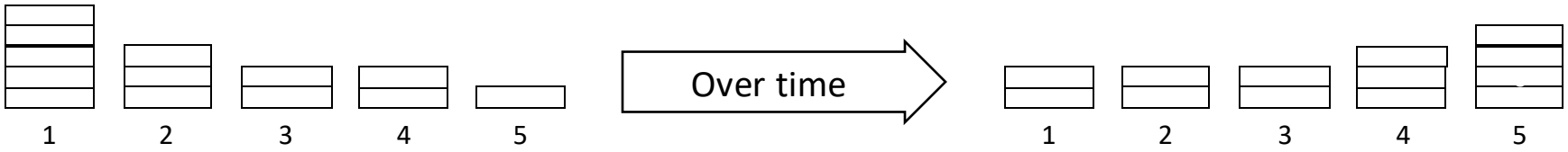
Definition 1	Definition 2	Definition 3	Definition 4	Definition 5
Answer 1	Answer 2	Answer 3	Answer 4	Answer 5

How to use flashcards:

1. Test yourself using the flashcards.
2. As you test yourself, sort the flashcards into up to five piles according to how confident you are with the content.
3. Put the piles into numbered envelopes (1-5).
4. Test yourself on the different piles on different days (see below):



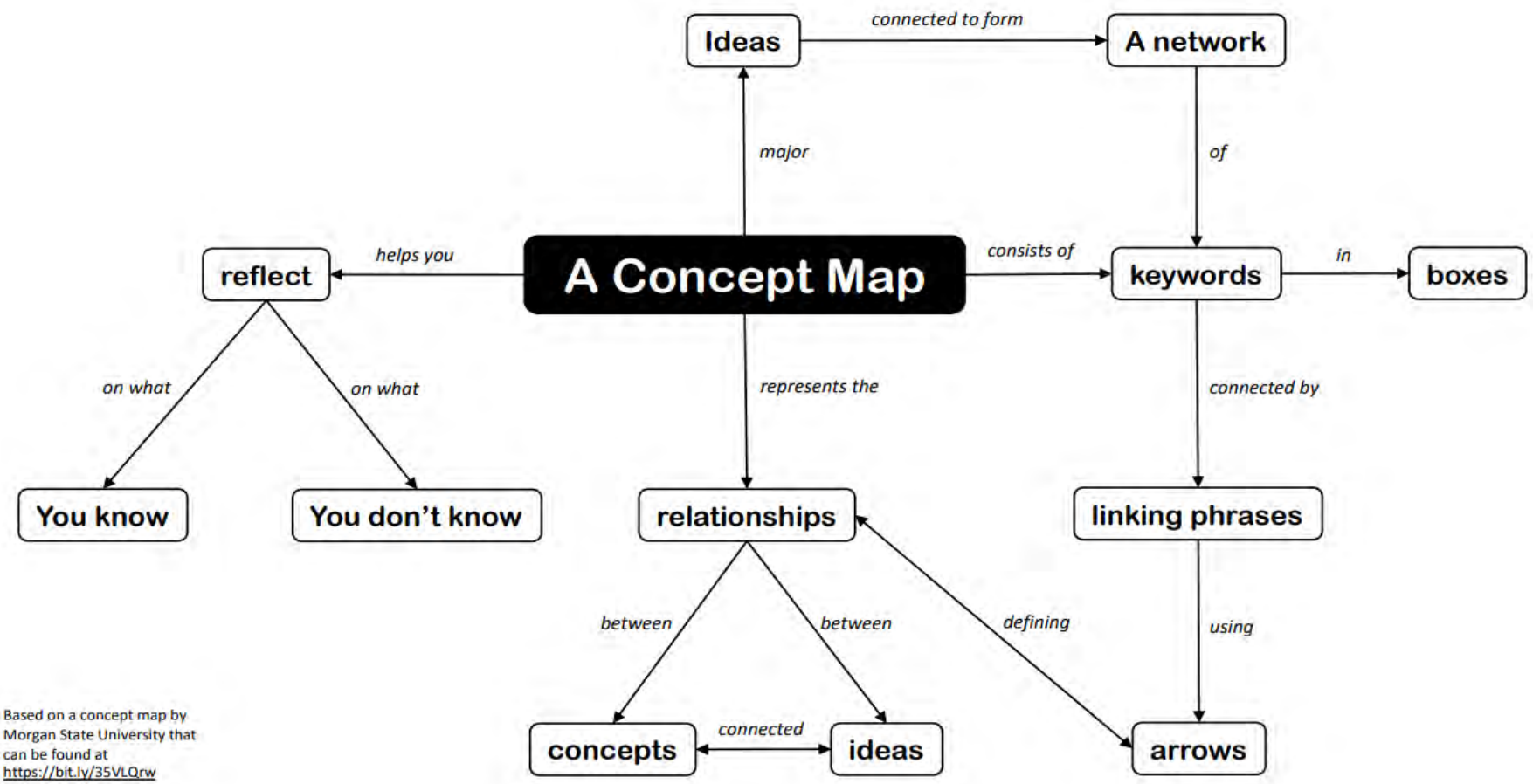
5. As you test yourself on the different piles, move the cards into different piles as you become more confident



Useful resources:

www.quizlet.com – This free website allows you to quickly create flashcards which you can print, use on a computer, or use on your phone.

Mapping



Based on a concept map by Morgan State University that can be found at https://bit.ly/35VLQrw

WHA English

The Merchant of Venice

Plot Overview	
Act 1: Establishment	Venice: Antonio is unhappy. Despite owing his best friend Antonio a lot of money, Bassanio asks Antonio to fund his trip to Belmont to woo Portia, a girl who has been 'richly left.' The Jewish Shylock is introduced who, angry at his mistreatment by Christians, lends Antonio the money to support Bassanio. He demands a pound of Antonio's flesh if Antonio is unable to pay him back. Belmont: Portia longs to find a good husband, but her choice is limited by her dead father who has set up a test- suitors must choose between caskets of gold, silver or lead.
Act 2: Development	Venice: Jessica, Shylock's daughter, is rescued from her house by her lover Lorenzo and his friends. She takes much of his money, much to Shylock's distress. Belmont: The Prince of Morocco chooses the gold casket because it is what all men desire, The Prince of Aragon chooses the silver because of his arrogance- the inscription refers to 'as much as he deserves.'. Neither are right and Portia stays single.
Act 3: Complication	Venice: Antonio's ships have sunk, meaning he can't pay Shylock. Shylock is delighted at this chance for revenge and demands his pound of flesh. Belmont: Bassanio, who is humbler than the 'Princes', makes his correct choice of the lead casket. Portia is pleased and agrees to marry- the pair exchange rings. Gratiano (Bassanio's friend) and Nerissa (Portia's lady-in-waiting) also agree to marry. Portia and Nerissa decide to dress up as men to travel to Venice and help Antonio.
Act 4: Climax	The Trial Scene (Venice): Shylock is given the opportunity to show mercy, but refuses, leaving Antonio prepared to die and Bassanio distraught. Antonio bravely accepts his fate. Portia enters the court, disguised as the lawyer Balthazar, and tells Shylock that taking a pound of flesh would be criminal if he spills Antonio's blood. Shylock is forced to become a Christian. Portia and Nerissa, still in disguise, trick their husbands into giving away their wedding rings.
Act 5: Resolution	Belmont: The core characters are reunited in peaceful Belmont. Portia and Nerissa are back out of their disguises. They tease their husbands, making them think that they have been unfaithful, and chastise them for giving away their rings. Antonio's ships, which he thought were lost, have arrived in Venice.

English

The Merchant of Venice

Characters	
Antonio	A very good friend of Bassanio, Antonio is shown as kind – he borrows money to help Bassanio and is prepared to lose his life for it – but also unkind as he is anti-Semitic.
Shylock	A money lender and a Jew who is very angry about his treatment at the hand of the Christians of Venice, particularly Antonio. He lends Antonio money with a bond of a pound of flesh. Shylock is eloquent and defends his own humanity yet seems merciless and cruel.
Portia	A rich and clever noblewoman from Belmont who must choose a husband with three caskets. She loves Bassanio and he passes the casket test. Portia dresses as a man and saves Antonio from Shylock.
Bassanio	A Venetian nobleman who often borrows from his friend Antonio. He is in love with Portia and proves worthy of her love when he passes the casket test.
Nerissa	Portia's lady in waiting and friend. Nerissa marries Gratiano and accompanies Portia to Venice disguised as a male clerk. Gratiano: A friend of Bassanio's who is very critical of Shylock during the trial. Falls in love with and marries Nerissa.
Jessica	Shylock's daughter who falls in love with Christian Lorenzo. She is ashamed to be Shylock's daughter, elopes with Lorenzo and becomes a Christian.

English

The Merchant of Venice

Context- Elizabethan England- MOV written 1596-1599	
Role of Women	A wealthy women's marriage/husband was often decided by their father. Women had little control over their personal lives and limited role in society.
Anti-Semitism	When the Merchant of Venice was staged, most of the audience would never have knowingly met a Jewish person. Jews had been expelled from the country 300 years before and so the few that were in England practised their religion in secret. Elizabethans therefore were often hugely anti-Semitic, believing stories and outlandish rumours that said Jewish men were child killers, womanisers and had a strange and fetid smell. Jewish people- stereotyped as being cruel, money-obsessed and animal-like. In Venice, Jewish people had to wear red hats to be identified easily.
Money-Lending (Usury)	Usury: In modern times usury means lending money for excessive interest. In Shakespearean times usury meant any kind of money lending. Money-lending was a disreputable trade, mainly because Christians believed the Bible forbade it. However most merchants of the time borrowed money to speculate on new investments.
Marriage	Marriage was less a love match and more an arrangement between families. Both men and women rarely chose their own marriage partner. This was especially true of noble families.

English

The Merchant of Venice		Themes	
Justice	Shylock's quest for lawful justice is unsuccessful because of his unwillingness to be merciful. He is deservedly punished of his sin as an example of moral justice.	**The Role of Women**	Portia must submit to her father's wishes and presented as an object through the caskets. She dresses as a man to influence the trial yet takes control as a woman through the ring trick.
Revenge	Shylock's desire for revenge is his downfall. Desire for vengeance is presented as the opposite of Christian mercy.	**Marriage**	Portia has no choice in marriage. Caskets designed for a man that is humble and prepared to give all he has, in order to win Portia. Bassanio pursues Portia's wealth and Lorenzo values Jessica's inheritance.
Persecution	The persecution of Shylock is used to explain/justify his cruelty.	**Mercy**	Shylock is punished because he does not show mercy- Portia and Antonio present mercy as a holy Christian trait and are rewarded for it in the end.
Love	Caskets show true romantic love takes humility and effort. Strong fraternal love between Bassanio and Antonio, whilst romantic love e.g., Bassanio is still initiated as a means of securing status and wealth.	**Order**	Order of society is challenged when Shylock is in control of Antonio's fate. This is restored when Shylock meets his downfall and becomes Christian. Much of the comedy arises out of changes to order and hierarchy.
Shakespearean Comedy	Plays full of fun, irony and dazzling wordplay. They also include disguises and mistaken identities, with difficult plots that have convenient endings.	**Judaism and Christianity**	Judaism is based on Torah whereas Christianity is based on the Bible. Differences between the two have caused much tension throughout history. Jews were exiled from England in 1290.

English

The Merchant of Venice

Symbols and motifs
The pound of flesh • Jews were portrayed as bloodthirsty murderers at this time and so Shylock's demand for a pound of flesh would epitomise the way Jews were regarded. • Shylock has also just lost his own 'flesh and blood' – Jessica. The pound of flesh could represent his revenge on Christians generally.
Rings • Portia gives Bassanio a ring to represent love and commitment. • Nerissa gives Gratiano a ring which represents the same. • The turquoise ring that Jessica stole from Shylock represents his memories and love for his wife who has died.
The three caskets: • For Portia, these represent the control her father exerts on her even from beyond the grave. • For her father, they may have represented his love for his daughter in making sure she marries well. • The gold casket: appearances can be deceptive • Silver: being a fool • Lead: modesty and good judgement

WHA English

The Merchant of Venice

 Key vocabulary 1	
Usury: the action or practice of lending money at unreasonably high rates of interest.	**Discrimination:** the unjust treatment of different categories of people, especially on the grounds of race, age, sex, or disability.
Antisemitism: hatred of Jews; unfair treatment of Jews.	**Prejudice:** preconceived opinion that is not based on reason or actual experience.
Patriarchy: a system of society or government in which men hold the power and women are largely excluded from it.	**Stereotype:** a widely held but fixed and oversimplified image or idea of a particular type of person or thing.
Aside: a remark or passage in a play that is intended to be heard by the audience but unheard by the other characters in the play.	**Dramatic irony**: a literary device by which the audience's or reader's understanding of events or individuals in a work surpasses that of its characters.
Soliloquy: an act of speaking one's thoughts aloud when by oneself or regardless of any hearers, especially by a character in a play.	**Monologue:** a long speech by one actor in a play
Motif: a dominant or recurring idea	**Archetype:** a very typical example of a certain person or thing.

