UNA LABORANTES

KINGS'

SCHOOL · WINCHESTER

Knowledge Organiser 2024

Year 9 | Spring


INSPIRING FUTURES • ACADEMIC EXCELLENCE • EXCEPTIONAL CHARACTER •

PUPIL DETAILS

Name	
Tutor Group	
Tutor Room	
House	
Library No.	
Locker No.	
At Kings', there are people that I can go to if anything is worrying me.	My Trusted Adults are: 1. _____ 2. _____

What I need for PE:	

My Passwords	
Platform	Password

TIMETABLE

	Monday	Tuesday	Wednesday	Thursday	Friday
1					
2					
3					
Lunch					
4					
5					
After School					

KINGS' SCHOOL · WINCHESTER

OUR SCHOOL VALUES

At Kings' our Values are at the heart of our school culture. They underpin our mission that we are **Working Together to Achieve Inspiring Futures, Exceptional Character, and Academic Excellence**.

We are reminded of our mission by our motto, Una Laborantes (Working Together), and our core values – developed and agreed by the Kings' community of pupils, staff, parents, and carers – help to guide every child, employee, and volunteer towards attaining that goal.

These values act as our inspiration and navigation in our learning, our work, and our life at school as we work together so that you achieve personal growth and future academic success.

Our school values are to:

DISCOVER BRILLIANCE IN EVERYONE	HAVE UNLIMITED AMBITION	EARN SUCCESS	BE KIND, BE HUMBLE, AND HAVE INTEGRITY	MAKE A DIFFERENCE

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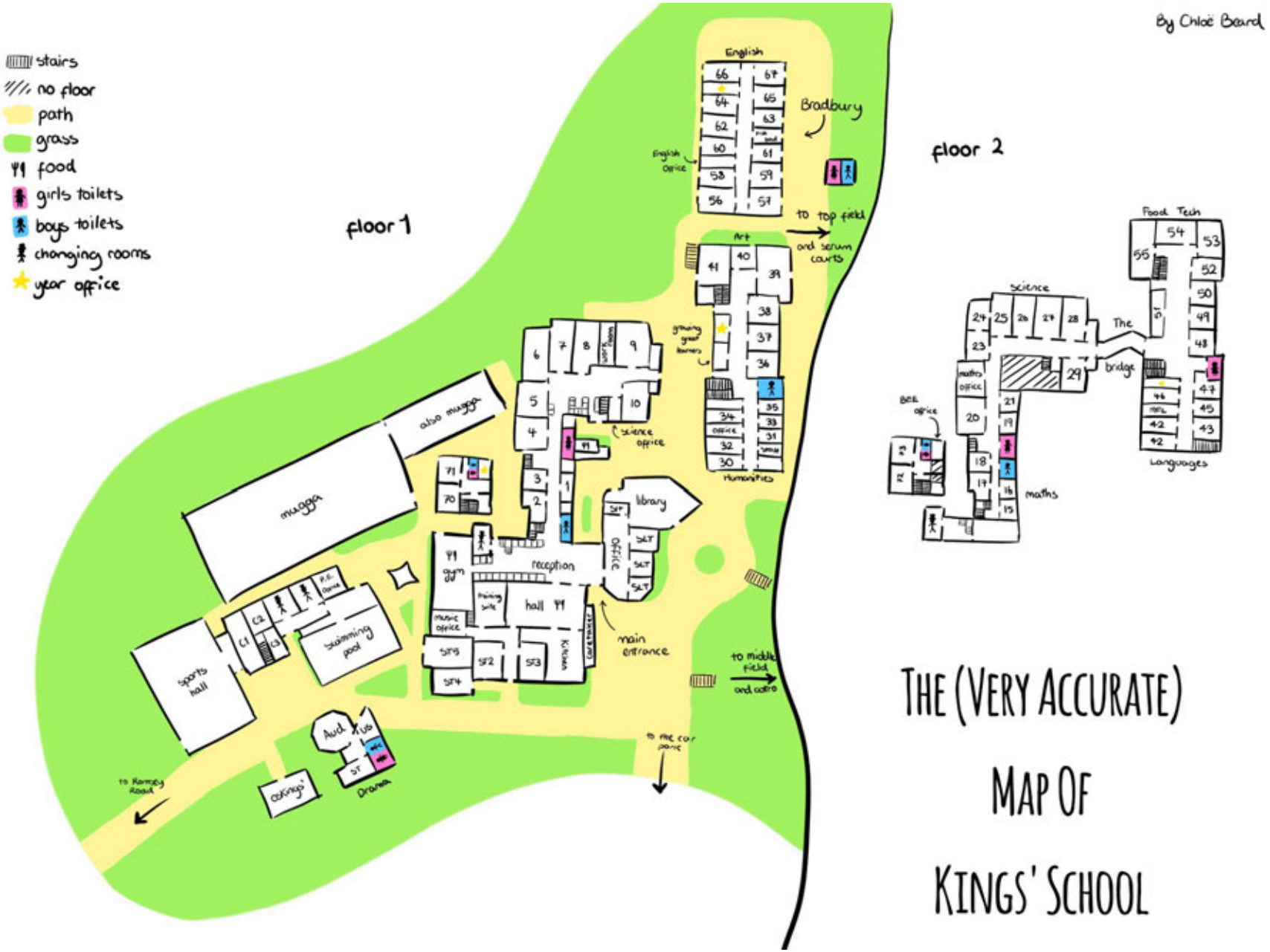

By Chloë Beard
stairs
no floor
path
grass
food
girls toilets
boys toilets
changing rooms
year office
floor 1
floor 2
English
Bradbury
English office
to top field and astro courts
Art
Food Tech
Science
The bridge
Languages
maths
Bell office
science office
humanities
library
office
reception
hall
gym
main entrance
to middle field and astro
to the car park
to Ramsey Road
sports hall
swimming pool
muga
abo muga
Aud
Drama
THE (VERY ACCURATE) MAP OF KINGS' SCHOOL

HOURS OF ATTENDANCE

Pupils must arrive at school by **8.45 a.m**. and although some pupils may arrive at school earlier than this, parents are advised that there will be no staff supervising pupils before 8.30 a.m.

Pupils are considered late if they have not registered by 8.45 a.m. (unless they are late with good reason e.g.: school bus was late.) Punctuality to lessons is important. Repeated lateness is sanctioned.

If for any reason pupils are late for school, or need to leave school early, they must bring a note signed by a parent/carer. They should then 'sign in/out' at Reception.

Time	Movement
08.45 - 09.10	Tutor Time
	Movement
09.15 - 10.15	**Lesson 1**
	Movement
10.20 - 11.20	**Lesson 2**
	Movement
11.25 - 12.25	**Lesson 3**
12.25 - 13.05	Lunch
	Movement
13.10 - 14.10	**Lesson 4**
	Movement
14.15 - 15.15	**Lesson 5**

BULLYING HAS NO PLACE AT KINGS'

At Kings, we firmly believe in fostering an inclusive and supportive environment for every individual within our community. Bullying in any form is completely unacceptable. Our school must be a safe space where everyone is able to thrive.

Our values of kindness, humility and integrity mean that we tackle negative behaviour proactively:

1. **Recognise the signs:** It's important to be able to identify bullying behaviours. Bullying can manifest in various forms, such as physical, verbal, social, or online. Look out for signs like repeated teasing, name-calling, exclusion, spreading rumours, physical aggression, or cyberbullying.
2. **Report:** Don't face bullying alone. Reach out to your trusted adult, trusted friends, family members, or other teachers who can provide guidance and support. This can be done face to face or on the safeguarding tile.

Remember, nobody deserves to be bullied, and you have the right to feel safe and respected. If you witness bullying, ensure that you report it so that we can keep every member of our school community safe.

Safeguarding Concern

HOMEWORK

Homework at Kings' is central to our mission of helping you have an inspiring future and building your exceptional character and achieving academic excellence.

It also embodies our values:

- **Earn Success:** Homework reinforces learning, and a strong work ethic.
- **Discovering Brilliance:** Homework encourages critical thinking and problem-solving, helping students discover their brilliance and unique abilities.
- **Unlimited Ambition:** Engaging in homework fuels intellectual curiosity and a desire for lifelong learning, going beyond the boundaries of formal education.

Homework should enable you to learn, or practise what you have been taught in school. To consolidate your learning, you can also practise learning from your knowledge organiser.

Key Stage 3	For how long?	Set	Type of homework
Core			
Science	30 minutes	Once a week	Educake Knowledge Organiser
Maths	30 minutes	Once a week	Sparx
English	30 minutes	Once a week	Variable
Languages	20 minutes	Once a week	Variable
Innovation Subjects			
Tech	20 minutes	Once a week	Variable
Computing	20 minutes	Once a week	Variable
Humanities			
Geography	20 minutes	Once a week	Variable
History	20 minutes	Once a week	Variable
RE	20 minutes	Once a week	Variable
Creative Arts			
Drama	20 minutes	Once a week	Variable
Music	20 minutes	Once a week	Variable
Art	20 minutes	Once a week	Variable
Reading	20 minutes	Every day	

Have you learned it?

Your Knowledge Organiser contains the core knowledge that you need to know and learn.

Use your Knowledge Organiser to see if you can complete the following activities. If you can do these things, you know something well. How many can you do?

1. Answer a question about it, under a time pressure.
2. Explain it in your own words.
3. Teach it to someone else.
4. Apply what you know in a new context.
5. Remember it a week, a month or a year later?

Some things that may help you remember information:

1. Well-designed flashcards that you have made with key information.
2. Mnemonics, such as *"Richard of York Gave Battle In Vain"* (visible light spectrum – the rainbow)
3. Mind maps (keep the paper landscape)
4. Timelines (dates of key events, in order)
5. A grid of key quotes according to characters and themes.
6. Creating a story that includes all the information.
7. Answering practice questions
8. Re-create a section of your Knowledge Organiser from memory.

Name

Subject

Class/Group

Classroom

Pupils must keep all of their equipment in a clear plastic pencil case, suitable for exam use.

The minimum stationery needed is on the back cover of this Knowledge Organiser.

Date

Presentation Guidelines

Neat presentation of your work is important.
It shows that you care about your learning.

1. The lesson title should be written and underlined with a ruler.
2. The date should be written on the top, right-hand side of the page and underlined.
3. Pupils should write in blue or black ink. Key words can be highlighted or underlined.
4. Pencils should be used for drawings, diagrams and graphs.
5. All underlining must be done using a ruler.
6. All loose sheets must be stuck into exercise books.
7. Feedback work should be clearly indicated – green (or another coloured) pen should be used for all improvement tasks.
8. A line should be used to rule off after every piece of work.

KINGS'

SCHOOL · WINCHESTER

How to use your knowledge organiser

You are given a Knowledge Organiser at the beginning of the term. You are responsible for it and need to take care of it. Please do not lose it, or doodle on it.
We will ask you to replace any lost/defaced Knowledge Organisers, as they are a tool that you and your teachers will use in lessons and for homework.