English

Key Vocabulary 2	
Symbolism	An image represents an idea
Antagonist	One character that opposes another; villain
Rhetoric	The art of persuasion
Allusion	An indirect or passing reference to something else e.g. another text/story
Revenge	The act of harming or injuring someone else in return for a harm or injury they have done to you
Victimise/Victim	To single (someone) out for cruel or unjust treatment/Someone that has been singled out for cruel or unjust treatment.
Materialism	Concern or obsession with items or objects rather than people
Femininity	A way of acting or feeling as a woman
Outsiders	A person who does not belong to a particular group
Imperialism	Extending power through use of military force
Forgiveness/ Mercy	Compassion shown towards someone who has done you harm.
Judaism	The religion of the Jewish people.
Justice	Being morally correct, fair, and right.

English

Poetry

Poems	
Money by Philip Larkin	In an age of inflation, Larkin wrote '*Money*' as a criticism against consumerist values and society's obsession with spending. He personifies money in an exploration of spending habits and through a biting comment on the futility of saving. Ultimately, society's obsession with money is deemed 'intensely sad'.
Poison Tree by William Blake	*A Poison Tree* is a short and deceptively simple poem about repressing anger and the **consequences** of doing so. The speaker tells of how they fail to communicate their **wrath** to their **foe** and how this continues to grow until it develops into poisonous hatred.
Still I Rise by Maya Angelou	'Still I Rise' by Maya Angelou is an inspiring and moving poem that **celebrates self-love and self-acceptance**. The poem takes the reader through a series of statements the speaker makes about herself. She praises her strength, her body, and her ability to rise up and away from her personal and historical past.
Promises Like Piecrust by Christina Rosetti	"Promises like Piecrust" is a poem in which relationships are slanted as always doomed to failure, with the constant mention of liberty and an inability to uphold promises as perhaps indicative of a fear of giving up too much in order to gain seemingly marginal benefits.
Invictus by William Ernest Henley	The central theme of 'Invictus' revolves around resilience and inner strength. Henley's portrayal of a defiant spirit refusing to be defeated by life's challenges resonates with readers. Henley employs powerful and evocative imagery to convey his message effectively

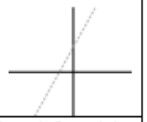
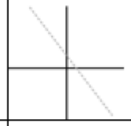
Quadratic sequences have	A common second difference 
The first 5 terms of n^2 are	1 4 9 16 25
The first 5 terms of $2n^2$ are	2 8 18 32 50
The first 5 terms of $3n^2$ are	3 12 27 48 75
To find the co-efficient of n^2	Second difference ÷ 2
Write an expression for the nth term of 6 17 32 51 74	
Step 1	Find the second difference and half it 
Step 2	Write the correct n^2 sequence Half of second difference is 2 so we need $2n^2$ 2 8 18 32 50
Step 3	Find the difference between sequence in question and $2n^2$ 6 17 32 51 74 - 2 8 18 32 50 4 9 14 19 24
Step 4	Find nth term of difference above and combine with $2n^2$ Nth term of difference is 5n -1 Combine $2n^2 + 5n - 1$

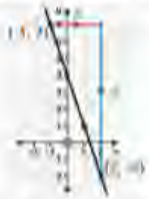
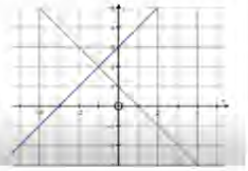
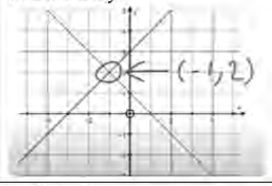
Other Types of Sequences

Linear sequence (arithmetic sequence) has	A common difference (add, subtract each time)
Geometric sequence	Has a common ratio (multiplied each time)
To find the next term in a Fibonacci sequence	Add the 2 previous terms
Find the next term in this Fibonacci sequence 2 2 4 6 ___ ___	2 2 4 6 **10** **16**
The nth term of 3 6 9 12 is	$3n$
The nth term of -3 -6 -9 -12 is	$-3n$
The nth term of 5 8 11 14 17 is	3n + 2
The nth term of 1 4 7 10 13	3n - 2
If the nth term is 5n – 1, the 20th term would be	Let n=20 5 x 20 – 1 = 99
What is the term-to-term rule for this geometric sequence 0.3 3 30 300	Multiply by 10
The first 5 triangular numbers are	
What would the next triangular number be?	15

Maths

Equation of a Straight Line

Linear graphs are	Straight lines
The general equation for a straight line is	y = mx + c
M is the	Gradient (steepness)
C is the	y-intercept (where it crosses the y-axis)
y-intercept co-ordinates always start with	0 e.g (0, 4)
To plot a straight-line graph from x=-2 to x=2	Draw a table of values x: -2, -1, 0, 1, 2 y:
y=3x + 2 means	Multiply the x by 3 then add 2
What will the graph of $y = 6x + 5$ look like?	A straight line, going up from left to right Gradient of 6 Y-intercept of (0, 5) 
What will the graph of $y = -6x + 5$ look like?	 A straight line, going down from left to right Gradient of -6 Y-intercept of (0, 5)
$y = 3x + 2$ $Gradient =$ $y - intercept =$	Gradient = 3 y-intercept = (0, 2)
$y = 2 + 3x$ $Gradient =$ $y - intercept =$	Gradient = 3 y-intercept = (0, 2)
$y = 2 - 3x$ $Gradient =$ $y - intercept =$	Gradient = – 3 y-intercept = (0, 2)
Parallel lines have the same _____	gradient

To find the gradient from a plotted graph with a positive gradient	Draw a triangle joining 2 points - up is positive  $\frac{difference\ in\ y}{difference\ in\ x} = \frac{12}{3} = 4$ (positive slopes up)
To find the gradient of a plotted graph with a negative gradient	Draw a triangle joining 2 points – down is negative  $\frac{difference\ in\ y}{difference\ in\ x} = \frac{-9}{3} = -3$ (negative slopes down)
To find the gradient between two co-ordinates (x_1, y_1) and (x_2, y_2) The formula is	$gradient = \frac{y_2 - y_1}{x_2 - x_1}$
Find the gradient between $(-4,3) and (2,-9)$	$(-4,3) and (2,-9)$ $LABEL \quad (x_1, y_1)$ and (x_2, y_2) CALCULATE GRADIENT using formula above $\frac{-9-3}{2--4} = \frac{-12}{6} = -2$
Parallel lines have the same _____	gradient
To solve a simultaneous equation graphically… $x + y = 1$ $y - x = 3$ 	Plot the graphs Find the intersection (where they cross) Name x and y  x = -1 y = 2
Show that (3,5) lies on the line y = 2x -1	x= 3 y=5 5= 2x3-1

Maths

Rearranging

1	Which of these formulae have y as the subject? $y = 3x + 2$ $x = y + 2$ $y = 3xy$ $\frac{x-2}{4} = y$	Where y is isolated on its own on one side $y = 3x + 2$ $\frac{x-2}{4} = y$
2	To change the subject of a formula	Isolate the letter using inverse operations like solving an equation
3	The order in which we choose to eliminate using inverse operations is	
4	Make x the subject of $y = x + 3$	Subtract 3 from both sides $y - 3 = x$
5	Make x the subject of $y = 3x$	Divide both sides by 3 $\frac{y}{3} = x$
6	Make x the subject of $y = \frac{x}{3}$	Multiply both sides by 3 $3y = x$
7	Make x the subject of $y = 3x + 2$	Subtract two from both sides $y - 2 = 3x$ Divide both sides by 3 $\frac{y-2}{3} = x$
8	Make x the subject of $y = 3(x + 2)$	Divide both sides by 3 $\frac{y}{3} = x + 2$ Subtract two from both sides $\frac{y}{3} - 2 = x$
9	Make x the subject of $y = \frac{x}{3} + 2$	Subtract two from both sides $y - 2 = \frac{x}{3}$ Multiply both sides by 3 $3y - 6 = x$
10	Make x the subject of $y = \frac{x+2}{3}$	Multiply both sides by 3 $3y = x + 2$ Subtract two from both sides $3y - 2 = x$
11	Make x the subject of $y = 10x^2$	Divide both sides by 10 $\frac{y}{10} = x^2$ Square root both sides $\pm\sqrt{\frac{y}{10}} = x$ Don't forget the positive and negative square root

Maths

Units & Compound Measures

Length

1km = _____metres	1km = 1000 metres
1m = _____centimetres	1m = 100 centimetres
1cm = _____millimetres	1cm = 10 millimetres
5 miles = _____ kilometres	5miles = 8 kilometres

Mass/Weight

1kg = _____grams	1kg = 1000 grams
1 gram = _____milligrams	1 gram = 1000 milligrams
1 tonne = _____kilograms	1 tonne = 1000 kilograms

Capacity/Volume

1 litre = _____ millilitres	1 litre = 1000 millilitres
1 litre = _____centilitres	1 litre = 100 centilitres
1 litre = _____cm^3	1 litre = 1000 cm^3

Squared and Cubed units

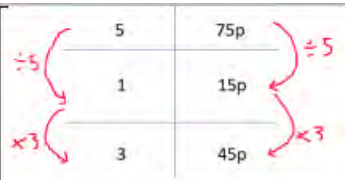
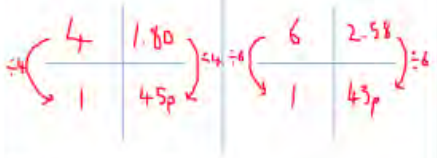
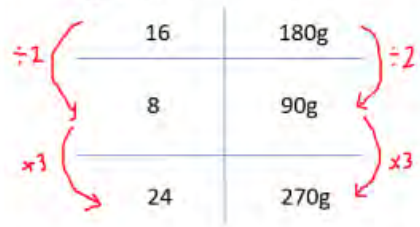
$3m^2$ in cm^2	3 x 100^2 = 30 000cm^2
$3m^3$ in cm^3	3 x 100^3 = 3 000 000cm^3
$4km^2$ in m^2	4 x 1000^2 = 4 000 000m^2
$4km^3$ in m^3	4 x 1000^3 = 4 000 000 000m^3

Formula for speed	$speed = \frac{distance}{time}$
30 minutes in hours	$\frac{30}{60} = \frac{1}{2}$ =0.5 hours
15 minutes in hours	$\frac{15}{60} = \frac{1}{4}$ =0.25 hours
20 minutes in hours	$\frac{20}{60} = \frac{1}{3} = 0.\dot{3}$
2.5 hours in minutes	60+60+30=150 minutes
Formula for density	$density = \frac{mass}{volume}$
300g in kilograms	0.3kg
4050g in kilograms	4.05kg
1 hour = ___ minutes	60
2 hours = ___ minutes	120
Seconds in a minute	60
Seconds in an hour	3600
Hours in a day	24
Days in a week	7
Formula for density	Density = $\frac{mass}{volume}$
Units for desnity	Mass/volume e.g g/cm^3
You can add _____ together and _____ together but you can't add _____ together	You can add **mass** together and **volume** together but you can't add **density** together
What is a good method for setting out this question? Metal A has a density of 13.2 g/cm^3. 50 g of metal A is combined with metal B to create an alloy with mass 130 g and density 9.8 g/cm^3. What is the density of metal B? Round your answer to 2 decimal places.	Draw a table Complete the table

	Metal A	Metal B	Total
Mass			
Density			
Volume			

Maths

Direct & Inverse Proportion

5 pens cost 75p. Which diagram would help to work out the cost of 3 pens	
If you get asked about which product is best value…	Buy the same amount of each
A pack of 4 toilet rolls costs £1.80 A pack of 6 toilet rolls costs £2.58 Which is better value? How would you show your working?	Split the page in half Pack of 4 Pack of 6  Pack of 6 is better value
If £1 = $1.2 How many dollars would I receive for exchanging £200?	200 × 1.2 = $240
Currency conversion If £1 = $1.2 How many pounds sterling would I receive for exchanging $200?	200 ÷ 1.2 = 166.66666667 = £166.67 (round money to decimal places)
Recipe questions Ingredients to make **16** gingerbread men 180 g flour 40 g ginger 110 g butter 30 g sugar How much **flour** would I need for 24 gingerbread men?	Scale it up using a table Gingerbread men Flour 

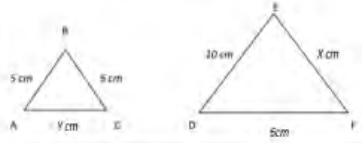
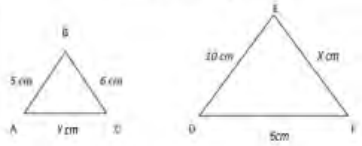
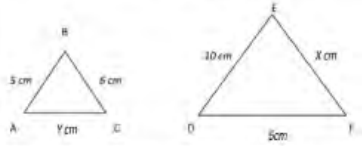
5 people take 4 hours to build a wall. How long would 1 person take?	Men Hours  1 man = 20 hours
What do we assume about the people in 1a?	They are working at the same rate

Scale Diagrams and Maps

Map scales: A scale of 1 : 200 means	1cm on map = 200cm in real life OR 1cm on map = 2m in real life
The scale 1 : 250,000 means…	For every 1cm in the image there are 250,000cm in real life.
Write the scale 1 : 250,000 with units.	$1 : 250{,}000$ 1cm in the **image** corresponds to 250,000cm in **real** life. $1cm : 250{,}000cm$ $1cm : 2{,}500\ m$ $1cm : 2.5\ km$

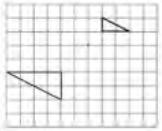
Maths

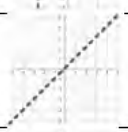
Similarity

A scale factor is	The number we multiply by to enlarge a shape's lengths
If the scale factor is 2…	All the lengths are multiplied by 2
If the scale factor is ½	All the lengths are halved (divided by 2)
Positive integer scale factors make the shape	Larger
Positive scale factors between 0 and 1 make the shape	Smaller
Two shapes are similar if they have	Same corresponding angles Lengths enlarged by the same scale factor
These two shapes are similar Work out the scale factor 	10 and 5 correspond to each other $10 \div 5 = 2$
Work out the length x 	Scale factor = 2 X = 6 x 2 = 12 cm
Work out the length Y 	Scale factor = 2 $6 \div 2 = 3\ cm$
Which of these angles is the angle ABC equal to in the larger triangle? EDF DEF EFD	DEF
The area scale factor of similar shapes is the length scale factor _____	The area scale factor of similar shapes is the length scale factor **squared** $ASF = LSF^2$
The volume scale factor of similar shapes is the length scale factor _____	The area scale factor of similar shapes is the length scale factor **cubed** $VSF = LSF^3$

Maths

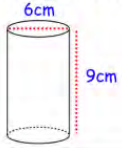
Transformations

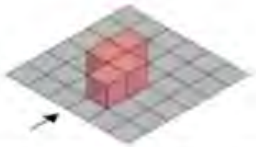
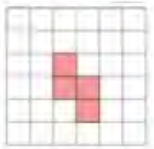
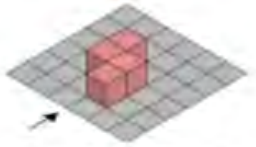
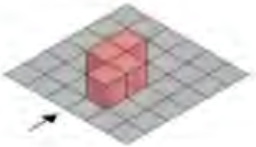
The object is	The orignal shape
The image is	The shape after the transformation has happened
Translation is when…	The shape slides left or right and up or down
The vector $\begin{pmatrix}3\\4\end{pmatrix}$ means	3 right 4 up
The vector $\begin{pmatrix}-3\\4\end{pmatrix}$ means	3 left 4 up
The vector $\begin{pmatrix}3\\-4\end{pmatrix}$ means	3 right 4 down
The vector $\begin{pmatrix}-3\\-4\end{pmatrix}$ means	3 left 4 down
To describe a translation	1. Translated 2. Vector $\begin{pmatrix}a\\b\end{pmatrix}$
Enlargement is when…	The shape gets bigger or smaller using a scale factor (see section on similar shapes too)
To describe an enlargement	1. Enlarged 2. Scale factor ___ 3. Centre of enlargement (__,__)
An enlargement by a negative scale factor 2…	Enlarges away from the centre Flips the shape Makes the lengths twice as big 
Rotation is when…	The shape twists around a point
The origin is	The co-ordinate (0,0)
The angles used to rotate a shape are	90° quarter turn 180° half a turn 270° three quarter turn

To describe a rotation	1. Rotated 2. Degrees (90° or 180°) 3. Direction (clockwise or anti-clockwise) 4. Centre of rotation (__,__)
The order of rotational symmetry of a shape is…	The number of time is rotates onto itself before returning to original position
Reflection is when…	The shape is flipped in a mirror line
The equation of the dashed line 	$y = 2$
The equation of the dashed line 	$x = -3$
The equation of the dashed line 	$y = x$
The equation of the dashed line 	$y = -x$
The equation of the x-axis	$y = 0$
The equation of the y-axis	$x = 0$
To describe a reflection	1. Reflected 2. Line of reflection ($x =$ __ or $y =$ __)
An invariant point is	A point that hasn't moved/changed (hasn't varied)

Maths

Surface Area & Plans & Elevations

To find the surface area of a 3d object	Find the area of each face and add them together
You work out surface area when the question talks about	Painting the shape Covering the shape
The units of surface area are	Units squared e.g. cm^2 or m^2
Surface area of a cylinder	$2\pi r^2 + 2\pi rh$
Find the surface area of this cylinder 	$Use\ 2\pi r^2 + 2\pi rh$ d=6 r=3 h=9 $(2 \times \pi \times 3^2) + (2 \times \pi \times 3 \times 9)$ $= 18\pi + 54\pi$ $= 72\pi\ cm^2$

Plans and elevations are ___ of _____ drawn as __ shapes	Plans and elevations are **views** of **3D objects** drawn as **2D** shapes
The plan view is the view from ____	Above
Draw the plan view of (the arrow is pointing to the front elevation) 	
Draw the front elevation of 	
Draw the side elevation of 	
Front view of this cylinder 	
Plan view of this cylinder	
Front view of this pyramid 	
Plan view of this pyramid	
Include the dimensions means	Label the lengths of the shape

Science

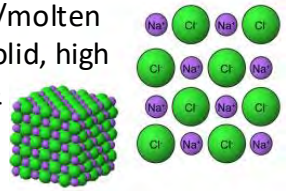
Chemistry key concepts – bonding (C5-C7)

Ions

- Atoms are more stable with full outer electron shells
- Metals lose electrons resulting in a positive ion. E.g. sodium in group 1 → Na^+ ion and calcium in group 2 → Ca^{2+} ion
- Non-metals gain electrons resulting in a negative ion, e.g. oxygen in group 6 → O^{2-} ion and chlorine in group 7 → Cl^- ion

Ionic Compounds

- Positive and negative ions arrange in a regular lattice
- This explains properties including ability to dissolve, conduct electricity when dissolved/molten but not solid, high melting & boiling points



Fullerenes, Allotropes

C60

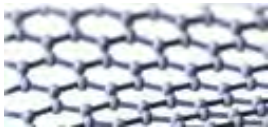
Strong, weak intermolecular forces (like graphite)

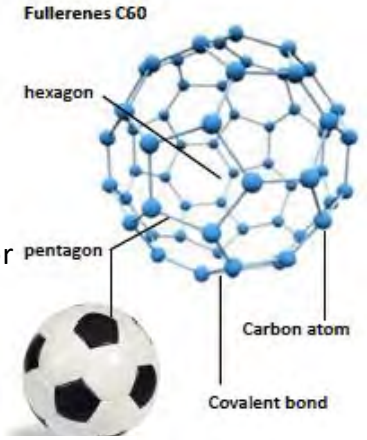
Can be used as lubricants

Graphene

Strong, light, good electrical conductor

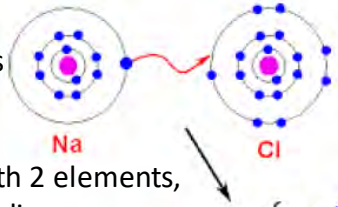
Can be rolled into tubes

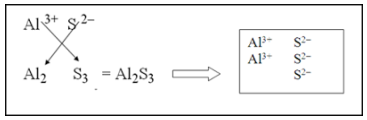


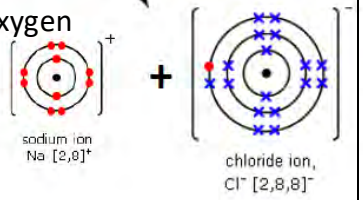


Ionic Bonding

- Positive and negative ions are attracted and form a compound
- Compound name –ide with 2 elements, -ate with 3 elements including oxygen
- Use the crossover method to determine the formula





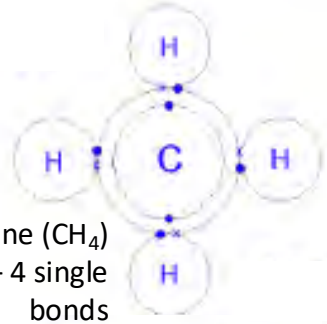


Covalent Bonding

- Electrons are shared to complete the outer shell
- Simple molecular, strong bonds between atoms
- Weak between molecules → gases at room temp

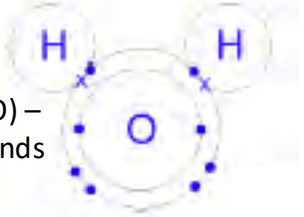
Hydrogen (H_2) – 1 single bond

Oxygen (O_2) – 1 double bond



Methane (CH_4) – 4 single bonds

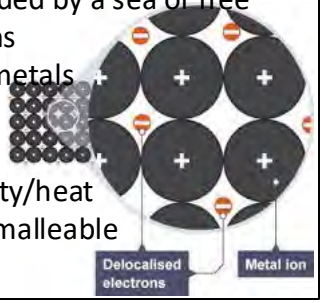
Carbon dioxide (CO_2) – 2 double bonds



Water (H_2O) – 2 single bonds

Metallic Bonding

- Metal atoms lose electrons to become positive ions surrounded by a sea of free electrons
- Allows metals to conduct electricity/heat and be malleable

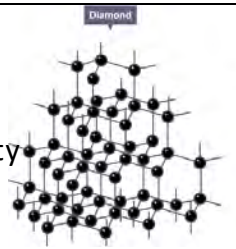


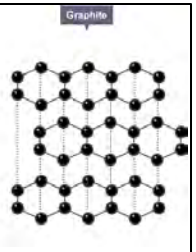
Bonding Models

Ball and stick models are limited: they don't show electrons and appear to have large gaps between atoms. Dot and cross diagrams are limited: they are 2D and don't show bond angles.

Giant Covalent Structures, Allotropes

- Bonding between many non-metal atoms
- Diamond, each C atom forms 4 bonds
- Rigid, strong and doesn't conduct electricity
- Used for cutting tools
- Graphite, each C forms 3 bonds leaving a free electron and weak bonds between layers
- Soft, good electrical conductor
- Used as a lubricant





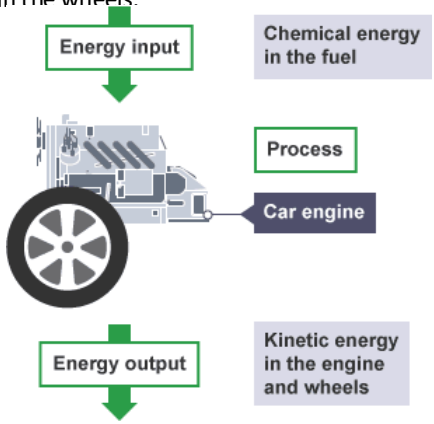
Science

Physics – P3 – Energy

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:

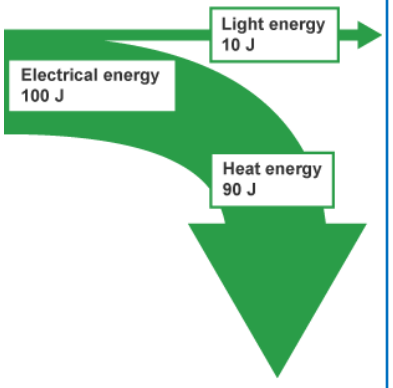
- The distance travelled while the brakes are applied.
- Slows the car down by friction.
- Affected by: Road conditions (e.g. loose gravel, wet); tyre conditions; weight of the vehicle.

Energy diagrams:

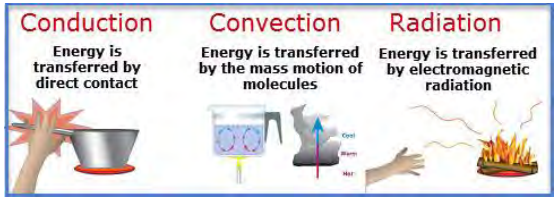
Energy transfers between energy stores can be represented by Sankey diagrams.

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.



Transferring heat: Heat is transferred in three 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.

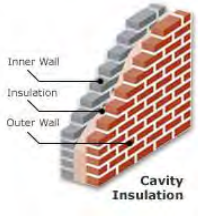
$$\text{GPE} = m \times g \times h$$

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.



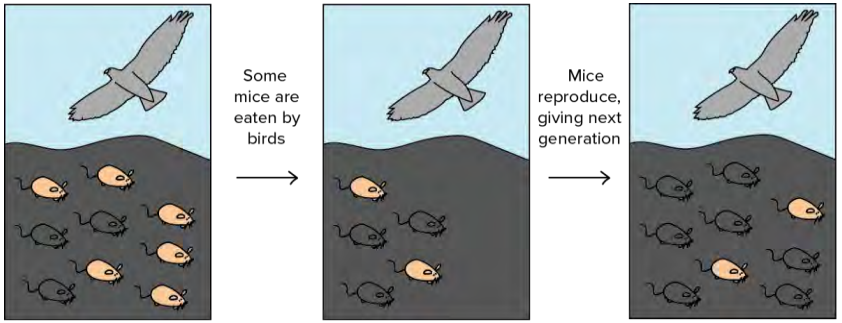
Energy efficiency: Energy cannot be created or destroyed. Some energy is transferred to the useful store (light in the case of the lightbulb). Some of the energy is transferred to a different store and is wasted (heat in the case of the lightbulb).

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

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

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



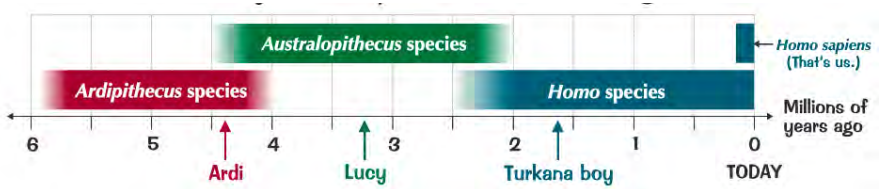
A population of mice has moved into a new area where the rocks are very dark. Due to natural genetic variation, some mice are black, while others are tan.