Your teachers have created Knowledge Organisers to support each unit of learning across Key Stage 3. These are then compiled into a booklet for you. Knowledge Organisers are a simple tool that provides the foundational knowledge required for each particular unit across each subject. These are called your **Knowledge Base**. They are not the whole curriculum – you will be taught much more than this, but they do outline the basic knowledge that every pupil should know.

Your teachers will tell you how often you will need to learn from your knowledge organiser when it is set as homework. Working with a knowledge organiser every day helps to establish routines in home learning, developing a confident use of vocabulary and independent study skills. You will be tested on the information that you have learned from the knowledge organisers in your lessons. There are many effective ways of learning from a Knowledge Organiser. One way that your teachers may use is called: Look, Cover, Write, Check. Please do not be tempted to just copy from the Knowledge Organiser – studies have shown that this is not effective.

Subjects have also added other information for you – this is indicated in a section called a **Knowledge Builder**. This may be extension tasks, or further study that may interest you.

Please see these videos for more information on what Knowledge Organisers are, and how to use them:

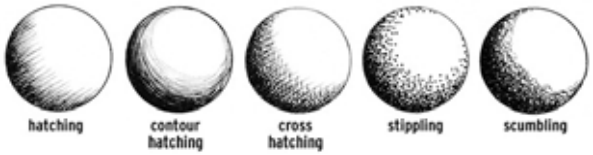
Full Video

Look, Cover, Write, Check

1. Pen drawing		
1.1	hatching	Closely spaced parallel lines used to create tone.
1.2	cross hatching	Layers of hatching at right-angles to create a mesh-like pattern to show tone.
1.3	stippling	A technique of using dots to describe tone.
1.4	scumbling/ scribbling	Random lines or marks to create tone.
1.5	tone	How light or dark something is.
1.6	gradation	A visual technique of gradually transitioning from one shade to another.
1.7	contour hatching	Shading that follow the contour of the shape.

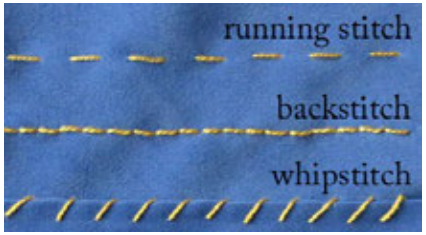
2. Lettering		
2.1	typography	Arranging letters using different fonts, sizes, and spacing to make the words clear, and visually appealing.
2.2	guidelines	A series of lines to help with the scale, placing and accuracy when drawing.
2.3	spacing	Distance between parts of the drawing.
2.4	sketching	A rough drawing to help plan a piece of artwork.
2.5	accuracy	Being true and correct, free from mistakes and error.
2.6	scale	The relative size of one object compared to another.
2.7	detail	A small or individual element of a piece of work.

3. Colour pencil		
3.1	blending	A gradual transition between a colour or tone.
3.2	layering	The process of building up layers of colour or tone.
3.3	burnishing	Repeated layers of colour or tone so no paper grain can be seen, often done in a circular movement to avoid pencil lines.
3.4	analogous colours	Colours that are next to each other on the colour wheel and that blend well together.

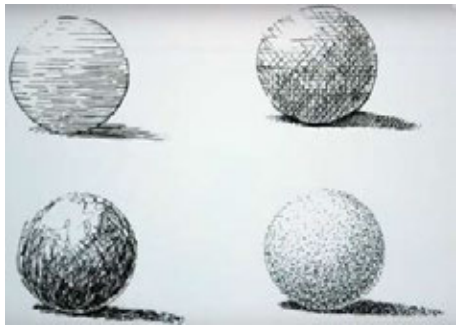


4. Felt food construction		
4.1	design	The plan of what you intend to create.
4.2	template	A shape used to draw around, so pieces are cut correctly.
4.3	felt	A non-woven fabric with fibres that have been matted together.
4.4	wadding	A soft substance that is used for padding or stuffing.
4.5	applique	A technique where pieces of material are joined on to another piece of material.

5. Stitching		
5.1	thread	Used to sew fabric together.
5.2	needle	A small slender piece of metal with an eye that is used for sewing.
5.4	running stitch	The simplest stich, even stitches which have a gap between that run across the cloth without overlapping.
5.5	back stitch	Stitches in a line with no gaps.
5.6	whip stitch	A stitch that goes over the edge of one piece of fabric to join it to another piece of fabric.
5.9	casting off	A neat way to seal off the stitches so that they do not unravel.



Watch how to create speres with different pen drawing techniques.



Guidelines are used so the sizing, placing and angles of the letters are correct. Watch how they are used.

Watch to see how Marchello Barenghi creates this incredible hyper realistic drawing of a bag of M&M's.

Extension tasks:

Keep a food diary of everything you eat and draw a section of it

Draw a selection of food containers, from your kitchen cupboard, to create an interesting illustration like this.

Knowledge Builder: Art

Learn how to sew further embroidery stitches by watching these links:

Blanket stitch:

French knot:

Watch the amazing British artist Lucy Sparrow who created the whole contents of a newsagent out of felt.

1. Using computers safely, effectively and responsibly		
1.1	social media	Age recommendation for a range of popular apps. How to behave when using social media. Consider what constitutes cyberbullying, how to prevent it and when to report it.
1.2	online safety	Staying safe online. Making sure that people are protected from harm of using any electronic device for online purposes.
1.4	harassment	Using text messaging, instant messaging and email to harass, threaten or embarrass the target.
1.5	impersonating someone	Developing a screen name that is similar to the victim's screen name and then posting rude or hurtful remarks while pretending to be the victim.
1.6	inappropriate content	Content images online that contains personal information about others, hateful or malicious content and/or sexually explicit material.
1.7	peer pressure	Influence from members of one's peer group.
1.8	cyberbullying	Use of phones, instant messaging, e-mail, chat rooms or social networking sites to harass, threaten or intimidate someone.
1.9	digital footprint	The trail of data you leave when using the internet.
1.10	grooming	Is when someone builds a relationship, trust and emotional connection with a child or young person so that they can manipulate, exploit and abuse them.
1.11	trolling	To antagonise (others) online by deliberately posting inflammatory, irrelevant, or offensive comments or other disruptive content.
1.12	social engineering	Tricking someone into giving away their personal details.
1.13	PEGI rating	Provides age classifications for video games.

2. Key Vocabulary		
2.1	sexting	Sending sexually explicit photographs or messages via mobile phone.
2.2	sad fishing	Social media users seek for sympathetic reactions and comments by posting sad stories.
2.3	cat fishing	The process of luring someone into a relationship[by means of a fictional online persona.
2.4	social networking	Apps that allow the sharing of digital content.
2.5	consent	Permission for something to happen or agreement to do something.
2.6	portray	Describe something in a particular way.
2.7	bystander	A person who is present at an event or incident but does not take part.
2.8	Fake news	False or misleading information presented as news. Often the aim is to damage the reputation of a person.

3. If you experience anything inappropriate online:	
3.1	Block, delete and report.
3.2	The process to do this will be different depending on which social network you are using – make sure you know how when you first sign up.
3.3	Viewing inappropriate content can be very upsetting but you don't need to go through it alone, speak to a trusted adult. Support can also be sought with Child Line – 0800 1111
3.4	Report to CEOP using the report button.

1. Process CAD / CAM		
1.1	laser cutter	Works by directing the output of a high-power laser through lenses onto a material. Typically woods or plastics.
1.2	Computer Aided Design (CAD)	The use of computers to aid in the creation or modification of a design idea. 2D Design / Sketch Up.
1.3	Computer Aided Manufacturing (CAM)	The use of software and computer-controlled machinery to automate a manufacturing process.

2. Computer Aided Design (CAD)		
2.2	Advantages of CAD	• Reduces human error • Saves time • Save and edit ideas • More accurate than hand drawn
2.3	Disadvantages of CAD	• Staff training costs • The software is expensive • A PC is required

3. Sketch Up		
3.1	Sketch Up	3D computer program used in architecture, interior design, landscape architecture, civil and mechanical engineering, film and video game design.
3.2	Advantages of Sketch Up	1. It's easy to draw your design because it's designed to behave like an extension of your hand. 2. Simple-to-learn 3D drawing tool. 3. Sketch Up is accurate and precise.

3. Key icons to remember

Visual	Tool Name & Description	Visual	Tool Name & Description
	Select - Use this tool to "select" the parts of your model you want to work with.		3D Text - Use this tool to create 3 dimensional geometry from text.
	Paint Bucket - Use this tool to assign materials and colors to pieces of your model.		Push/Pull - Use this tool to push and pull surfaces in your model, allowing you to add or subtract volume from the pieces in your model.
	Eraser - Use this tool to delete entities. The Eraser tool can also be used to hide and soften edges.		Rotate - Use this tool to rotate, stretch, distort, or copy entities along a rounded path.
	Rectangle - Use this tool to draw rectangular pieces in your model.		Follow Me - Use this tool to duplicate the profile of a face along a path.
	Circle - Use this tool to draw circles in your model.		Scale - Use this tool to resize and stretch pieces in your model.
	Line - Use this tool to draw edges or lines in your model.		Tape Measure - Use this tool to measure distances, create guide lines or points, or scale a model.
	Freehand - Use this tool to draw irregular hand-drawn lines in the form of curves.		Offset - Use this tool to create copies of lines and faces at a uniform distance from the originals.
	Arc - Use this tool to draw arcs in your model.		Move - Use this tool to move, stretch and copy pieces of your model. This tool can also be used to rotate components and groups.

Sketch Up Website

Pirate Ship Playhouse tutorial – PDF

3D Design Software

Sketch up tutorial – PDF

Stretch your vocabulary		
a.1	architecture	The process and the product of planning, designing and constructing building and other structures.
a.2	product design	To create a new product to be sold by a business to its customers.
a.3	ergonomics	The study of people's efficiency in their working environment.
a.4	prototype	A prototype is an early sample or mock-up of the product you wish to build. A prototype is a quick model explaining the actual plans for the final product.

Digital resilience – Childnet website

NSPCC

BBC Bitesize

CEOP

Stretch your vocabulary		
a.1	biometrics	Used to identify an individual digitally including fingerprint and retina scanning.
a.2	hacking	Third party activity that compromises computer hardware, devices and networks.
a.3	fomo	Fear of missing out.
a.4	Dark Web	The part of the World Wide Web that is only accessible by means of special software, allowing users and website operators to remain anonymous or untraceable.
a.5	avatar	an icon or figure representing a particular person in a video game, internet forum.
a.6	Night shift mode	To reduce this blue light emission and the strain on eyes.

1. Perform Very Successfully			
Physical	1.1	posture	The position of a person's body when standing or sitting.
	1.2	gait	The way an actor walks around the space to communicate their character.
	1.3	stance	The position or attitude the actor's body is in.
Vocal	1.4	pace	The speed at which lines of dialogue are delivered.
	1.5	pitch	How high or low the sound of an actor's voice is, when delivering dialogue.
	1.6	emphasis	Stress on a particular word or phrase within a sentence to indicate importance or change meaning.
Space	1.7	levels	Can be used to suggest different locations, status and authority that one character has over another.
	1.8	eye contact	When two people look directly into one another's eyes, or at a fixed position.
	1.9	stage presence	The energy, or charisma and appeal, that an artist has whilst performing.