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)

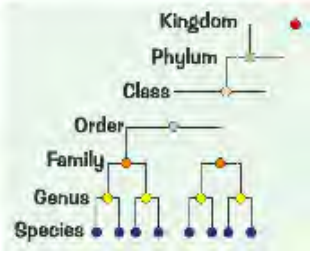
- Fossils arranged in date order show gradual changes in organisms over time
- Key hominid (human-like) fossils:



- 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)

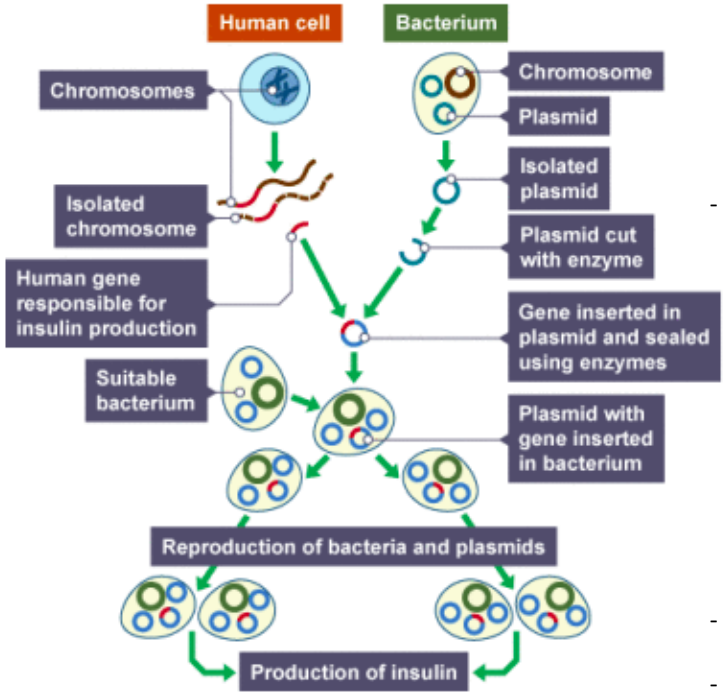
- Breeds = animals e.g. dog breeds
- Varieties = plants e.g. apple varieties

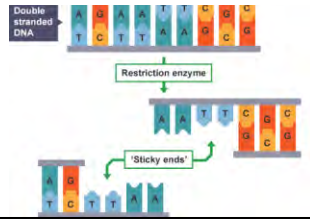
Selective Breeding (p36)

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

H - 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

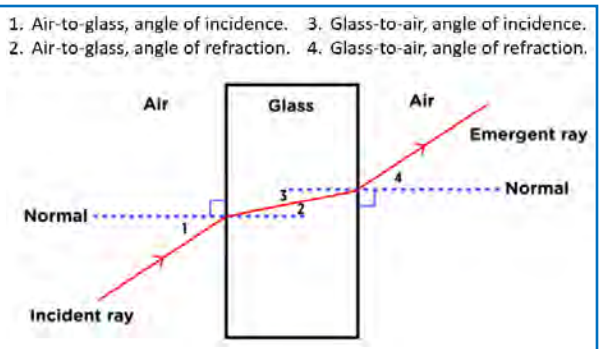
Genetic engineering in agriculture (p37)

- 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)

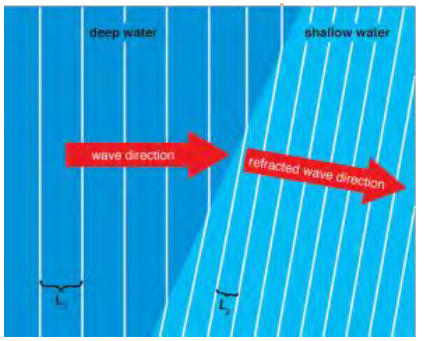
Science

Refraction :

- Normal line is at 90° to the material surface.
- From less dense to a more dense material: light bends towards the normal.
- From more dense to less dense material: light bends away from the normal.



H – Refraction : Speed of waves depends on depth of water. Shallow water causes waves to slow down and refract. Wavelength is also reduced. For all types of waves (including EM), different wavelengths refract by different amounts.

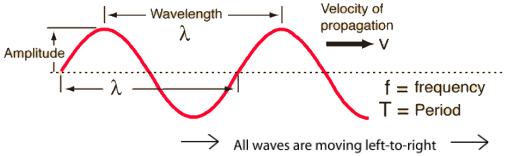


Describing waves

Frequency f: number of wavelengths passing a point per second (Hz).

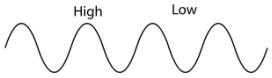
Wavelength λ : Distance between two consecutive peaks (m).

Period T: Time taken for one wavelength to pass a point (s).

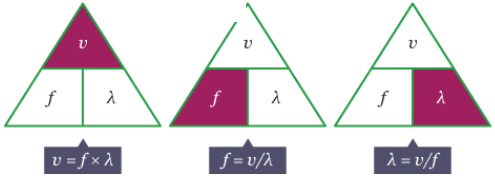


Longitudinal Waves
Waves "pile up" left to right

Transverse Waves
Waves "pile up" up-and-down

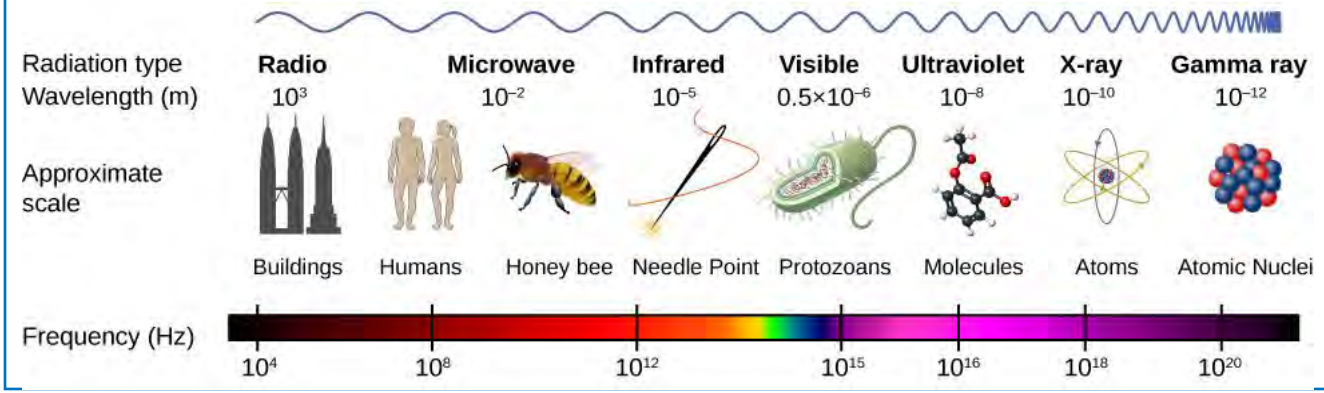


Wave speed

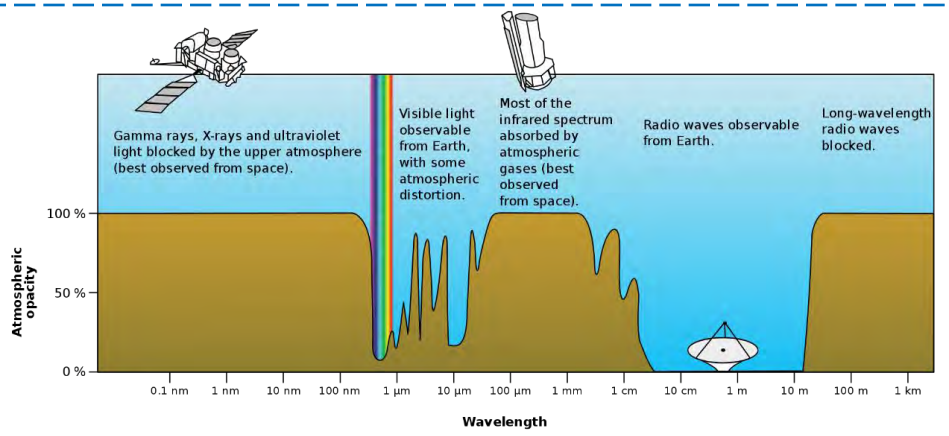


Speed of light (vacuum) $= 300\,000\,000\ m/s$
Speed of sound in air = 330 m/s

Electromagnetic waves): All EM waves are transverse and all travel at the speed of light.



H – Electromagnetic waves through space : Stars and other space objects emit EM waves at all wavelengths. Some EM waves are absorbed by the atmosphere, making it difficult to detect EM radiation at those wavelengths. For example, radio waves can be observed on Earth, but gamma rays and x-rays cannot.



9.3 My School Life – Vocabulary List

Cabot Learning Federation

Quelle est ta matière préférée?	What is your favourite subject?
L'anglais	English
L'espagnol	Spanish
Le français / les langues	French / languages
Le théâtre	Drama
Le dessin	Art
Le sport (L'EPS)	P.E.
L'informatique	I.C.T. (Computer Studies)
La musique	Music
La technologie	D.T.
La géographie	Geography
L'histoire	History
La religion	R.S. (Religious Studies)
L'éducation civique	P.S.H.E (Health and Wellbeing)
Les mathématiques	Maths
Les sciences	Science

Quelles sont les règles?	What are the rules?
On doit / On ne doit pas	You must / You must not
On peut / On ne peut pas	You can / You can not
Il faut	You must
Il est interdit de/d'	It is forbidden to
Écouter en classe	(to) listen in class
Utiliser son portable en classe	(to) use your phone in class
Porter des bijoux	(to) wear jewellery
Porter du maquillage	(to) wear make-up
Porter des baskets	(to) wear trainers
Manquer les cours	(to) miss lessons
Être à l'heure	(to) be on time
Mâcher du chewing-gum	(to) chew chewing-gum
Faire ses devoirs	(to) do homework

Qu'est-ce que tu en penses?	What do you think of it?
C'est/Ce n'est pas	It is/It is not
Intéressant (e)	Interesting
Pratique	Practical
Utile/inutile	Useful/not useful
Facile/Difficile	Easy/difficult
Ennuyeux (se) /barbant (e)	Boring
Passionnant (e)	Exciting
Créatif (ve)	Creative
Important (e)	Important
Trop	Too
Très	Very
Assez	Quite
Un peu	A bit (a little)
du tout	At all

Qu'est-ce que tu voudrais faire dans le futur?	What would you like to do in the future?
Je vais	I am going
Je voudrais/J'aimerais	I would like
Réussir mes examens	To pass my exams
Recevoir des bonnes notes	To get good results
Faire un apprentissage	To do an apprenticeship
Chercher du travail	To search for a job
Faire du bénévolat	To do voluntary work
Voyager autour du monde	To travel the world
Avoir des enfants	To have children
me marier	To marry
Apprendre à conduire	To learn to drive
Devenir	To become
Médecin/Veterinaire	A doctor/a vet
Professeur/Avocat(e)	A teacher/a lawyer
Mécanicien(ne)/Plombier(ière)	A mechanic/a plumber
Pompier (ière)	A firefighter
Coiffeur(euse)	A hairdresser

Comment est ton uniforme scolaire?	What is your school uniform like?
Je porte	I wear
Il faut porter	You must wear
Une veste/ un blazer	A blazer/jacket
Un pull	A jumper
Une chemise	A shirt
Un t-shirt	A t-shirt
Une cravate	A tie
Une jupe	A skirt
Des chaussettes	Socks
Un pantalon	Trousers
Des chaussures	Shoes
Un collant	Tights
Un hijab	Hijab
Moche	Ugly
Beau/belle	Beautiful
(In)confortable	(un)comfortable
Cher	Expensive
Pas cher/bon marché	Not expensive/cheap
À la mode	Fashionable
Démodé(e)	Old-fashioned

La journée scolaire	The school day
Je quitte la maison	I leave the house
Je vais au collège	I go to school
Les cours commencent à	Lessons start at
Les cours terminent à	Lessons end at
Ça dure	It lasts
La récréation	Breaktime
L'heure du déjeuner	Lunchtime
Le matin	The morning
L'après-midi	The afternoon
Le soir	The evening
Un élève	A pupil

9.3 My school Knowledge Organiser

School – Subjects, uniform and time
Future plans & jobs

Cabot Learning Federation

The present tense	ER verb	IR verb	RE verb
Je (I)	-e	-is	-s
tu (you)	-es	-is	-s
Il/Elle/On (he/she/one)	e	-it	-
Nous (we)	-ons	-issons	-ons
Vous (you all)	-ez	-issez	- ez
Ils /Elles (they)	-ent	-issent	-ent

The future tense in French

You can talk about the future by using the **near future** tense.
Use part of the verb ALLER and the infinitive to say what you are **going** to do.

Ce soir, je vais jouer au tennis. This evening I am going to play tennis.
Demain, Paul va faire un gâteau. Tomorrow Paul is going to make a cake.

You can also use the following phrases with an infinitive to refer to the future.
Je veux= I want
Je voudrais = I would like
J'aimerais = I would like
J'espère = I hope

Adjectives describe nouns e.g., a **black** blazer.

In French, adjectives normally go after the words they are describing e.g., une chemise bleue (a blue shirt) and they must agree with the noun they are describing.

Adjectives must agree with the noun (or pronoun) they describe in gender and in number.

This means that if the noun an adjective describes is feminine, the adjective must be feminine e.g., une veste noire (a black blazer).

If that same noun is also plural, the adjective will be feminine **AND** plural as well e.g., les chaussettes noires (black socks).