2. Unit Key Vocabulary			
1.10	T2	stimulus	A starting point that stimulates ideas for a performance.
1.11	T2	persecution	To oppress or harass with ill-treatment, especially because of race, religion, gender, sexual orientation, or beliefs.
1.12	T2	hot-seating	When an actor is asked questions to which they answer in role. This enables them to explore situations and motivations for their character.
1.13	T2	flashback	A moment that interrupts the scene to show an audience a moment that occurred in the past.
1.14	T3	marking the moment	Highlighting the action at a significant point to focus the audience on an important moment.
1.15	T2	transitions	The way scenes are linked together.

3. Drama Key Vocabulary			
1.16	T2	devising	Creating a performance linked to a stimulus/idea developed by your own ideas.
1.17	T2	dramatic potential	The range of ideas that can be stimulated to create an innovative performance.
1.18	T2	cross cutting	When 2 or more scenes are performed in the same time zone, in different locations at the same time.

4. Unit Context					
Devising **Drama** **AQA** **GCSE**	A collaborative project to create and develop ideas to communicate meaning in a devised theatrical performance.	Maya Angelou 1951 – 2014	African-American poet and civil rights activist who wrote about persecution, having experienced her own troubles, using this experience to help make a difference to others.	Malorie Blackman 1962 – present	British playwright and children's author, creating works that explore the persecution of communities and individuals due to their race and beliefs.

1. Perform Very Successfully			
Physical	1.1	exaggeration	When an actor overemphasises a movement/s, lines or actions to emphasise or entertain for dramatic effect.
	1.2	mannerism	A gesture or way of speaking that is linked to a specific characteristic/character.
	1.3	expression	The vocal quality to convey an actor's emotional state within a specific moment or situation.
Vocal	1.4	accent	A manner of speaking linked to a specific region or country.
	1.5	projection	The strength of speaking whereby the voice is used loudly and clearly.
	1.6	emphasis	Stress on a particular word or phrase within a sentence to indicate importance or to change meaning.
Space	1.7	stage position	The position of the actor/set on stage taken from the actor's point of view.
	1.8	eye contact	When two people look directly into one another's eyes, or at a fixed position.
	1.9	proxemics	The way space/distance between characters on stage is used to represent the relationships between them.

2. Unit Key Vocabulary			
1.10	T3	parody	An imitation of a particular style or writer, that is exaggerated for comic effect.
1.11	T2	conventions	A set of rules or techniques linked to a specific style of performance.
1.12	T2	multi-role	When an actor alters their vocal/physical skills to perform more than 1 character in short succession.
1.13	T3	anchor	A journalist that presents during a news program, making the stories more accessible to audiences.
1.14	T2	split screen	When two scenes are taking place in different time zones and in different locations.
1.15	T2	McCarthyism	Linked to senator Joseph McCarthy, this refers to the panic, accusations, and trials of suspected communists in the US.

3. Drama Key Vocabulary			
1.16	T2	direct address	Speaking directly to the audience.
1.17	T2	comedy	Entertainment designed to make an audience laugh.
1.18	T2	character	A role an actor plays, different from themselves,
1.19	T2	protagonist	The main character within a story/performance.
1.20	T2	antagonist	A character that actively opposes the protagonist.

4. Unit Context			
Arthur Miller 1915 - 2005	Jewish American playwright who wrote The Crucible. Miller's style of theatre was realistic. He wrote plays that told stories of real life without giving false hope.	The Crucible plot synopsis	A fictional play based on the Salem witchcraft trials which took place in Salem, Massachusetts in 1692. It tells the story of a village that becomes embroiled in a witch hunt. The people of Salem live in a constant state of fear as more and more people are accused of witchcraft. Led by Abigail Williams and her friends, the court is forced to hold trials against innocent members of the community to find out the truth.

READ

LISTEN

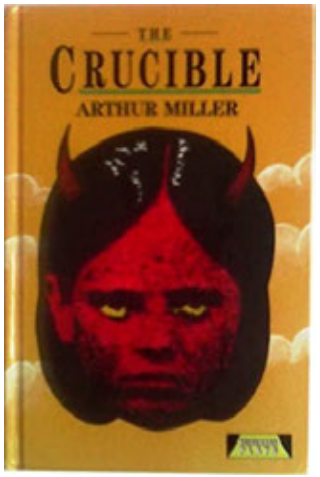
A true refugee story of Hamed & Hessam Amiri that highlights their plight for asylum.

WATCH

'Still I Rise' – Maya Angelou live performance.

Ben Harper - I'll Rise. Song taken from Maya Angelou's poetry.

READ



LISTEN

Horrible Histories, news report. Try to acknowledge how the actors use direct address & multi-role to transition through the scenes & locations.

WATCH

'The Crucible' directors cut trailer.

The climactic scene in 'The Crucible' that we will be exploring during this unit of work.

Characters		
1.1	Othello	The protagonist and tragic hero. The general of the armies of Venice. He is married to Desdemona. Othello is an eloquent and physically powerful figure, respected by most of those around him.
1.2	Desdemona	Othello's wife. The daughter of the Venetian senator Brabantio. Desdemona and Othello are secretly married before the play begins.
1.3	Iago	The antagonist. He works for Othello and wants to lead Othello to his downfall because Othello didn't promote him. He is a manipulative and destructive character.
1.4	Roderigo	A jealous suiter of Desdemona. Young, rich, and foolish, Roderigo is convinced that if he gives Iago all his money, Iago will help him win Desdemona's hand.
1.5	Brabantio	Desdemona's father. A rich and important Venetian politician. Accuses Othello of 'stealing' his daughter at the start of the play.
1.6	Emilia	Iago's wife and Desdemona's attendant. A cynical, worldly woman, she is deeply attached to her mistress and distrustful of her husband.
1.7	Cassio	Othello's lieutenant. Cassio is a young and inexperienced soldier, whose high position is much resented by Iago. Iago uses Cassio's youth, good looks, and friendship with Desdemona to play on Othello's insecurities about Desdemona's fidelity.
1.8	Bianca	A prostitute who is deeply infatuated with Cassio.

Techniques		
2.1	soliloquy	Lines spoken by a character that only the audience can hear.
2.2	stage directions	Instructions that guide the actors how to move/speak. These are normally in [square brackets].
2.3	metaphor	Describing/comparing something to something else - "Beware the green-eyed monster".
2.4	aside	A short comment by a character that is not intended to be heard by other characters.
2.5	iambic pentameter	A rhythm used in poetry and Shakespeare which consists of 10 syllables per line, with each line following the pattern of unstressed syllable followed by stressed syllable.
2.6	prose	Ordinary written English.
2.7	blank verse	Unrhymed iambic pentameter that closely resembles spoken English.
2.8	dramatic irony	A device that enables the audience to know more than some of the characters.

	1	2	3	4
Expression and Volume	Reads in a quiet voice as if to get words out. The reading does not sound natural like talking to a friend.	Reads in a quiet voice. The reading sounds natural in part of the text, but the reader does not always sound like they are talking to a friend.	Reads with volume and expression. However, sometimes the reader slips into expressionless reading and does not sound like they are talking to a friend.	Reads with varied volume and expression. The reader sounds like they are talking to a friend with their voice matching the interpretation of the passage.
Phrasing	Reads word-by-word in a monotone voice.	Reads in two or three word phrases, not adhering to punctuation, stress and intonation.	Reads with a mixture of run-ons, mid sentence pauses for breath, and some choppiness. There is reasonable stress and intonation.	Reads with good phrasing; adhering to punctuation, stress and intonation.
Smoothness	Frequently hesitates while reading, sounds out words, and repeats words or phrases. The reader makes multiple attempts to read the same passage.	Reads with extended pauses or hesitations. The reader has many "rough spots."	Reads with occasional breaks in rhythm. The reader has difficulty with specific words and/or sentence structures.	Reads smoothly with some breaks, but self-corrects with difficult words and/ or sentence structures.
Pace	Reads slowly and laboriously.	Reads moderately slowly.	Reads fast and slow throughout reading.	Reads at a conversational pace throughout the reading.

Vocabulary		
3.1	Moor	The 'Moors' were Muslim people who lived in Northern Africa. These people had mixed heritage. The term Moor was often used broadly to refer to any person who was not white.
3.2	cuckold	*Noun* – a man whose wife has had an affair. *Verb* – to have one's partner be unfaithful'.
3.3	duplicitous	Deceitful, pretending to have feelings that actions contradict. *Iago is a duplicitous character as he lies to various characters.*
3.4	Machiavellian	Cunning, scheming and devious. *Iago is a Machiavellian character*
3.5	patriarchal	Male controlled and dominated. *A patriarchal society may involve women appearing inferior to men.*
3.6	archetypal	Very typical of a certain kind of person or thing. *Othello was an archetypal soldier at the start of the play*
3.7	antagonist	A person who opposes someone, usually the protagonist in a book or a play. *Iago is the antagonist in Othello.*

Synonyms are used for a sophisticated and exploratory response: 'self aware,' 'in control,' 'respectful' 'courteous' 'awareness' 'rational' 'peacemaker'

Topic sentence- the paragraph opens with a clear answer to the question. The writer is central to this and an idea is introduced which can be proven throughout the paragraph.

How does Shakespeare present Othello in Act 1 Scene 3?

In the extract, Shakespeare presents Othello as both self-aware and in control. This is exemplified through phrases such as "my noble and approved good masters," which highlight Othello's ability to be respectful, courteous and in full control of himself in the face of Brabantio's confrontational language. Furthermore, his use of the flattering addresses 'noble' and 'good masters' emphasise that Othello is able and willing to align himself with the expectations placed upon him due to his career and skin colour. In the 17th century, Othello would be expected to serve his superiors not just in terms of military command but also due to his race, as a black man he would have been classed as lower status than white men such as the Duke and Brabantio. Therefore, Othello's ability to resign himself to these expectations shows a great awareness and control in his interaction with other characters and with the society in which he lives. Shakespeare repeatedly juxtaposes Othello's peaceful language "blest with the soft phrase of peace" with that of Brabantio which is harsh and commanding; "must be driven to find out practices of cunning hell." This contrast especially portrays Othello as a rational peacemaker. The sound of the words 'blest' and 'soft' appear gentle and reserved to the audience, reminding us of the self-control he appears to display. Presenting Othello in this way is significant as it heightens the drama as he begins to lose control and become impulsive later on in the play.

Analysis builds on and proves the point made in the topic sentence.

Use of 'furthermore' to add depth to analysis.

Analytical verbs are used throughout: exemplifies, highlight, addresses, portrays, reminds, heightens

Links are made to other moments in the play to show an understanding of the theme/character beyond this moment.

Analysis is well explained and evidenced using short quotes and references.

Zooming in on specific words.

Technical language is used to identify and explore the writer's methods.

Contextual points are used to develop the answer and show an understanding of the text that **is relevant to the question.** Contextual notes are not bolted on to the end of the answer but form part of a detailed explanation.