Comparatives – to express more or less than
… est plus + adjective + que - is more…adjective…than
… est moins + adjective + que - is less…adjective… than
… est aussi + adjective + que – is as…adjective…as
For example:
L'anglais est plus intéressant que la géographie. (English is more interesting than Geography)
L'histoire est moins active que l'E.P.S. (History is less active than PE)
Le français est aussi difficile que les maths. (French is as difficult as maths).

French Year 9 .4 Tenses and Festivals

Les phrases du passé	Past Tense Time Phrases
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 ago)
Le weekend dernier	Last weekend

Les verbes au passé	Past Tense Verbs
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 phrase du futur	Future Tense Time Phrases
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	In the future
Quand j'aurais ... ans	When I will be.... years old
L'été prochain	Next summer
L'hiver prochain	Next winter
Le weekend prochain	Next weekend

Les verbes clés	French Festivals
Ma fête préférée est...	My favourite festival is
Noël	Christmas
La veille de Noël	Christmas Eve
Le Pâques	Easter
Le Dipavali	Divali
Le Hanoukka	Hanukkah
L'Aïd	Eid
Le premier avril	April Fool's Day
La Chandeleur	Candelmas
Le Nouvel An	New Year
La Saint-Sylvestre	New Year's Eve
La Saint-Valentin	Valentine's Day
La fête des Mères	Mother's Day
Le 14 juillet	Bastille Day
Un jour férié	A bank holiday
Le premier mai	May Day/Labour Day
La fête de la musique	Music festival
L'anniversaire	Birthday
Le mariage	Marriage
Un fête	Party
Les invités	Guests
Les cadeaux	Presents
Le muguet	Lily of the valley
Les blagues	Joke
Un repas spécial	A special meal
Un cadeau	A cake
Les feux d'artifices	Fireworks
Religieux/religieuse	Religious
Traditionnel/traditionnelle	Traditional
En famille	Family

Les verbes clés	Key Verbs
Célébrer	To celebrate
Boire	To drink
Décorer	to decorate
Donner les cadeaux	To give presents
Chanter	To sing
Danser	To dance
Allumer les bougies	To light candles
Manger	To eat
Préparer	To prepare
S'amuser	To have fun
Inviter	To invite
Regarder	To watch
S'habiller	To dress up
Se rencontrer	To meet up with family
Apporter	To bring
Se relaxer	To relax
Passer	To spend
Réunir	To gather
Ouvrir	To open
Voir	To see
Je célèbre avec	I celebrate it with
Nous allons nous souhaiter	We wish each other

Les verbes au futur	Future Tense Verbs
Je vais aller	I will go
Je vais célébrer	I will celebrate
Je vais manger	I will eat
Je vais boire	I will drink
Je vais ouvrir	I will open
Ça va être	It will be

9.4 Tenses and Festivals

Verbs and the present tense in French

The infinitive

When you look up a verb in the dictionary, you find its original, unchanged form which is called the ***infinitive*** (regarder, manger, boire, finir, jouer, avoir, être, etc.). The infinitive ends in **–er**, **-ir** or **–re.**

Forming the present tense in French

Take off the last 2 letters of the infinitive (**–er**, **-ir** or **–re)** and add the following endings depending on the pronoun:

	ER verb	IR verb	RE verb
je	-e	-is	-s
tu	-es	-is	-s
il / elle/ on	-e	-it	/
nous	-ons	-issons	-ons
vous	-ez	-issez	-ez
ils/elles	-ent	-issent	-ent

Verbs and the near future tense in French

You can talk about the future by using the **near future** tense (*le future proche*). Use part of the verb ALLER followed by the infinitive to say what you are **going** to do.

Ce soir je **vais jouer** au tennis. *Tonight I am going to play tennis.*
Demain Paul **va faire** un gateau. *Tomorrow Paul is going to make a cake.*

ALLER	
Je vais	I am going
Tu vas	You are going
Il /elle /on va	He /she/one is going
Nous allons	We are going
Vous allez	You (lot) are going
Ils /elles vont	They are going

Verbs and the past tense in French

You can talk about the past by using the **perfect** tense (*le passé composé*).

The perfect tense has 2 parts:

•The auxiliary (***avoir*** or ***être***) – use ***être*** *with* ***Mrs Vandertramp*** *verbs*

•The past participle (must agree in number and gender for ***Mrs Vandertramp*** *verbs)*

To form the past participle, take off the infinitive endings (**–er**, **-ir** or **–re)** and add **–é, -i** or **–u**.

J'**ai** achet**é** des baskets au centre commercial. *I* ***have bought*** *trainers at the shopping mall.*

Hier il **a** jou**é** au foot dans le parc. *Yesterday he play****ed*** *football in the park.*

Hier elle est all**ée** au cinema - *Yesterday she went to the cinema*

AVOIR auxiliary ÊTRE	
Avoir	Être
J'ai	Je suis
Tu as	Tu es
Il /elle a	Il /elle est
Nous avons	Nous sommes
Vous avez	Vous êtes
Ils /elles ont	Ils /elles sont

9.4 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

9.4 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 9.4 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.

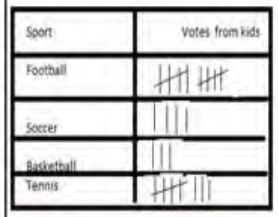
FUTURE SIMPLE			
Person	Verbs		
	Hablar	Comer	Vivir
Yo	hablar - é	comer - é	vivir - é
Tú	hablar - ás	comer - ás	vivir - ás
Usted, él, ella	hablar - á	comer - á	vivir - á
Nosotros-as	hablar - emos	comer - emos	vivir - emos
Vosotros-as	hablar - éis	comer - éis	vivir - éis
Ustedes, ellos, ellas	hablar -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

PE

Key Stage 3 Knowledge Organiser – KS3 Core PE Unit 3: Analysis Of Performance

Anatomical Movements		
1	**Flexion**	**Decreasing** the **angle** at the joint.
2	**Extension**	**Increasing** the **angle** at the joint.
3	**Adduction**	Limb moves **towards** the mid-line of **the body.**
4	**Abduction**	Limb moves **away from** the mid-line of **the body.**
5	**Rotation**	A **circular movement** around a **fixed joint.**
6	**Circumduction**	When the limb moves in a **circle.**
7	**Dorsi Flexion**	**Bending** the **foot up** towards the shin.
8	**Plantar Flexion**	**Bending** the **foot downward** towards the ground.

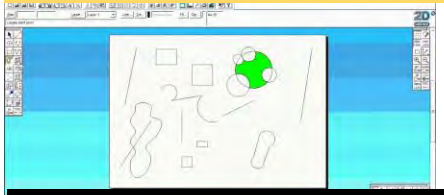
Methods of Performance Analysis			
	Method of analysis	**Explanation**	**Example**
9	**Verbal feedback**	Spoken feedback used to improve performance levels.	
10	**Tally chart**	Visual information on the number of items or happenings.	
11	**Peer observation**	When someone else in the class watches you perform and feeds back to you.	

DT

Resistant Materials

	Hardwood	Softwood	Engineered wood
Origin	Deciduous trees that have leaves and seeds	Conifer trees that have needles and cones	Real timber, waste wood or a combination
Examples	Ash, beech, birch, cherry, oak, maple, and walnut	Cedar, fir, pine, spruce and redwood	Plywood, MDF, chipboard and veneered boards
General Characteristics	Slower growth rate and often higher density	Faster growth rate and often lower density	Large standard sized panels of varying density
Uses	High quality furniture, decorative woodwork, decks, flooring…	Building components, furniture, exterior cladding…	Furniture (shelves and cupboards), walls, counters…
Cost	Typically, higher cost	Typically, lower cost	Lower cost

Computer Aided Design- 2D design-



Solder iron

Laser cutter

Vacuum former

Advantages of CAD

- Increased accuracy of design compared to hand drawings.
- Designs can be saved & edited for mistakes/ changes easily.
- Can be exported to different formats for manufacture e.g DXF & STL.
- Designs can be tested virtually instead of physically modelled.

File

Coping Saw

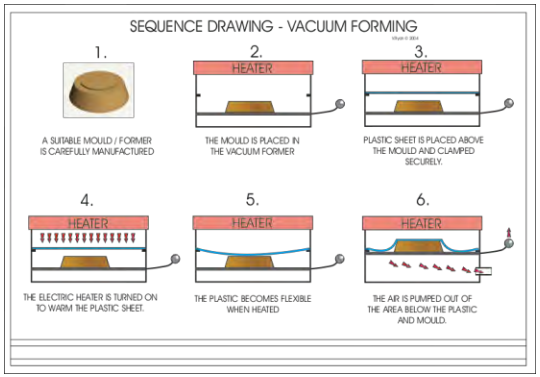
Tri-Square

Tenon Saw

Bench Hook

Pillar Drill

Vertical Sander



Polymers (plastics) Plastics

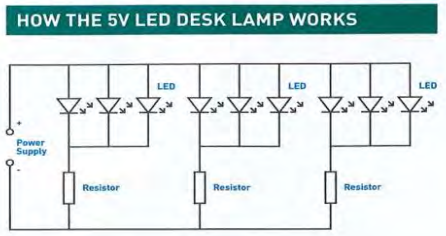
- During this project you will use plastics. Its important you know the difference between the 2 main groups of plastics; **thermosetting plastic** & **thermoforming plastic**.

Thermoforming plastic Are plastics which don't resist heat and can be easily formed into shapes by heating and remoulding.

Thermoforming Plastic	Properties & Uses
Acrylic	Hard and shiny, resist weather well. Can be used to make baths, motorbike helmet visors and shop display signs.

Thermosetting Plastic	Properties & Uses
Melamine Formadehyde	Strong and scratch proof. Used to laminate chipboard to form kitchen worksurfaces.

Thermosetting plastic Resist heat and fire. They undergo a chemical change when heated and moulded and permanently become hard and rigid.



The circuit diagram for the 5V LED Desk Lamp is shown above. It is a very simple circuit. The board contains nine LEDs, these are grouped in to threes, with each group of three sharing a current limit resistor.

LEDs can be damaged if too much current goes through them so a 33 Ω resistor is on each 'branch'. This allows around 20mA to each LED or 60mA per branch.

DT

Food Tech

Food Employability Skills – What do you need to get a job in the Food Industry?

- Listening
- Speaking
- Problem Solving
- Creativity
- Staying Positive
- Aiming High
- Leadership
- Teamwork

Carbohydrates

Carbohydrates fall into 3 categories:

- **Starchy**
- **Sugars**
- **Fibre (non-starch)**

Starchy Carbs Include

- Bread
- Pasta
- Rice
- Cereals
- Oats
- Grains

Sugary Carbs Include:

- Fruits
- Soft drinks
- Sweets
- Desserts
- Sweet potatoes
- Some cereals

Fibrous Carbs Include:

- Vegetables
- Beans
- Whole grains

Allergy	What this means	Foods to avoid	Alternatives
Coeliac	Allergy to wheat/gluten. This means that eating gluten triggers an immune reaction which damages the lining of the small intestine.	Foods made with flour cannot be eaten Including cakes, biscuits, pasta and bread.	Gluten free flour or flours made from other ingredients like rice, soya etc.
Nut allergy	Can cause anaphylactic shock where the throat swells until a person cannot breathe. They need to be treated with adrenalin.	Any nut-based products - Some people are allergic to some nuts but not others.	You need to check packets to ensure all ingredients are free from traces of nuts.
Fish and seafood	Can cause an increase in severe asthma. Itching of the mouth, skin reactions, and anaphylaxis causing swelling and possible death.	Any sea food, some everyday fish, and fish supplements	Use other meats and avoid any oils that may contain fish.
Egg allergy	Eggs have two allergenic parts, the yolk and the white. They can cause anaphylactic shock, skin reactions and upset stomach.	Any foods containing eggs including; ice cream, cakes, battered foods etc.	Egg replacer.
Lactose intolerance	The body is unable to digest lactose, a type of sugar mainly found in milk and dairy products. Symptoms commonly include skin reactions, Allergic conjunctivitis, nausea, abdominal pain, vomiting, or diarrhoea.	Any dairy products containing lactose Including cheeses, creams, butter, milks etc.	Lactose free milks and dairy products.

Being Healthy

Staying healthy isn't just about maintaining the correct weight.

It is therefore possible to be the correct weight and unhealthy.
Why? Because to be healthy we need the right combination of nutrients.

The easiest way to do this is to eat a wide variety of different foods from the Eatwell Guide and to understand which foods supply which nutrients and why we need them.

When choosing dishes and planning healthy foods the cooking method is important as it can turn a healthy food into a less healthy food.

Adding fat to help to cook food adds calories and excessive calories can lead to weight gain. If a saturated fat (butter, lard, ghee, goose fat) is used then this can lead to high cholesterol which is linked to coronary heart disease. If an unsaturated fat (olive oil, rapeseed, vegetable or sunflower oil) is used this is better for our health but still high in calories.

Potatoes are a good choice of food to consider when understanding how the method of cooking can affect health as they can be cooked in so many ways.

For example:
Boiled potatoes = 83 kcals per 100g
Baked potatoes = 87 Kcals per 100g
Chips = 255 Kcals per 100g (more if they are fries)
Crisps = 532 Kcals per 100g

History

Year 9
Unit 9.4
The Holocaust

Key People

 Leon Greenman	An Englishman that was sent to Auschwitz
 Emanuel Ringelblum	Assembled an archive called Oneg Shabat which documented life in the Warsaw ghetto.
 Mordecai Anielewicz	Led the first armed uprising against the Nazis in the Warsaw ghetto.
 Alice Herz-Sommer	Played in the orchestra and played concerts for prisoners at Alice Herz-Sommer

Key Terms

Genocide	The deliberate and systematic attempt to exterminate a whole race of people.
Holocaust	A word we use to describe what Hitler and the Nazis did to Jewish people during World War Two.
Einsatzgruppen	The killing squads who followed the army into Poland and Russia following the invasions of these countries.
Anti-Semitism	Hostility or prejudice towards Jewish people
Persecution	When one group of people in a society are subjected to cruelty, violence or murder because of their race, gender, religion or sexuality
Discrimination	When one group of people in a society are treated differently to other groups in a society because of their race, gender, religion or sexuality.