Context		
4.1	Elizabethan or Jacobean England	Shakespeare wrote his plays during the reign of Queen Elizabeth I and after her death, King James I. We call these time periods the Elizabethan(1558-1603) and Jacobean(1603-1625) eras. Othello was written in 1604.
4.2	Prejudice	Racism and sexism were prevalent in Shakespearean England. Africans were seen as strange, exotic and enemies of Christianity who practiced witchcraft and voodoo. They were viewed with suspicion and hostility by the English; almost seen as an 'unknown'.
4.3	Warfare	Othello is set against the backdrop of the wars between Venice and Turkey that raged in the latter part of the sixteenth century. Cyprus, which is the setting for most of the action, was a Venetian outpost attacked by the Turks in 1570 and conquered the following year.

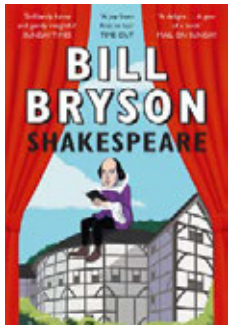
Further research:
https://www.sparknotes.com/nofear/shakespeare/othello/
https://www.rsc.org.uk/shakespeare-learning-zone/othello
https://shakespeare.folger.edu/shakespeares-works/othello/othello-a-modern-perspective/
https://www.bbc.co.uk/history/people/william_shakespeare
https://www.bbc.co.uk/bitesize/guides/zwmr7hv/revision/1

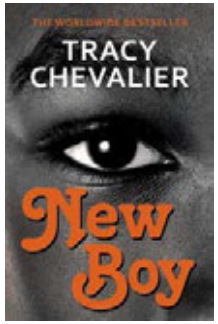
Listen to the TED talk on Rap & Shakespeare

Learn about Shakespearean England

Films to watch:

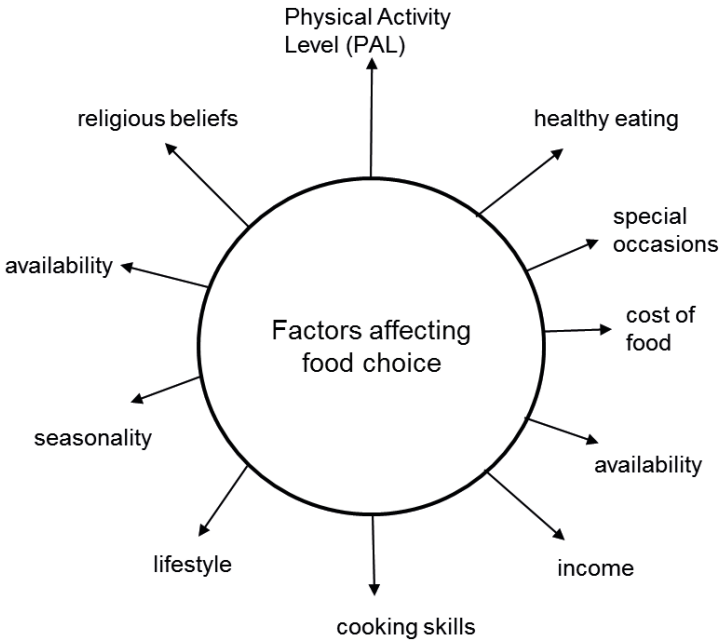
Books to read:





Stretch your vocabulary		
1	amiable	Having or displaying a friendly and pleasant manner.
2	brash	Self-assertive in a rude, noisy, or overbearing way.
3	coiffed	To arrange (hair) by brushing.
4	hybrid	The offspring of two plants or animals of different species or varieties.
5	municipal	Relating to a town or district or its governing body.
6	bounteous	Generously given or giving.
7	encapsulated	Express the essential features of (something).
8	remnant	A part or quantity that is left after the greater part has been used, removed, or destroyed.

1. Factors affecting food choice



2. Religion and food choice

Religion	Pork	Beef	Lamb	Chicken	Fish
Islam	x	Halal only	Halal only	Halal only	✓
Hinduism	x	x	✓	✓	✓
Judaism	x	Kosher only	Kosher only	Kosher only	✓
Sikhism	x	x	✓	✓	✓
Buddhism (strict)	x	x	x	x	x
Seventh-day Adventist Church	x	x	x	x	x
Rastafari Movement	x	x	x	x	x

3. Where food comes from

2.1	food provenance	Where food has been grown, reared or caught.
2.2	intensive farming	Farming that produces a high yield.
2.3	organic farming	Natural farming method that uses natural pesticides and fertilisers. Chemicals are avoided.
2.4	free-range farming	A natural farming methods where animals have freedom to roam.

4. Sustainable diets

3.1	food seasonality	The season when foods are harvested.
3.2	food miles	The distance that foods have travelled from their origin to your plate.
3.3	vegetarian diet	A diet that excludes meat or fish.
3.4	vegan diet	A diet that excludes meat, fish and all animal products.
3.5	pescetarian diet	A diet that excludes meat, but includes fish.

What Is taste?

Taste influences the food that we choose to eat.

Taste is detected by the taste buds on the tongue which recognise five different tastes – sweet, sour, bitter, salty or umami (savoury).

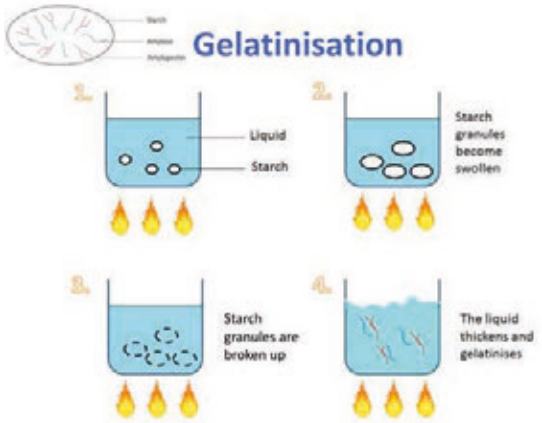
5. Taste testing

		Examples
5.1	sweet	sweets, honey, golden syrup
5.2	salty	crisps, anchovies, bacon
5.3	bitter	coffee, cocoa powder, green tea
5.4	sour	citrus fruit, rhubarb, gooseberries
5.5	umami	meat, gravy, mushrooms

6. Essential components of food packaging		
6.1	Name of product	Must be accurate and clear on packaging.
6.2	Manufacturer's contact details	Used for enquiries or complaints.
6.3	Description of the product	Simple explanation of what the product is.
6.4	Weight	Accurate weight in grams or kilograms.
6.5	Ingredients list	Listed in descending order. Allergens in bold.
6.6	Cooking instructions	How to cook the food.
6.7	Shelf life	Use-by or best-before dates.
6.8	Storage instructions	How to store the food safely.
6.9	Place or origin	Where the food was grown, reared or caught.
6.10	Allergens and intolerances	Labelled clearly in bold in ingredients list.
6.11	Back of pack nutrition label	Energy (kcal/kJ), fat (g), saturates (g), carbohydrates (g), sugars (g), protein (g) and salt (g) must be listed per 100g/ml.

7. Practical skills		
7.1	bridge hold	Form a bridge over the ingredient with your hand and put the knife underneath.
7.2	claw grip	Curl fingers inwards and grip the food with your fingertips, keeping fingers away from the knife.
7.3	knead	To massage and push a dough to stretch and develop the gluten.
7.4	reduction sauce	A sauce that uses boiling and simmering to thicken it.
7.5	preserving	Using a method of cooking to extend the shelf life of a food e.g. making jam, curing and dehydrating.
7.6	making a roux sauce	A white sauce (Béchamel) made with flour, butter and milk. The starch thickens the sauce.

5. Food science		
5.1	dextrinisation	The browning of starch in the presence of dry heat.
5.2	raising agent	Something that makes a mixture rise. They can be biological, chemical or mechanical.
5.3	gelatinisation	When starch molecules swell in the presence of heat. This thickens a liquid.
5.4	pectin	The natural setting agent in fruit.



8. Nutrition requirements of teenagers	
What are their special dietary and energy needs?	Which nutrients should they have more of?
Follow the Eatwell Guide	protein calcium and vitamin D Iron and vitamin C
Teenagers have growth spurts and are very active, so high energy needs.	
Increased appetite means increased portion sizes are needed.	

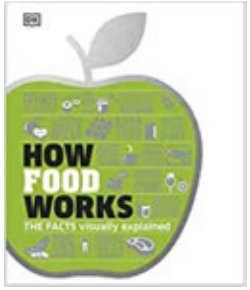
The Eduqas GCSE Food Preparation and Nutrition online textbook covers the syllabus and give a more in-depth overview of the subject. There are lots of videos and activities to view.

ONLINE TEXTBOOK LOGIN DETAILS:

Student Username: SWINCHESTER4
Student Password: STUDENT4

Nutrients is a nutrition software available to use on school computers. You can design nutrition labels and cost out your dishes.

Books to read:



Videos to watch:

GCSE Food Preparation and Nutrition videos

Stretch your vocabulary		
a1	commodity	A type of food group.
a2	saturated fat	Usually from animal sources: can be harmful to health.
a3	Non-starch Polysaccharide (NSP)	A complex sugar found in the cell walls of plants. Helps to aid digestion.
a4	convection	Heat travels through air or water.
a5	Basal Metabolic Rate (BMR)	The rate at which a person uses energy when resting

1. Les emplois	Jobs
Qu'est-ce que tu veux faire plus tard?	What do you want to do later?
Je veux être…	I want to be a …
avocat(e)	lawyer
botaniste	botanist
chanteur / chanteuse	singer
chauffeur de taxi / camion	taxi / lorry driver
comptable	accountant
diplomate	diplomat
directeur / directrice de magasin	store manager
footballeur	footballer
guide touristique	tourist guide
infirmier / infirmière	nurse
ingénieur(e)	engineer
interprète	interpreter
journaliste	journalist
juge	judge
médecin généraliste	doctor
pilote	pilot
professeur	teacher
sociologue	sociologist
vétérinaire	vet
webdesigner	web designer

2. Les opinions	Opinions
C'est mon rêve!	It's my dream!
Ce serait bien.	It would be good.
Pas vraiment.	Not really.
Ce serait ennuyeux.	It would be boring.
Pourquoi pas?	Why not?
Tu rigoles!	You're joking!
Ça ne m'intéresse pas du tout.	That doesn't interest me at all.

4. Le travail	Work
le boulot	job (informal)
l'emploi (m)	job (more formal)
le métier	job / profession
la profession	profession
un stage	training course / work placement
un poste	post
un candidat	candidate
créatif / créative	creative
varié(e)	varied

5. L'importance des langues	The importance of languages
c'est un avantage.	It's an advantage.
C'est essentiel.	It's essential.
C'est un plus.	It's a plus.