Jewish persecution

1933 April Shop Boycott
The SA stand in front of Jewish shops to prevent customers from entering.

1933 April Jewish employment limited
Jewish people not allowed to work for the government or enter the legal profession.

1938 Kristallnacht
Across Germany Jewish homes businesses are attacked, Jews are rounded up and sent to concentration camps.

1938 November
All Jewish children expelled from state schools.

1940 Madagascar Plan
The Nazis seriously considered moving all Jewish people to Madagascar.

1941 Einsatzgruppen
Part of the SS, these killing units begin the genocidal killings of Jewish people.

1941 Death camps
The first death camp is built at Chelmno to murder the Jews.

1942 Wansee Conference
The decision is made to extend the killing of Jews to the murder of every Jewish person they could reach.

1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945

1933 Limits to education
The number of Jewish students allowed to go to state school and universities is limited.

1933 October
Newspaper editors sacked.

1935 Nuremburg Laws
- Marriage and sexual relations between Jews and Aryans banned.
- Jews are no longer citizens.

1938 November
Jews are not allowed to own shops and businesses

1938 Persecution
- Jews must register property they own over a certain amount.
- All Jewish businesses must be registered.
- Jewish passports to be stamped with a J

Men must take the middle name 'Israel' and women 'Sara.'

1939 Creation of ghettos
All Jewish people to move into ghettos in the East.

1941 Forced deportation
Jewish people deported from Germany and Austria to 'the East.'

Death Marches 1944-5
All concentration camp prisoners are brought into Nazi Germany as the Germans retreat. Thousands are shot or die from exhaustion.

Key Words

Genocide - The deliberate and systematic attempt to exterminate a whole race of people.

Jews in Europe in 1933

- In 1933, 9.5 million Jews lived in Europe.
- Jewish people had lived in Europe for over 2,000 years. Greece had one of the oldest communities.
- There were Jewish communities in every European country.
- More Jews lived in the east than in the west of Europe. Most lived in Poland, the Soviet Union and Romania.
- The majority of Jewish people were not wealthy.
- Many worked in trade and commerce, but Jewish people did all sorts of jobs
- Not all Jews were religious, and religious Jews did not all believe the same thing.
- The majority were very passionate abo the country in which they lived. In Germany they were totally assimilated.

History

Year 9
The Holocaust

Resistance Jewish people were not all passive victims of the holocaust. Despite the huge difficulties they found many ways to resist from armed resistance to maintaining their culture and traditions.

The Nuremburg Laws

The Reich Citizenship Law
This law defined a citizen as a person who is "of German or related blood." This meant that Jews, defined as a separate race, could not be full citizens of Germany. They had no political rights.

The Law for the Protection of German Blood and German Honor
A law against race-mixing or "race defilement. It banned future intermarriages and sexual relations between Jews and people "of German or related blood."

Kristallnacht

On November 9-10, 1938, Nazi leaders unleashed a series of vandalism and destruction of Jewish-owned businesses, synagogues, and homes.

- Nazi officials disguised the organized nature of events. They blamed the outrage of the German population to the assassination of a German diplomatic official, Ernst vom Rath, in Paris.
- During the pogrom, some 30,000 Jewish males were rounded up and taken to concentration camps. This was the first time Nazi officials made massive arrests of Jews because they were Jewish, without any other reason.
- Afterwards, the Nazi regime ordered the Jewish community to pay a 1 billion Reichsmark fine and further measures against them.

Ghettos

There were around 460,000 inhabitants of the Warsaw Ghetto.

Jews were allowed to bring only the absolute minimum - personal belongings and bedclothes. That meant instant poverty.

Only a very small percentage of the ghetto population had any kind of regular employment Street trading became a necessity.

Food supplies were limited which caused starvation. Malnutrition, overpopulation and lack of medical care brought disease e.g. typhus.

Many Jewish residents died of starvation, diseases and cold, nearly 20% of the population. These dreadful conditions forced many to escape.

Jews who leave without permission are liable to the death penalty. The same penalty awaits those who give shelter to Jews.

The *Einsatzgruppen*

Units of the Security Police and SD (the SS intelligence service) followed the German army as it invaded and occupied countries in Europe. Referred to as "mobile killing squads."

1. Special units of the Security Police and SD assigned to security measures immediately behind German lines.
2. Waffen SS worked with police units, the army and local collaborators, the Einsatzgruppen conducted mass shootings in the Soviet Union. Targeted Jews, Roma (Gypsies), Communists, and Soviet civilians.
3. 1/3 of all Jewish Holocaust victims died as a result of this. The Einsatzgruppen were key perpetrators of mass shootings.

Mass shootings required many shooters, guns, ammunition, and transport. Shootings were seen as inefficient and the phycological impact led to development of special vans that killed people with carbon monoxide gas. It took time to kill victims with gas vans and Einsatzgruppen needed to remove bodies and clean the compartments. Mass shootings continued to be the preferred method of murder.

Death camps

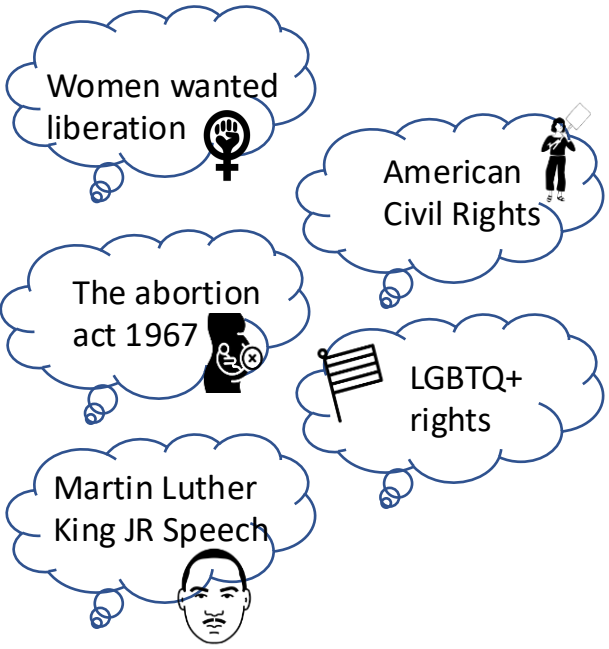
Death camps were different to the concentration camps previously established by the nazis. These were designed with the purpose of killing as many people as possible.

The most famous death camp is Auschwitz but there were many others throughout Nazi occupied Europe and they were all different.

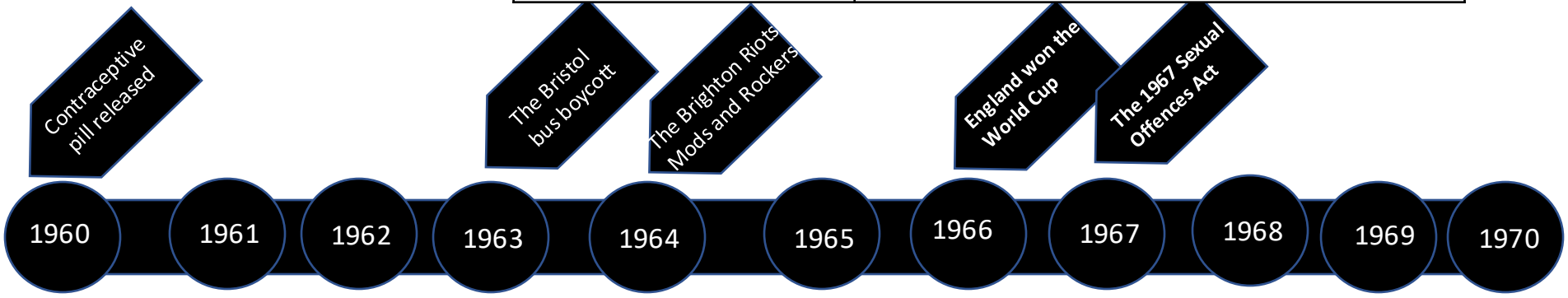
On arrival people would be sorted into those who were fit for work and those who were not. Those who were not were sent to the gas chambers immediately where they died. Those who lived suffered horrendous conditions and violence on a daily basis.

History

Were the 60s really Swinging?



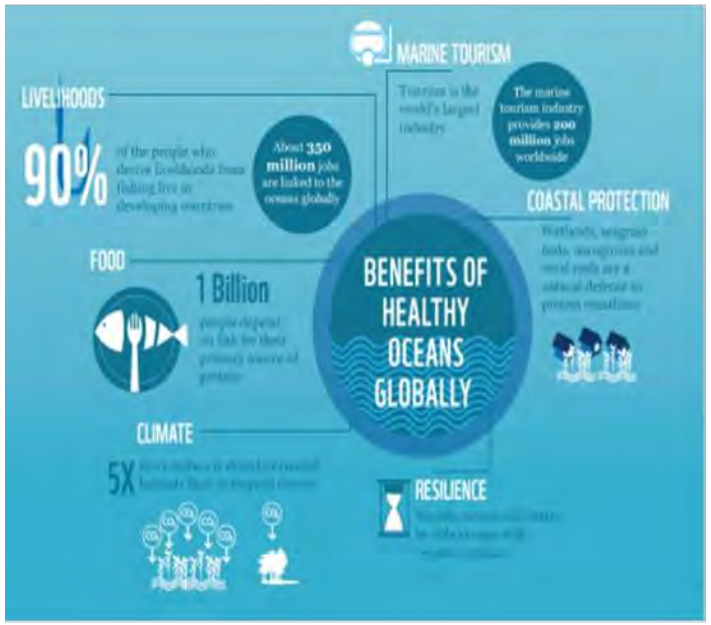
Activism	The practice of taking action to bring about social or political change.
Civil rights	The rights of citizens to political and social freedom and equality
Feminism	A social and political movement that advocated for women's rights and equality with men, particularly in areas such as education, employment and reproductive rights
Boycott	a deliberate decision by a group of people or an individual to avoid using, buying, or dealing with a particular person, organization, or product as a form of protest or to express disapproval
Influences	The capacity to have an effect on the character, development or behavior of something or someone or the effect itself
Free speech	A political and legal concept that emphasizes the importance of allowing individuals and groups to express their opinions and ideas freely, without fear of censorship or punishment

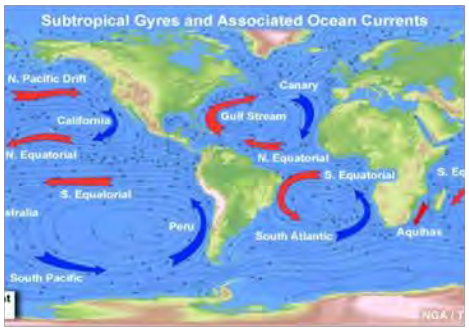


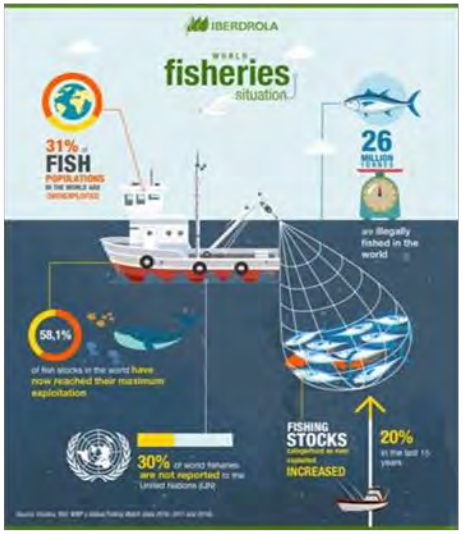
The 1960s was a decade of significant social and political change, marked by progress in civil rights and women's rights, as well as a cultural revolution that challenged traditional norms and values.

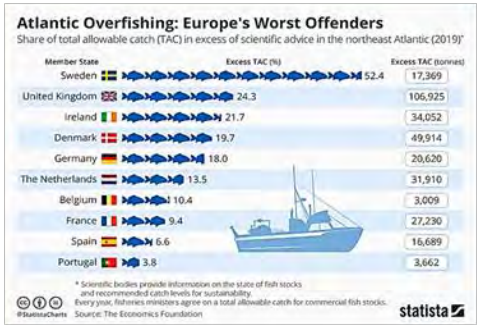
Geography

Why should we care about the ocean?









Keyword	Definition
Biodiversity	The variety of plant and animal life in a particular habitat
Great Pacific Garbage Patch	Largest of five offshore plastic accumulation zones containing plastic pollution. It is located between California and Hawaii.
Microplastics	When larger bits of plastic break down into tiny particles
Gyre	A large circular ocean current
Deep ocean currents	Currents driven by density
Surface ocean currents	Currents driven by surface winds
Overfishing	Catching more fish than the natural system can replace leading to a reduction in fish number
TAC - Total Allowable Catch	The number of fish you are allowed to catch in a particular area
Food Security	Having enough food to supply demand
Sustainable Fishing	Respecting habitats and leaving enough fish in the ocean so that fish numbers can be regulated

Geography

How can we be sustainable citizens?