3. Le monde du travail	The world of work
acheter	to buy
aimer le contact avec les gens / les autres	to like contact with other people / others
discuter	to discuss
rencontrer	to meet
respecter	to respect
rigoler	to have a laugh (informal)
vendre	to sell
voir	to see
voyager	to travel

6. Quand j'étais plus jeune	When I was younger
j'étais	I was
j'avais	I used to have
j'aimais	I used to like
je faisais	I used to do
je jouais	I used to play
je regardais	I used to watch
je n'aimais pas	I didn't use to like

7. À l'avenir	In the future
Je quitterai le collège.	I will leave school.
Je ferai un apprentissage.	I will do an apprenticeship.
Je ferai le tour du monde.	I will go round the world.
Je voyagerai.	I will travel.
Je travaillerai.	I will work.
Je tomberai amoureux / amoureuse de quelqu'un.	I will fall in love with someone.
j'habiterai…	I will live…
J'aurai une Ferrari.	I will have a Ferrari.
je serai…	I will be…

10. Les mots essentiels	Key words
car	for
comme	as
lorsque	when

9. Être game designer	Being a game designer
communiquer	to communicate
coordonner	to coordinate
créer	to create
fonctionner	to work / function
inventer	to invent
savoir	to know how
travailler en équipe	to work in a team
attentif / attentive	attentive
frustrant(e)	frustrating

8. Des questions	Questions
Qu'est-ce que tu fais dans la vie?	What do you do for a living?
Est-ce que tu as beaucoup d'expérience?	Do you have a lot of experience?
Quelle est ta journée typique?	What is your typical day like?
Quelles sont tes responsabilités?	What are your responsibilities?
Quelles sont les qualitiés requises pour ce métier?	What qualities are required for this profession?
Quelles langues parles-tu?	Which languages do you speak?
Que feras-tu à l'avenir?	What will you do in the future?

10. Les mots essentiels	Key words
par contre	on the other hand
par exemple	for example
puisque	since / as
si	if
surtout	especially

9. Être game designer	Being a game designer
motivant(e)	motivating
poli(e)	polite
rapide	quick
solide	solid
stimulant(e)	stimulating
Côté formation,…	As far as training is concerned, ...
pour ma part	for my part
ma propre boîte	my own company

Knowledge Builder:

Click on the following links to practise grammar

Modal verbs

Imperfect tense

Future tense

1. Les vacances	Holidays
Je vais en vacances…	I go on holiday…
au bord de la mer	to the seaside
à la campagne	to the countryside
à la montagne	to the mountains
J'y vais…	I go there…
avec ma famille	with my family
J'y reste…	I stay there…
une semaine/quinze jours/un mois	one week/a fortnight/a month
Je pars en colo.	I go to a holiday camp.
Je pars en classe de neige.	I go on a winter-sports holiday.
On fait du camping.	We go camping.

3. Mes rêves	My dreams
Je voudrais…/J'aimerais…	I would like to…
descendre l'Amazone en canoë.	go down the Amazon in a canoe.
essayer des sports extrêmes.	try some extreme sports.
faire un safari en Afrique.	go on a safari in Africa.
passer des vacances sur une île déserte.	spend the holidays on a desert island.
traverser le Sahara à dos de chameau.	cross the Sahara by camel.
visiter tous les parcs d'attractions du monde.	visit all the theme parks in the world.
voir des gorilles en liberté.	see gorillas in the wild.

2. Les activités de vacances	Holiday activities
Je fais…	I do/go…
du canoë-kayak	canoeing
du VTT	mountain biking
du ski nautique	water skiing
du snowboard	snowboarding
de la plongée sous-marine	scuba diving
de la voile	sailing
de la planche à voile	windsurfing

2. Les activités de vacances	Holiday activities
Je fais...	I do/go....
de l'équitation	horse riding
de l'escalade	climbing
des randonnées dans la forêt	hiking in the forest
Je vais à la pêche.	I go fishing.
Je prends des cours de ski.	I have skiing lessons.
J'ai fait un stage (de voile).	I did a (sailing) course.
Il n'y a pas grand chose à faire.	There's not much to do.

4. Les verbes pronominaux	Reflexive verbs
Je me baigne.	I swim.
Je me coiffe.	I do my hair.
Je me couche.	I go to bed.
Je me douche.	I have a shower.
Je me fais bronzer.	I sunbathe.
Je me fais piquer.	I get stung.
Je m'amuse.	I have fun.
Je m'ennuie.	I get bored.

5. Les mots essentiels	High-frequency words
avec qui?	with whom?
combien de?	how much/how many?
que?	what?

Les mots essentiels	High-frequency words
qu'est-ce que?	what?
pourquoi?	why?
y	there

Les mots **essentiels**	**High-frequency words**
quel/quelle/quels/quelles	which/what?
toujours	always
prochain(e)	next

6. Les affaires de vacances	Holiday items
un adaptateur	an adaptator
un chargeur (pour mon mp3)	a charger (for my mp3)
un chapeau de paille	a straw hat
un tuba	a snorkel
un sac à dos	a rucksack
une bombe anti-insectes	an insect-repellent spray
une lampe de poche	a torch
de la crème solaire	sun cream
du gel coiffant	hair gel
des lunettes de plongée (fpl)	swimming goggles
des palmes (fpl)	flippers
des tongs (fpl)	flip-flops
plein de bouquins (mpl)	loads of books

7. Qu'est-ce que tu as fait?	What did you do?
J'ai…/On a…	I…/We…
fait du tir à l'arc.	did archery.
fait de la planche à voile.	went windsurfing.
fait du trampoline.	did trampolining.
fait de la baignade.	went swimming.
fait une balade en barque.	went on a boat ride.
joué aux boules.	played boules.
joué sur des structures gonflables.	played on a bouncy castle.
loué un pédalo.	hired a pedalo.

8. T'as passé de bonnes vacances?	Did you have a nice holiday?
Pas vraiment.	Not really.
C'était un désastre.	It was a disaster.
Je suis resté(e) trop longtemps au soleil.	I stayed in the sun too long.
J'ai pris un coup de soleil.	I got sunburnt.
Il a plu tout le temps.	It rained all the time.
L'eau est entrée dans la tente.	Water came into the tent.
Je suis tombé(e) à l'eau.	I fell in the water.
J'ai été malade.	I was ill.
On a tous été malades.	We were all ill.
C'est dommage.	What a shame.
C'est pas drôle ça.	That's not funny.

Knowledge Builder:

Click on the following links to practise grammar

The conditional tense

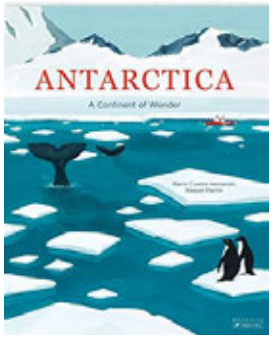
Reflexive verbs

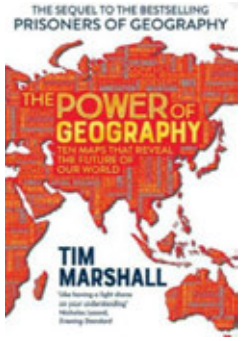
Asking questions

1. Climate issues		
1.1	global commons	Areas – and their potential economic resources – that lie beyond national jurisdiction: the atmosphere, the high seas, Antarctica, and outer space.
1.2	atmosphere	The layer of gases surrounding the Earth's surface.
1.3	climate	The average weather conditions experienced in an area measured over a long period of time.
1.4	climate graph	A graph that shows the mean average temperature and rainfall for each month of the year.
1.5	climate change	Change to the long term weather patterns around the world.
1.6	global warming	Increases in the world's temperature caused by human activities that increase the amount of greenhouse gases in the atmosphere.
1.8	the greenhouse effect	The trapping of heat within the Earth's atmosphere by an insulating layer of gases. (Greenhouse gases e.g., CO2.)
1.9	climate conferences	Climate Change Conferences advance global climate talks and mobilise action. They look at the impacts of climate change as well as innovation and solutions.
1.10	adaptation	Changing our behaviour to live with the consequences of increased temperatures and reduced or increased rainfall.
1.11	mitigation	Taking action to try to stop the human causes of climate change.
1.12	pollution	The introduction of harmful materials into the environment. These harmful materials are called pollutants. They can be natural (e.g. ash) or man made.
1.13	natural resources	Materials that occur naturally and can be extracted or exploited to make money.

2. Antarctic and plastic issues		
2.1	water stress	Occurs when the demand for useable water exceeds the available amount of water for a period of time.
2.2	waste hierarchy	Ranks all of the different waste management options into an order of what is best for the environment.
2.3	food miles	The distance food has travelled to get to your plate.
2.4	Antarctica	The large, frozen southern continent surrounded by the Southern Ocean.
2.5	low income country (LIC)	A poor country with GNI per capita below $1,035.
2.6	newly emerging economy (NEE)	A country that has begun to experience high rates of economic development (GNI between $1,036 - $12,776).
2.7	high income country (HIC)	A country with a GNI per capita above $12,775.
2.8	poverty	Lack of access to basic needs, such as food, shelter, water and education. Extreme poverty is a very high level of poverty.
2.9	sustainability	Meeting our needs today whilst allowing the needs of future generations to be met.
2.10	microplastics	Plastic particles that are too small to be seen with the human eye.
2.11	recycling	The action or process of converting waste into reusable material.
2.12	design solutions	The approach to creating products and services that have considered the environmental, social, and economic impacts from the initial phase through to the end of life.
2.13	scarcity	A lack of a particular resource in any one place at any one time

Books to read:





The Plastic Wave

Things watch:

Microplastics are everywhere

Water stress

Waste hierarchies

The British Antarctic Survey

Plastic pollution

Stretch your vocabulary		
a.1	SWOT Analysis	The identification of the strengths and weaknesses, (determined by the internal environment) and opportunities and threats (determined by external factors such as: social, technological, economical, ecological and political).
a.2	supranational	Having power or influence that transcends national boundaries or governments.
a.3	Troposphere	the lowest region of the atmosphere, extending from the earth's surface to a height of about 6–10 km


GREENLAND
CANADA
UNITED STATES
MEXICO
CUBA
RUSSIA
KAZAKHSTAN
MONGOLIA
CHINA
JAPAN
IRAN
IRAQ
TURKIYE
SAUDI ARABIA
INDIA
PAKISTAN
PHILIPPINES
INDONESIA
AUSTRALIA
NEW ZEALAND
ALGERIA
LIBYA
EGYPT
MALI
NIGER
CHAD
SUDAN
NIGERIA
ETHIOPIA
SOMALIA
KENYA
DR CONGO
TANZANIA
ANGOLA
ZAMBIA
NAMIBIA
SOUTH AFRICA
MADAGASCAR
BRAZIL
PERU
BOLIVIA
CHILE
ARGENTINA
URUGUAY
COLOMBIA
VENEZUELA
ECUADOR
SPAIN
FRANCE
GERMANY
POLAND
UKRAINE
BELARUS
FINLAND
SWEDEN
ICELAND
Continents
South America
Africa
North America
Europe
Asia
Oceania

1.0 Was trägst du gern?	What do you like to wear?
das Kleidungsstück	item of clothing
Welches Kleidungsstück trägst du nie/immer?	What item of clothing do you always/never wear?
Ich trage gern...	I like wearing...
Ich trage immer/nie...	I always/never wear...
das Cap	cap
das Hemd	shirt
die Hose	trousers
die Jeans	jeans
die Jacke	jacket
der Kapuzenpullover	hoodie
das Kleid	dress
der Mantel	coat
der Pullover	jumper/sweatshirt
der Rock	skirt
die Stiefel (pl)	boots
das T-Shirt	T-shirt
die Turnschuhe (pl)	trainers

2.0 Wie ist dein Stil?	What's your style?
Ich trage lieber...	I prefer wearing...
Ich trage am liebsten...	I like wearing... best.
die Mode	fashion
das Accessoire	accessory
die Armbanduhr	watch
der Hut	hat
die Kette	chain/necklace
die Krawatte	tie
die Ohrringe (pl)	earrings
der Ring	ring
die Sonnenbrille	sunglasses
die Tasche	bag

Learn how to write and talk about what you wear to school here:

3.0 Adjektive	Adjectives
bunt	colourful
gestreift	striped
golden	gold
groß	large
kariert	checked
kurz	short
lang	long
alternativ	alternative
cool	cool/trendy
furchtbar	awful
klassisch	classic
lässig	relaxed/casual
sportlich	sporty

4.0 tragen	to wear
ich trage	I wear
du trägst	you wear
er/sie trägt	he/she wears
wir tragen	we wear
ihr tragt	you all wear
sie tragen	they wear

5.0 Adjective endings	
Masculine	Ich trage einen blauen Pulli. I wear a blue jumper.
Feminine	Ich trage eine rote Jacke. I wear a red jacket.
Neuter	Ich suche ein gelbes T-Shirt. I am looking for a yellow t-shirt.
Plural	Ich mag schwarze Schuhe. I like black shoes.