Keyword	Definition
Sustainability	When materials and resources are used in a way that will **balance the needs of the present without compromising the future**
Sustainable development goals	Economic sustainability 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all"
Economic sustainability	Practices that support long-term economic growth without negatively impacting social, environmental, and cultural aspects of the community
Social sustainability	A measure of welfare where people can flourish and have the best lifestyle for
Environmental sustainability	The practice of interacting with the planet responsibly
Grey water recycling	Uses existing plumbing in your home to recycle old water for new uses
Circular economy	A system which maximises the value of resources by recycling and repurposing them as much as possible
Linear economy	A system where waste as a side result of the production, process, is discarded into the environment
Incineration	The burning of waste
Food Miles	How far your food has travelled
Carbon Footprint	The amount of carbon dioxide released into the atmosphere by a person or organisation
Fast Fashion	Cheap and speedy production of low-quality clothing
Ethical fashion	Where the garment design, production and distribution of clothing focuses on reducing harm to people and the planet.

Changemakers: How does belief inspire change? Knowledge Organiser

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
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
Conviction	A firmly held belief or opinion

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.

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

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.

Changemakers: How does belief inspire change? Knowledge Organiser

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

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

Speciesism – Peter Singer

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

Contributions to change	Significance
• 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.	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:	Activism:
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.	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.

Changemakers: How does belief inspire change? Knowledge Organiser

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.

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.

Art

MOCK GCSE PROJECT – HOW TO DEVELOP YOUR OWN IDEAS

This topic centres on the art genre/category: Developing your ideas
Developing ideas is part of the creative process for artists and designers. By exploring and refining ideas, effective decisions can be made about the final piece of artwork or design solution.

In art development is about creativity and exploring ideas in different ways. After your initial response to a stimulus (eg. Light & dark, Street Festivals), it is important that you don't just keep producing analytical drawings or market research. This isn't development.
Development is about selecting ideas, visual elements, compositions, and techniques from this initial work and using them in new ways. It is important that you don't become too attached to your first idea. Don't worry if the work you produce seems unresolved and isn't perfect. It is an important part of the creative process to try out new things and to make creative decisions based on what works and what doesn't.
And don't worry if you try something that doesn't work. Showing creativity is more important at this stage. Remember you can refine (improve/perfect) your work and produce a more finished result for the sustained project in your portfolio and your assignment.

Art Materials
Pencil
Pen/biro
Marker pen (felt)
Oil Pastel
Chalk
Ink
Acrlic paint
Watercolour
Pencil crayon
Coffee
Clay
Mod roc (Plaster)
Card
Charcoal

Art Techniques
Lino Printing
Mono Printing
Styrofoam printing
mosaic
Pottery
Collage
Sgraffito
Marbling ink
Casting

Shading Techniques
Smooth
Stippling
Scumbling
Hatching
Cross Hatching
Contour lines

PaintingTechniques
Flat wash
Solid Wash
Graded wash
Glazing
Dry Brush
Wet on dry
Wet on wet
Masking fluid/tape
Sponge
Salt

KEYWORDS	Definition
analytical drawings	A drawing which is carried out to explore and record the detailed visual qualities of a subject.
market research	Gather of information to find out what consumers like or will buy. It may also involve researching designs with a similar purpose which are already on the market.
maquettes	A small model to help plan a finished work, such as a sculpture or architectural model.
Negative space	The space between objects in a composition
Leading Lines	Lines within a composition which lead the viewer's eye to the focal point, or which create an illusion of distance.
Wash	A wash is a term for a visual arts technique resulting in a semi-transparent layer of colour. A wash of diluted ink or watercolour paint applied in combination with a drawing is called a pen and wash, wash drawing.

You should make development studies, such as drawings and paintings to show experimentation with composition. If you are working in 3D, you might make sketches and maquettes. There are several different ways composition can be developed:

- Move objects around in a still life or change the pose in portraiture or figure composition.
- Try different arrangements, e.g., linear, triangular, or circular compositions.
- Change how natural, organised, busy or sparce your composition is.
- Use different amounts of negative space, showing more or less background.
- Experiment with leading lines to draw the viewer's eye into the composition.
- Change the height and angle of your viewpoint.
- Use frames within frames e.g., looking through objects to frame
- elements of the composition.
- Create a cropped composition by zooming in to a specific area.
- Try different backgrounds.
- Edit your work digitally i.e., photoshop filters, phone apps etc.

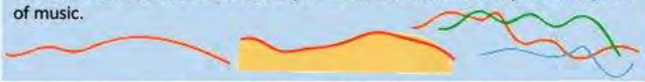
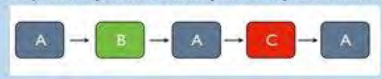
Refining a design idea does not involve major changes but is about making small changes which improve the idea in some way.
This might be done by:

- Varying a technique - eg producing a graphic design using software to achieve a more professional look
- Modifying an idea so that it functions more effectively.
- Changing a particular part of a design - eg changing a handle on a product so that it can be picked up more effectively.
- Enhancing the idea by experimenting with materials that give a better finish.
- Fine-tuning a design through small changes
- Changing the position/composition of specific elements

Music

Live Lounge

Elements of Music

Program Music	A piece of music which either **tells a story** or **describes something**.   
Pitch	Pitches is how high or low a piece of music, or a particular note, is. 
Rhythm/ Duration	Duration/rhythm means how long or short a note is.  
Dynamics	Dynamics are how loud or quiet the music is played.  
Tempo	Tempo is how fast or slow a piece of music is played.  
Texture	Texture describes how melodies, rhythms and harmonies are layered in a piece of music. 
Timbre/ Sonority	Timbre (or sonority) describes the particular sound quality of an instrument or voice.   
Structure	Structure (or form) is the overall plan of a piece of music.  

Riff	A repeated musical pattern often used in the introduction and instrumental breaks in a song or piece of music. **Riffs** can be rhythmic, melodic or lyrical, short and repeated. 
Ostinato	A repeated musical pattern. The same meaning as the word **riff**, but used when describing repeated musical patterns in *Classical* and some *World music.* 

It's Theory Time!

Note Values

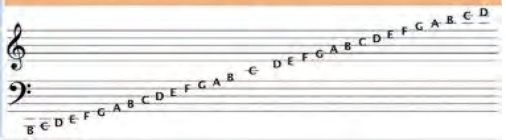
This is a *Rhythm Tree* – it is designed to help you identify what the symbols for different note values are, and how they relate to one another. Here are the note values!

Semibreve = 4 beats
Minim = 2 beats
Crotchet = 1 beat
Quaver = ½ beat
Semiquaver = ¼ beat

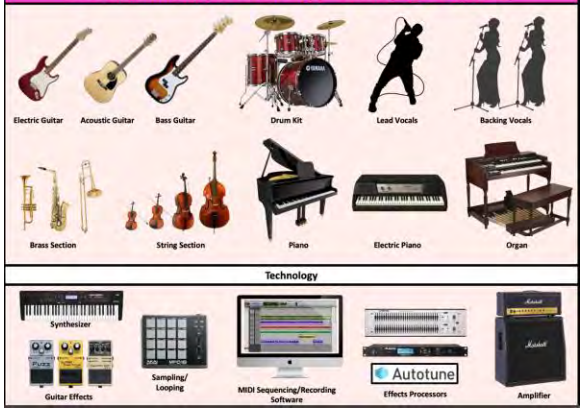
Notes on the Stave

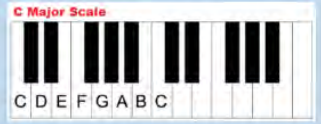
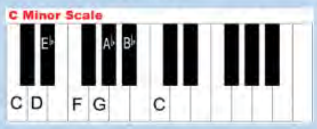
Here are the notes of the **treble** (top line) and **bass** (bottom line) clefs. When the notes fall outside the five lines of music paper, we add extra lines called **ledger** lines. Here are some phrases to help you remember where the notes go!

Treble Clef Lines: **E**very **G**reen **B**us **D**rives **F**ast
Treble Clef Spaces: **F A C E** (in the space!)
Bass Clef Lines: **G**reen **B**uses **D**rive **F**ast **A**lways
Bass Clef Spaces: **A**ll **C**ows **E**at **G**rass



Instrumentation (Rock and Pop) – Knowledge Organiser



Chord	Two or more notes played simultaneously on a piano or guitar. There are three chords needed for the standard 12-bar blues:
Major Key	A musical key which sounds happy. 
Minor Key	A musical key which sounds sad. 

Popular Song Structure

(the sections within a song and the order they are played in)

Intro | Verse | Chorus | Verse | Chorus | Bridge | Chorus | Outro

Music

Live Lounge

Example Questions

- What are the differences between live and studio music?
- Do you prefer live or studio music? Give reasons for your answer
- Compare and contrast the live version of this song with the studio version

How am I assessed?

Practical Task – A cover of a song of your choice that demonstrates the virtues of live performance

Written task: A listening and written test

Wider Listening – Some interesting examples:

- Several of BBC Radio 1's Live Lounge videos
- Postmodern Jukebox
- Live Aid, particularly Queen's set
- Snarky Puppy's studio sessions

Wider Task:

In your lessons, aim to improve your rehearsal and independence skills. This might include creating a rehearsal strategy or plan and solving problems.

Stretch and Challenge:

Always aim to personalise your performances. An example is turning an upbeat song into a soft ballad. You should also aim to perform with a sense of commitment and involvement.

Key terms:

- Studio techniques – when a range of tools are used to produce the best sound possible
- Reverb – a studio effect added to make the voice sound bigger and further away
- Autotune – a studio effect added to perfect the human voice
- Quantisation – a studio effect added to make the music perfectly in time
- Authenticity – in the context of music, the idea of a performance being 'genuine', 'real' or 'natural'

Song writing Knowledge Organiser

Verse	The part of the song that sets up the chorus and tells the story. 
Chorus	The part of the song that is usually the most memorable, and includes the title. This is typically the part of the song that people remember and sing along with! 
Bassline	The lowest pitched part of the music often played on bass instruments such as the bass guitar or double bass. Creative and distinctive basslines make your song stand out! 
Melody	The main "tune" of a song or piece of music, played higher in pitch that the **bassline.** 
Chord Sequence	The pattern of chords used to create the harmony of the song for the melody 
Lyricist	The person responsible for writing the lyrics during the song writing process. 
Strophic	A structure of a popular song which is simply Verse, Verse, Verse etc. It can also be referred to as A-A-A-A etc. 
Verse-Chorus Form	A structure of a popular song which makes use of verses and choruses – there's usually an intro, bridge and outro somewhere in there too! 

Cover version - Creating your own version of a popular song. Often artists will recreate the song in their own style or even change the genre.

How To Cover a Song

The first thing to consider when attempting to cover a song is how well you know and like the music you're trying to cover. You're about to do something that will most likely take a lot of time and effort, so the song you choose should be one that you really enjoy listening to. Knowing a song's melody and lyrics will also save you a lot of time during this process.

Whether you're covering a song that features a singer over simple guitar chords or a well-produced track that includes an orchestra, your cover will have to be condensed down to a simple version of basic chords and vocals—for now, anyway. You'll need to play something like the guitar, keyboard, or any other instrument that allows you to play chords easily.

If you have computer software or an iPad you can pre-record chord progressions to sing over. When we sit down with our instruments and learn to sing and play at the same time, we then develop performance confidence and other important skills that we can't get any other way.

To find the chords of the song you're trying to cover, try doing a simple internet search. If you're trying to cover a popular song, you'll most likely find dozens of free chord charts to choose from, but you should make sure you use a reliable source to make sure it is accurate. Ask Mrs Evans if you struggle to find a song.

Once you know the chords of what you're attempting to cover, work on mastering chord transitions and playing in the style of the song. Start by trying to match the rhythm of the song and then try humming or singing the melody over it.

Once you've nailed down a simplified version of the song, feel free to make it your own. You can change the tempo, and add instrumentation. You can change the song you're covering, but only after you know how to play the original version. And while it might seem cool to add a whole bunch of new things to a cover, changing it too much might make your version too dissimilar from the original.

Covering songs can be one of the most fun benefits of learning how to play an instrument. It's a skill that anyone who loves music can appreciate, but it takes time and effort to master.

Music

Live Lounge

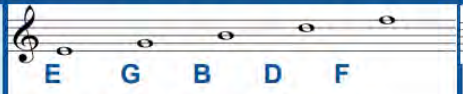
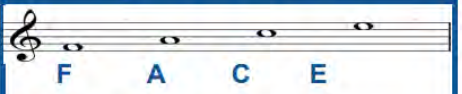
The Elements of Music: "Mad T-shirt"

Element	Definition
Melody	The main tune or musical theme.
Articulation	How the notes are played.
Dynamics	How loud and soft the volume is.
Texture	How the layers of sound fit together.
Structure	How sections of music are organised.
Harmony	The supporting chords used with the melody.
Instruments	The apparatus used to create music.
Rhythm	The pattern of notes and their durations.
Tempo	How fast or slow the speed of the music is.

Reading Music on the Stave

Treble Clef: Played by the right hand with higher pitches.

Bass Clef: Played by the left hand with lower pitches.

	Lines of the Stave	Spaces of the Stave
Right Hand (Treble Clef)	 E G B D F Every Good Boy Deserves Football	 F A C E **FACE** in the spaces
Left Hand (Bass Clef)	 G B D F A Green Busses Drive Fast Always	 A C E G All Cows Eat Grass

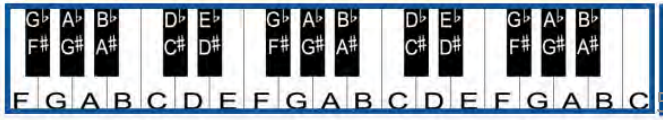
Note Durations and Rhythms—Complex

Note Symbol	Technical Name	Note Duration
	Semibreve	4 beats
	Dotted Minim	3 beats
	Minim	2 beats
	Dotted Crotchet	3/4 beats
	Crotchet	1 beat
	2 Quavers	1/2 + 1/2 = 1
	Triplet	3 quavers in the time of 2 beats
	Quaver	1/2 beat
y	Semiquaver	1/4 beat
	Four Semiquavers	1/4 + 1/4 + 1/4 +1/4 = 1 beat

Dynamics: Key Terms

Dynamic Symbol	Italian Term	Definition
	Crescendo	Gradually get louder
	Diminuendo	Gradually get softer
ff	Fortissimo	Very Loud
f	Forte	Loud
p	Piano	Soft
pp	Pianissimo	Very Soft

The Keyboard Note Names and Pitches and Finger Numbers

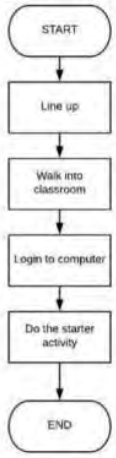


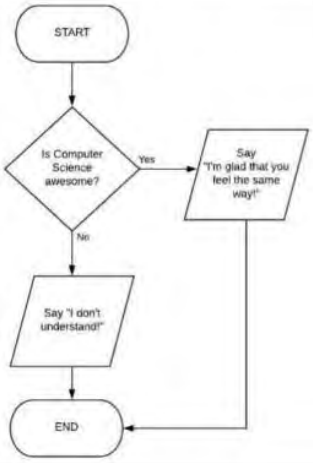
Computer Science

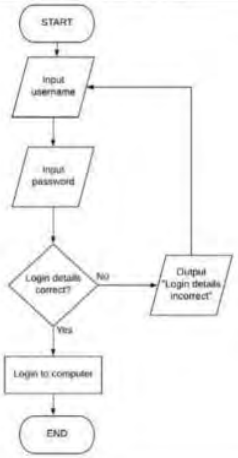
Computational thinking

Programming Construct Examples

Sequence	Selection	Iteration
A series of instructions carried out in a specific order.	When decisions are being made (IF / ELSE).	When you repeat a sequence of instructions (loops).







Definitions (use these when completing your tasks).

Algorithm	A set of step by step instructions in order to solve a problem.
Flowchart	An algorithm which is a visual representation of the steps needed to solve a problem.
Pseudocode	An algorithm which uses text to show the steps needed to solve a problem.
Decomposition	Breaking a complex problem down into smaller, more manageable problems.
Abstraction	Focusing on what is important and leaving out unnecessary detail.
You need to know the three main programming constructs:	
Sequence	A series of instructions carried out in a specific order.
Selection	When decisions are being made (IF / ELSE).
Iteration	When you repeat a sequence of instructions (loops).

What is an algorithm?

- A series of steps to solve a problem.
- They are not just about computers, we use them all the time in our everyday lives.
- There can be many algorithms to solve the same problem.

Terminator - This either contains **START** or **END**.

Input/Output - This shows something that is going in or out of the system.

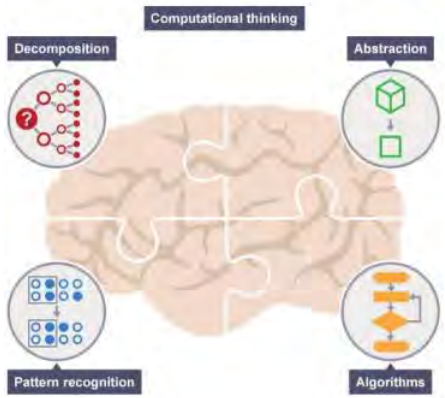
Process - This shows something that is happening.

Decision - We use these when we need to make a choice. **Decisions** must have two exits, **YES** and **NO**.

Connector - Shows the direction of data through the **flowchart**.

Computer Science

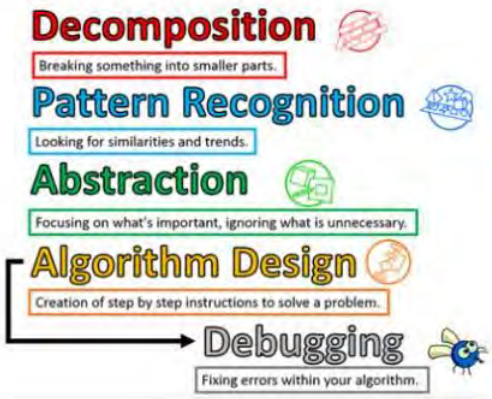
Computational thinking

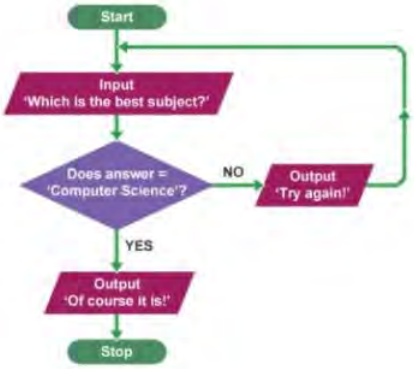


Computational Thinking	Abstraction	Decomposition	Pattern Recognition	Algorithms	Sequence	Selection
Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions. We can then present these solutions in a way that a computer, a human, or both, can understand.	Focusing on the important information only. Ignoring the details that are not needed.	Breaking down a complex problem or system into smaller, more manageable parts.	Looking for similarities among and within problems. Looking for patterns.	Developing a step-by-step solution to the problem, or the rules to follow to solve the problem.	Following an ordered set of instructions.	Making a decision within a computer program to decide which instruction to carry out next.

Keywords

Variable	Stores data in a computer program. This has the ability to change when the program is running.
Data type	The type of data which is being stored in the variable. Variables use the following data types: • Character (single character) • Real (Decimal numbers) • Integer (Whole numbers) • Boolean (True/False) • String (More than 1 character)
Increment	When a variable increases in value (e.g. score **increments** by 100).
Decrement	When a score decreases in value (e.g. lives **decrements** by 1).





Computer Science

Data presentation

8.5 - Data Representation: Knowledge Organiser

@HPAComputing #ReadyToCode

Keywords - Binary - Character Sets	Bit	Nibble	Byte	Kilobyte	Megabyte	Gigabyte	Terabyte
	A single 1 or 0	4 bits	8 bits	1024 Bytes	1024 Kilobytes	1024 Megabytes	1024 Gigabytes

Binary	Denary/Decimal	Base 2	Base 10	ASCII	UNICODE	
A number system that contains two symbols, 0 and 1. Also known as base 2.	The number system most commonly used by people. It contains 10 unique digits 0 to 9 Also known as decimal or base 10.	The binary counting system, uses two symbols - 0 and 1	The denary counting system, uses ten symbols - 0 to 9	A 7-bit character set used for representing English keyboard characters	A 32-bit character set. Is capable of representing over 2 billion different characters including a wide range of emoji	

BINARY ADDITION

There are four rules that need to be followed when adding two binary numbers. These are:

0+0=0
1+0=1
1+1=10 (binary for 2)
1+1+1=11 (binary for 3)

OVERFLOW ERROR

	1	0	1	0	1	1	0	0
+	0	1	1	0	1	1	0	1
1	0	0	0	1	1	0	0	1

Sometimes, when adding two binary numbers we can end up with an extra digit that doesn't fit.

This is called an **overflow error.**

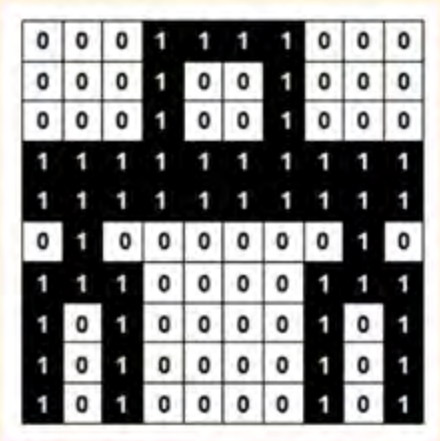
Computer Science

Data presentation

Digital Images

Digital images are made up of pixels. Each pixel in an image is made up of binary numbers.

The more pixels, the higher the resolution. This means the file size increases as the quality increases



Colour Depth

The number of bits used to store each pixel is called the colour depth.

Number of colours	Bits Required
2	1
4	2
8	3
16	4
32	5
64	6

Impact

If you increase the colour depth and/or resolution of an image, you are using more binary.

This means that the file size increases as the quality of the image increases.

BITMAP FILES (RASTER)

Bitmap files are images that are made up from a number of tiny square pixels.

A **Pixel** is known as the smallest identifiable part of an image.

Each **pixel** can only be **one single colour** at a time, however when thousands of pixels are used together they can create very detailed images.

Each pixel can determine what colour to display as it is **represented by a binary** value that corresponds to a colour e.g. 1101 might be dark green.

Resolution is the concentration of pixels that are within a specific area i.e. an image. The greater the number of pixels within a specific area, the higher the image quality.

Computer Science

Network

LANs

1. Stands for **Local Area Network**
2. A LAN is when devices are connected over a **small geographical area**
   - Examples: School, home
3. You can connect to a LAN using **WiFi** or **Ethernet**

Typical hardware used to create a LAN.

Ethernet cable

Router

Switch

Wifi extender

Peripherals

Network interface card

WANs

1. Stands for **Wide Area Network**
2. A WAN is when networks are connected over a **large geographical area**
   - Example: The internet
3. You can connect to a WAN through your telephone connection, mobile data (GPRS) or cable/satellite.
4. WANs connect using a **modem**. Nowadays these are built into the **router**.

WPANs

1. Stands for **Wireless Personal Area Network**
2. A WPAN allows us to **pair** devices together over a short range.
   - Examples
     - A speaker connected to a phone
     - A smartwatch connected to a smartphone
3. You can connect to a WPAN using bluetooth.

Advantages and disadvantages of different connection types.

	Advantages	Disadvantages
Wifi	Good for connecting **portable** devices to a LAN.	Slower **data transfer speed** compared to Ethernet. Limited **range** (unless you use a wifi extended) Can be **hacked** by **unauthorised users**
Ethernet	Faster **data transfer speed** compared to wifi. Has a **range** of 100 metres.	Cables are more **expensive** than using a wifi connection.
GPRS	Can be used on the move. Good for mobile devices such as smartphones.	Mobile data can be **expensive** - requires a SIM card. Limited/slow connection speed in some locations.
Bluetooth	Up to 7 bluetooth devices can be **paired** at once.	Can be hacked by **unauthorised users** The **range** is quite short.

Computer Science

Network

Firewall

- **Controls** which **programs** can **send** or **receive** **data packets** from your computer or network.
- Stops **intruders/unauthorised users** from accessing your computer system.
- Only **trusted** programs should be allowed to send and receive data packets.

Programs: You might know these as "apps". For example, Microsoft Word, Google Chrome, Norton Antivirus and Sonic the Hedgehog!

Unauthorised users: Users who are not allowed to access your computer or network.

Trusted programs: These are downloaded or purchased from safe sources. "Free software" should always be checked by reading online reviews and then scanned for viruses before installing.

Antimalware

- **Scans** your computer **periodically** for **malware.**
- **Quarantines** malware so that it doesn't spread to other files or computers.
- You need to scan all **downloads** and email **attachments** before opening them.
- Needs to be **updated** regularly in order to keep up to date with the latest **threats.**

Malware: Malicious software which can harm your compu For example viruses, trojan horses, worms and zombies.

Attachments: Files which are joined to an email messag For example, an image or a text file. Any type file can be attached to an email, so be careful!

Periodically: For example daily, weekly, after each login

Quarantines: Isolates (keeps away) from other files so that other files do not get infected on the computer or network.

Encryption

- Scrambles data packets using a **cipher** so that they cannot be read by unauthorised users.
- You need a **key** to decrypt the data packets so that they can be read.
- Websites which require you to send personal information should be encrypted **(HTTPS).**
- **WiFi connections** should also be encrypted to stop **unauthorised users** from accessing your network.

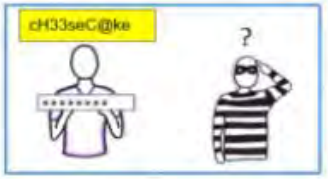
Encrypt: Scramble the data packet so it can't be read.

Decrypt: Unscramble the data packet so that it can be read.

Cipher: A method (way) of encrypting a data packet. 128bit encryption is just 1 example. **Key:** The code needed to decrypt the data packet.

Personal information: For example your username, password, address, email address, telephone numbers and bank details. There are people out there who want to steal your identity!

Passwords



- Needs to be at least 8 characters long.
- Should include UPPERCASE, lowercase, numbers and Symbols (e.g. ! $ @ -).
- Stops **unauthorised users** from accessing your account/profile and changing/deleting/stealing your files.

Profile: Your account when you login. A profile has your personal files and settings.

Phishing

- Is a cybercrime in which a target or targets are contacted by email, telephone or text message.
- By someone posing as a legitimate institution to lure individuals into providing sensitive data.
- Sensitive data -such as personally identifiable information, banking and credit card details, and passwords