6.0 Fragen und Antworten	Questions and Answers
Wie ist dein Modestil?	What is your style?
Mein Modestil ist...	My style is...
Wie findest du meinen Stil?	How do you find my style?
Ich finde deinen Stil...	I find your style...
Wie sehe ich aus?	How do I look?
Die siehst … aus.	You look...

Watch the news here:

7.0 Wo kaufst du lieber diene Klamotten?	Where would you prefer to buy your clothes?
Wo gehst du am liebsten shoppen?	Where do you most like to go shopping?
Wo kaufst du lieber deine Klamotten?	Where do you prefer to buy your clothes?
die Klamotten	Clothes (colloquial)
die Kleidung	clothing
Ich gehe am liebsten ... shoppen	Most of all I like shopping...
Ich gehe nicht gern einkaufen	I don't like shopping
Ich kaufe lieber meine Klamotten...	I prefer to buy my clothes...
Meine Eltern kaufen alle meine Klamotten.	My parents buy all my clothes.
auf dem Flohmarkt	at e flea market
im Einkaufszentrum	in a shopping centre
im Internet	online
in Boutiquen	In boutiques
in Designerläden	In designer shops
in großen Städten	In big cities
in kleinen Läden	In small shops
in Secondhandläden	In second hand shops

8.0 Shoppen	Shopping
Die Jacke wird teuer sein.	The jacket will be expensive.
Ich möchte zuerst (+ acc)… finden.	First I would like to find...
Ich möchte (+acc) … aussuchen.	I would like to look for …
Ich suche einen/eine/ein...	I'm looking for...
Ich werde einen/eine/ein... suchen.	I will look for a...
Ich werde ganz viel Geld für... ausgeben.	I will spend a lot of money on...
Das könnte interessant sein.	That could be interesting.
Das muss (alternativ) wirken.	It has to look alternative.

Here is a video that explains the cases in German

1.0 Das Kino	The cinema
Was für Fernsehsendungen siehst du gern?	What kind of TV programmes do you like?
die Dokumentarsendung	documentaries
der Krimi	Crime drama
die Nachrichten	The news
die Reality-TV-Serie	Reality TV show
die Sportsendung	Sports show
der Zeichentrickfilm	cartoon
der Abenteuerfilm	Adventure film
der **Bollywoodfilm**	Bollywood film
der fremdsprachige Film	Foreign-language film
der Horrorfilm	Horror film
die romantische Komödie	Romantic comedy
der Science-Fiction-Film	Sci-fi film

1.1 sehen	to watch
ich sehe	I watch
du siehst	you watch
er/sie sieht	he/she watches
wir sehen	we watch
ihr seht	you all watch
sie sehen	they watch
Sie sehen	you (Mr/Mrs) watch

1.1 Das Kino	The cinema
Für mich sind (Horrorfilme) zu...	For me, (horror films) are too
blöd	stupid
faszinierend	fascinating
furchtbar	awful
gruselig	scary
interessant	interesting
kindisch	childish
kompliziert	complicated
langweilig	boring
lustig	funny
nervig	annoying
romantisch	romantic
schrecklich	terrible
spannend	exciting
unrealistisch	unrealistic
unterhaltsam	entertaining

Here is a unit of work all about going to the cinema.

2.0 Musik liegt in der Luft	There's music in the air
Was für Musik hörst du (nicht) gern?	What music do you like to/not like to listen to?
Wer ist dein Lieblingssänger/deine Lieblingssä**ngerin?**	Who is your favourite singer?
Wann/wie/wo hörst du Musik?	When/how/where do you listen to music?
Was hast du als letztes gehört?	What was the last thing you listened to?
Wann bist du zuletzt auf ein Konzert gegangen?	When did you last go to a concert?
die Dance-Musik	Dance music
der Deutschrap	German rap
der Hip-Hop	Hip hop
die klassische Musik	Classical music
der Pop	pop
die Rockmusik	Rock music
der Schlager	German pop
die Volksmusik	terrible
spannend	exciting
unrealistisch	unrealistic
unterhaltsam	entertaining

Here is an example of “Schlager” music!

2.1 Musik liegt in der Luft	There's music in the air
(Hip-hop) hat einen tollen Rhythmus	(Hip-hop) has a great rhythm
beliebt	popular
entspannend	relaxing
laut	loud
lebendig	lively, upbeat
die Melodie	melody, tune
melodisch	tuneful
rhythmisch	rhythmic
die Texte (pl)	the lyrics

5.0 Gefällt dir X?	Do you like X?
X gefällt mir	I like X
Ich mag X	I like X
Ich liebe X	I love X
Ich hasse X	I hate X
Ich kann X nicht leiden	I can't stand X
Ich finde X super	I think X is great
Meine Lieblingsgruppe	My favourite group
Mein(e) Lieblingssänger(in)	My favourite singer (m/f)

logo!

Watch the news here

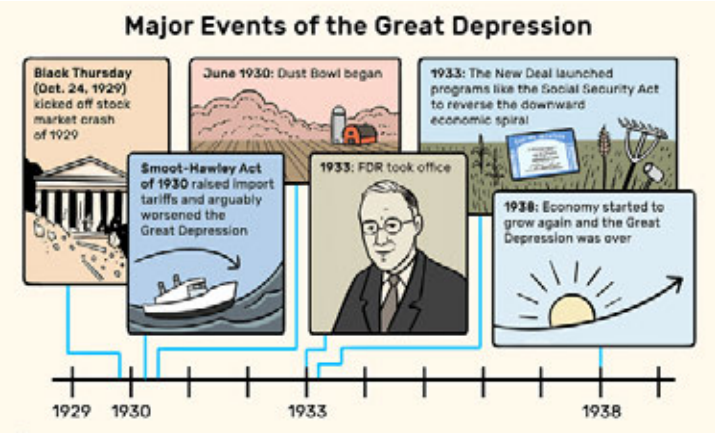
3. Sicher im Internet	Safe on the internet
Wie oft benutzt du das Internet?	How often do you use the internet
Ich benutze das Internet (zwei Stunden) pro Tag.	I use the internet for (two hours) a day.
Ich benutze das Internet nie.	I never use the internet.
Was machst du im Internet?	What do you do on the internet?
Computerspiele spielen	To play computer games
Klamotten kaufen	To buy clothes
mit Freunden/der Familie chatten	To chat with friends/family
Musik herunterladen	To download music
Soziale Medien benutzen	To use social media
der Vorteil	advantage
der Nachteil	disadvantage

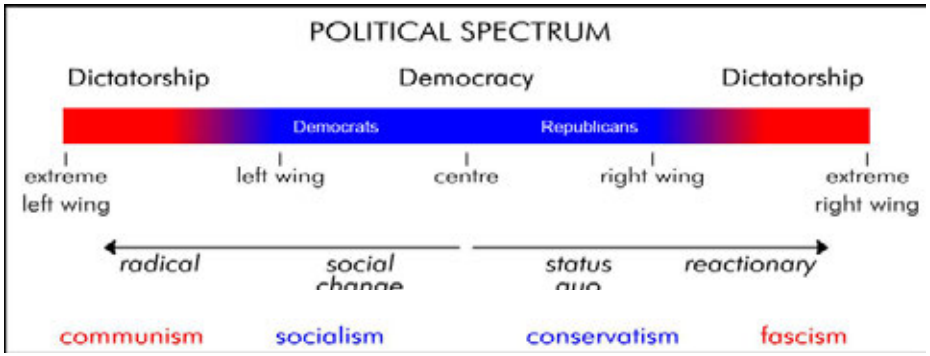
Practise giving opinions and using good word order here:

4. Adverbs **of frequency**	
immer	always
jeden Tag	every day
jeden Abend	every evening
oft	often
manchmal	sometimes
ab und zu	now and then
selten	rarely
nie	never

Lots of interesting articles to read and videos to watch about the internet and young people here:

6.0 Wie oft machst du das?	How often do you do that?
Ich sehe jeden Tag fern	I watch TV every day
Ich gehe selten ins Kino	I rarely go to the cinema
Ich höre oft Musik	I often listen to music
Ich benutze immer mein Handy	I always use my mobile phone
Ich kaufe manchmal Kleidung im Internet	I sometimes buy clothes online





1. The USA in the 1920s		
1.1	The Ku Klux Klan	A racist, white supremacist organisation.
1.2	white supremacy	The idea that white people are superior to black people.
1.3	Wall Street Crash	When the U.S. stock market lost millions of dollars.
1.4	H. Hoover	The President of America between 1929 and 1933.
1.5	political ideology	A set of ideas and beliefs of a large group that explain how they think society should be structured.
1.6	Great Depression	A severe worldwide economic depression between 1929 and 1939 that began after a major fall in stock prices in the United States.
1.7	F.D. Roosevelt	The President of America between 1933 and 1945.
1.8	The New Deal	A series of projects and financial reforms introduced by President Franklin D. Roosevelt in the United States between 1933 and 1939.

2. The political spectrum		
2.1	communism	A political ideology that believes society should be organised so that all private property is owned by the community and that each person contributes and receives according to their ability and needs.
2.2	socialism	A political ideology that wants wealth to be spread more evenly and that the state or government should control the allocation and production of resources to ensure this.
2.3	nationalism	A political ideology that shows loyalty and devotion to a nation and believes that the needs of that nation are more important than those of an individual.
2.4	fascism	A political ideology that wants a strong government with one ruler to lead the country. It has strong nationalist beliefs that the nation is more important that the individual and often places very strict rules upon the people.

3. The rise of dictators in the 1920s and 1930s		
3.1	Benito Mussolini	The leader of Italy between 1922-43. (pictured top right)
3.2	Il Duce	An Italian title, meaning the leader given to Mussolini.
3.3	BUF	The British Union of Fascists led by Oswald Mosley.
3.4	Adolf Hitler	The Leader of Germany between 1933-45. (pictured top right)
3.5	Führer	A title used by Adolf Hitler, meaning leader in German.

1. Core knowledge: Substantive (what happened in the past)		
1.1	Nationalism	An ideology that means the believer would be more loyal to their country than to anyone else.
1.2	revolution	A radical change to how things are done. Usually, the whole system of government is replaced.
1.3	Communism	An ideology that explains history as a struggle between social classes (e.g., rich vs poor).
1.4	Fascism	An ideology that explains history as a struggle between ethnic groups (racial categories).
1.5	democracy	When the views and choices of the people are respected, including voting for their leader.
1.6	totalitarian	When a government tries to control every part of the people's lives, and thoughts.
1.7	anti-Semitism	Hatred and racist thinking towards Jewish people, because of their ethnicity or religion.
1.8	persecution	When people are treated badly. They are bullied, humiliated, attacked, and even killed.
1.9	Holocaust	The murder of millions of Jewish people by fascists during World War Two.

2. Core knowledge: Disciplinary (how historians think)		
2.1	change	When something starts happening, stops happening, happens more, or happens differently.
2.2	continuity	When something carries on happening. People allow it or encourage it to carry on happening.
2.3	long view	A way of historical thinking that focuses on patterns you can identify across a long period.
2.4	academic History	Books, articles, and lectures aimed at other scholars. Historians argue their points.
2.5	popular History	Museums, statues, national days, or signs, that mark a historical place or event.
2.6	public History	Aimed at the widest audience. Focus on the most dramatic features, and the story.
2.7	significance	When something in the past later becomes seen as important or unique.
2.8	magnitude	Size or scale. The Holocaust is seen as significant because of its magnitude.
2.9	agency	When someone or something can make a change happen, they have agency.

3. This Term's Enquiry Questions	
1855 CE – 1941 CE	How did competing ideas of justice affect the big story of Russian history, 1855 to 1941?
1939 CE – 1945 CE	How have academics criticised US public histories of WW2?
1933 CE – Present day	Why is the Holocaust seen as significant in History?

1830 1850 1870 1890 1910 1930 1950 1970 1990 2010 2030

How have academics criticised US public histories of WW2?

Why is the Holocaust seen as significant in History?

BBC Bitesize KS3 History courses to extend your learning
World War Two: An Overview
The Holocaust, 1939-1945
Lenin and the Russian Revolution
Russia 1881-1921

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BBC iPlayer programmes to extend your learning
How the Holocaust began
The US and the Holocaust

BBC Teach videos to extend your learning
World War Two stories
Children of the Holocaust
The Last Survivors
Communism
Andrew Marr's History of the World

La musica	Music
ascolto la musica	I listen to music
non ascolto mai	I never listen
la musica classica	classical music
la musica pop	pop music
una canzone	a song
un cantante	a singer
un gruppo	a group
il mio gruppo preferito	my favourite group

Le feste	Celebrations
un matrimonio	a wedding
la moglie	the wife
il marito	the husband
una festa di compleanno	a birthday party
una festa di laurea	a degree party
festeggiare	to celebrate
un invito	an invitation
un ospite	a guest
il mio compleanno	my birthday
ho fatto una festa	I had a party
sabato prossimo	next Saturday
sabato scorso	last Saturday

Per descrivere le cose	To describe things
secondo me	according to me
é	it is
é stato	it was
sarà	it will be
magnifico/a	magnificent
commovente	moving
caotico/a	chaotic
una noia mortale	total boredom

Per descrivere una foto	To describe a photo
in questa foto c'è una persona	in this photo there is a person
in questa foto ci sono due persome	in this photo there are two people
sembrano	they seem
sembra	he/she seems
portano	they are wearing
parlano	they are talking
giocano	they are playing
sono turisti	they are tourists
sono in centro	they are in the centre
a destra c'è	on the right there is
a sinistra c'è	on the left there is
in fondo c'è	at the back there is
in primo piano c'è	at the front there is

Sport e cinema	Sport & cinema
una partita	a football match
giocare	to play
un giocatore	a football player
un torneo	a tournament
fare lo sport	to do sport
andare in palestra	to go to the gym
mi alleno	I train
è la mia passione	it's my passion
una volta alla settimana	once a week
due volte al mese	twice a month
il mio film preferito	my favourite film
il mio attore preferito	my favourite actor
la mia attrice preferita	my favourite actress
i film che mi fanno paura	films that scare me
i film che mi fanno ridere	films that make me laugh
mi piacciono i film	I like films

Gioco di ruolo	Role-play
vorrei	I would like
posso avere?	can I have?
quanto costa?	how much does it cost?
quanto costano?	how much do they cost?
a che ora apre/chiude	at what time does it open/close?
dov'è	where is ...?
si può pagare in contanti?	can we pay in cash?
la carta di credito	credit card
mi dica?	can I help you?
che cosa?	what?
chi?	who?
quando?	why?
con chi?	with whom?

Il condizionale	The conditional
mangerei	I would eat
mangeresti	You would eat
mangerebbe	S/he would eat
mangeremmo	We would eat
mangereste	You lot would eat
mangerebbero	They would eat

Al ristorante	To describe things
vorrei un tavolo per quattro	a table for 4 please
alle otto e mezza	at eight thirty
un tavolo libero	a free table
un posto	a place
siamo completi a quell'ora	we are full at that time
in giardino	in the garden
ci sono?	are there...?
piatti tipici della zona	local specialities
piatti vegetariani	vegetarian dishes
un menu fisso	a fixed price menu
uno sconto per studenti	a discount for students
il pesce	fish
la carne	meat
il dolce	pudding
l'aperitivo	aperitif
l'antipasto	starter
il primo piatto	first course
il secondo piatto	second course
il conto	the bill
uno sbaglio	a mistake

I negozi	Shops
un negozio di scarpe	a shoe shop
un negozio di abbigliamento	a clothes shop
un negozio di regali	a gift shop
una libreria	a book shop
una maccelleria	a butcher's shop
il fruttivendolo	a greengrocer's
una gelateria	an ice cream parlour
un centro commerciale	a shopping centre
un bar	a bar/cafe
un supermercato	a supermarket
un ipermercato	a hypermarket
l'ufficio postale	the post office
l'ufficio turistico	the tourist office
un grande magazzino	a department store
un cliente	a customer
un'edicola	a kiosk
un negozio di alimentari	A grocer's shop
costoso	expensive
a buon mercato	cheap

QUIZLET sets:
Go onto Student Resources Italian yr 9 Quizlet Spring 1 to find a quizlet with some more challenging vocab.

Connetivi	Connectives
a parte questo	apart from this
altrimenti	otherwise
inoltre	also
sopratutto	above all
forse	perhaps
perciò	so/therefore

QUIZLET sets:
Go onto Student Resources Italian yr 9 Quizlet Spring 2 to find a quizlet with some more challenging vocab.

Have a revision lesson on the conditional tense – see how much you understand!

Listening: birthdays

Listen to our Italian podcasts of student resources for these units

Have a revision lesson on al ristorante

This is all about Italian festivals – very useful for extra listening.

Vocabulary on clothes: challenge pack

Listening skills: at the market

1. Key terms		
1.1	Imperfect tense	A past tense verb that expresses 'was' or 'were' ...ing...
1.2	Irregular verb	A verb whose form does not follow the same construction as a regular verb
1.3	Direct question	A question that is being asked, usually within speech
1.4	Genitive case	A noun case that expresses 'of'...
1.5	Dative case	A noun case that expresses 'to' or 'for'...

2. Imperfect tense of sum and possum					
sum			possum		
2.1	I was	eram	2.7	I was able	poteram
2.2	You (sg) were	eras	2.8	You (sg) were able	poteras
2.3	He/she/it was	erat	2.9	He/she/it was able	poterat
2.4	We were	eramus	2.10	We were able	poteramus
2.5	You (pl) were	eratis	2.11	You (pl) were able	poteratis
2.6	They were	erant	2.12	They were able	poterant

3. Genitive and Dative case				
		1st declension	2nd declension	3rd declension
3.1	Genitive singular	ae	i	is
3.2	Dative singular	ae	o	i
3.3	Genitive plural	arum	orum	um/ium
3.4	Dative plural	is	is	ibus

4. Irregular verbs fero, volo and nolo				
		fero	volo	nolo
4.1	imperfect	ferebam	volebam	nolebam
4.2	perfect	tuli	volui	nolui

5. Questioning words		
5.1	Ubi...?	Where...?
5.2	Quando...?	When...?
5.3	Cur...?	Why...?
5.4	-ne	Invites the answer yes or no
5.5	nonne	Invites the answer yes
5.6	num	Invites the answer no

6. Vocabulary	
6.1	All words found on the Chapter 4 vocabulary list from de Romanis. See separate vocabulary booklet.

7. Verbs that take the dative		
7.1	persuadeo, persuadere, persuasi **+ dative**	persuade
7.2	credo, credere, credidi **+ dative**	believe, trust

1. Key terms		
1.1	participle	Is a verb form that behaves like an adjective
1.2	Present participle	A present tense verb that behaves like an adjective and is translated as an '...ing' word. E.g. loving, walking or ruling

2. present tense of sum, possum and eo				
		sum – I am	possum – I am able	eo – I go
2.1	I	sum	possum	eo
2.2	You (S)	es	potes	is
2.3	She/he/it	est	potest	it
2.4	We	sumus	possumus	imus
2.5	You (P)	estis	potestis	itis
2.6	They	sunt	possunt	eunt

3. fero, volo, nolo – present tense				
		fero – I carry	volo – I want	nolo – I do not want
3.1	I	fero	volo	nolo
3.2	You (s)	fers	vis	non vis
3.3	She/he/it	fert	vult	non vult
3.4	We	ferimus	volumus	nolumus
3.5	You (p)	fertis	vultis	non vultis
3.6	They	ferunt	volunt	nolunt

4. adsum and absum					
		adsum – I am present	absum – I am absent	aderam – I was present	aberam – I was absent
4.1	I	adsum	absum	aderam	aberam
4.2	You (s)	ades	abes	aderas	aberas
4.3	We	adest	abest	aderat	aberat
4.4	She/he/it	adsumus	absumus	aderamus	aberamus
4.5	You (p)	adestis	abestis	aderatis	aberatis
4.6	They	adsunt	absunt	aderant	aberant

5. Present partciciples = ...ing			
5.1	Nominative singular	**-ns**	currens - running
5.2	Accusative singular	**-ntem**	currentem - running
5.3	Nominative and Accusative plural	**-ntes**	currentes - running

6. Vocabulary	
6.1	All words found on the Chapter 5 vocabulary list from de Romanis. See separate vocabulary booklet.

Chariot races

- chariot races were part of some of Rome's earliest religious celebrations
  - the races honoured the gods who drove chariots: Sol (the sun) and Luna (the moon)
  - a chariot was a two-wheeled vehicle pulled by a team of two, four or six horses
  - four to twelve teams competed in each race; the races could be very dangerous
  - chariot races were incredibly popular and attracted huge crowds
  - the Circus Maximus was the largest race-track in Rome; it had room for 150,000 spectators
- over time, chariot races lost much of their religious purpose; wealthy Romans could sponsor a race to entertain Rome's citizens

Recommendations

To read

SPQR, A history of ancient Rome by Mary Beard.

To watch

Gladiator featuring Russell Crowe.

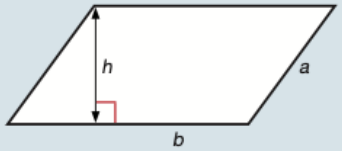
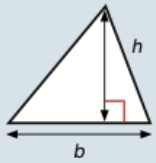
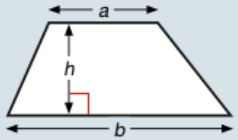
Gladiatorial shows

- originally, gladiatorial games were part of funeral ceremonies, but the Roman people enjoyed them so much that wealthy citizens began to put on shows to win popular support
- there were many different types of gladiator, each with its own weapons and armour
- the fights had strict rules and referees made sure these rules were followed
- some people decided to be gladiators to win glory, but most gladiators were prisoners of war, slaves or criminals
- the life of a gladiator was often harsh

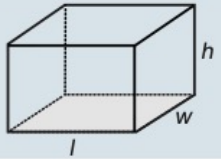
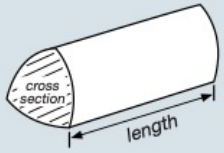
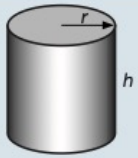
Curses

- sometimes the Romans asked the gods to punish others
- they could do this by using a curse tablet
- curse tablets were made of thin sheets of lead, clay or wood
- curses, asking a god to punish someone, would be written on them
- the curse tablets were often rolled up, thrown into water, buried in the ground or left somewhere significant

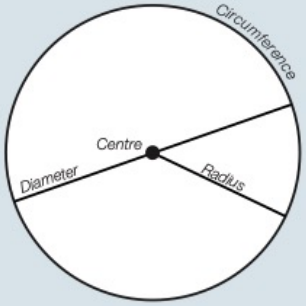
Areas

Rectangle = $l \times w$	
Parallelogram = $b \times h$	
Triangle = $\frac{1}{2} b \times h$	
Trapezium = $\frac{1}{2}(a + b)h$	

Volumes

Cuboid = $l \times w \times h$	
Prism = area of cross section × length	
Cylinder = $\pi r^2 h$	

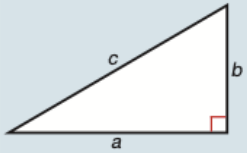
Circles

Circumference = $\pi \times$ diameter, $C = \pi d$	
Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$	
Area of a circle = π x radius squared $A = \pi r^2$	

Pythagoras

Pythagoras' Theorem

For a right-angled triangle, $a^2 + b^2 = c^2$



Compound measures

Speed

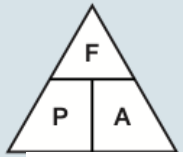
$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Density

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

Pressure

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$



This term you will be revising all Key Stage 3 (year 7, 8 and 9) topics as you prepare for the GCSE course.
It is helpful to be able to remember the key formulae listed here.
Use the QR code to access revision resources:

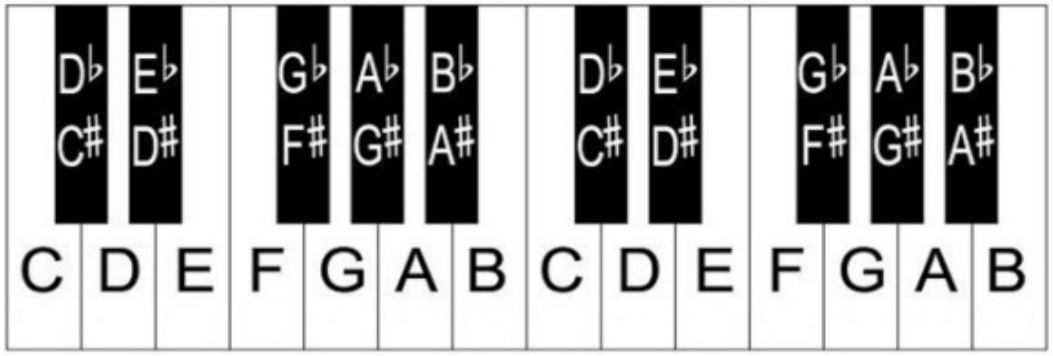
Topic	Skills	Check
Year 7		
Whole Numbers and Decimals	Calculations with integers	
	Multiples and factors (inc prime factors, LCM and HCF)	
	Cube and square numbers, Cube and square roots	
Measures, Perimeter and Area	Unit conversions (metric and imperial)	
	Solving perimeter problems	
	Finding the area of different shapes	
Expressions and Formulae	Simplifying expressions and expanding brackets	
	Substituting into expressions and formulae	
	Creating and using formulae	
Fractions, Decimals & Percent	Ordering and comparing fractions, decimals and %	
	Calculations with fractions	
	Percentage of amounts	
Angles and 2D Shapes	Finding angles in triangles, quadrilaterals and polygons	
	Finding and working with angles in parallel lines	
	Properties of quadrilaterals and polygons	
Graphs	Draw the straight line graph of a function	
	Recognize the equations of straight lines	
	Real life graphs (including time series graphs)	
Transformations and Symmetry	Reflect, rotate and translate 2D shapes	
	Combinations of transformations	
	Enlarge a 2D shape	
Year 8		
Mental Calculations	Round numbers	
	Mental addition/subtraction/multiplication/division	
	Breaking down calculations into smaller, simpler steps	

Topic	Skills	Check
Statistics	Constructing bar, frequency, pie charts	
	Calculating averages	
	Stem and leaf diagrams, scatter graphs and correlation	
Equations	Solving one step and multi step equations	
	Solving equations with brackets	
	Solving real life equations	
Written and Calculator Methods	Written addition/subtration/multiplication/division	
	Order of Operations (BIDMAS)	
	Solving problems using the four operations (+,-,×,÷)	
Constructions	Constructing bisectors and standard shapes	
	Using scale drawings and bearings	
	Describing and constructing a locus	
Sequences	Term to term and position to term of a sequence	
	Real life sequences and special sequences	
	Recognising and describing geometric sequences	
Probability	Using diagrams and tables to calculate probability	
	Comparing experimental and theoretical probability	
	Sets, set notation and Venn diagrams	
Year 9		
3D Shapes	Names & properties (Faces, Edges, Vertices) of 3D Shapes	
	Nets, Plans and elevations, 3D drawings	
	Surface area and volume	
Ratio and Proportion	Solve problems using direct proportion	
	Calculations with ratio (simplifying; dividing into a ratio)	
	Percentage increase and decrease	

Year 9 focuses on ***stylistic conventions.***

1. **Elements of Music**		
1.1	Pitch	The position of a single sound in the complete range of sound. High / low
1.2	Tempo	The pace of the music. Fast / Slow
1.3	Texture	Describes how layers of sound within a piece of music interact. Thick / thin
1.4	Timbre	The quality of tone distinctive of a particular voice or instrument. *Example: bright, mellow*
1.5	Dynamics	The variation in loudness between notes or phrases. *Loud / Soft (piano, forte, crescendo, diminuendo*)
1.6	Duration	The length of a note or series of notes. *Long / Short*
1.7	Silence	No noise.
1.8	Melody	Melody is a succession of pitches in rhythm.
1.9	Rhythm	A rhythm is a pattern of sounds of different lengths.

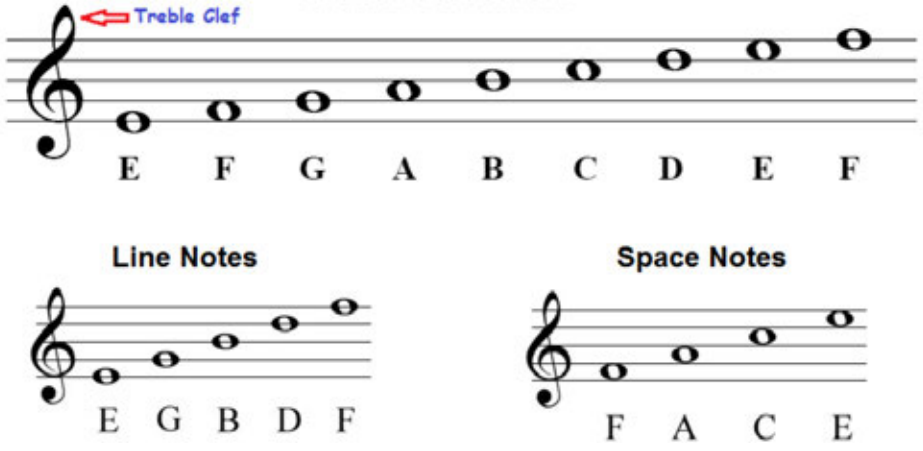
2. Notes on the keyboard



3. Note lengths

ITEM	NOTE	REST	VALUE (number of beats)
Whole note/rest			4
Half note/rest			2
Quarter note/rest			1
Eighth note/rest			1/2
Sixteenth note/rest			1/4

4. Notes on the Stave



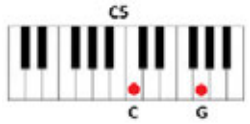
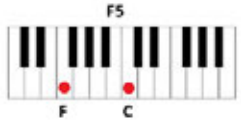
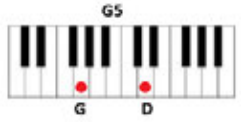
Year 9 focuses on ***stylistic conventions.***

5. Rock **subgenres**		
5.1	Blues rock	Early form of rock developed from blues and rock 'n' roll. It follows a blues structure such as the '12-bar blues', but with a heavier feel, more distorted guitars, etc.
5.2	Hard rock	A heavier form of rock developed in the mid to late 1960s with a more driving drum beat, heavier guitar sounds and not necessarily based on the blues.
5.3	Soft rock	A lighter, often more acoustic form of rock, with a sound closer to folk.
5.4	Psychedelic rock	Late 1960s rock subgenre with a very experimental sound, often using unusual instruments and effects. This was partly a product of late '60s hallucinogenic drug culture.
5.5	Progressive rock	Subgenre that took some of the unusual sounds of psychedelic rock and applied more complex compositional techniques more usually found in jazz and classical music.
5.6	Punk	A stripped down, uncomplicated form of rock, with a loud, raw sound. Lyrics are often motivated by political and social protest.

6. Rock – musical features & stylistic conventions	
6.1	Simple **4/4 drum beats with emphasis on beats 2 and 4.**
6.2	Distorted guitar tones.
6.3	Powerful pedal note bass lines.
6.4	Often **played with a fast tempo.**
6.5	Power **chord riffs usually make up the main rhythm guitar parts.**
6.6	More **aggressive vocal and instrumental techniques often used.**

7. Rock		
7.1	What instruments are commonly found in a rock band?	Electric guitars, bass guitar, drum kit and vocals.
7.2	When did rock music emerge as a separate genre?	Rock music emerged in the 1960s from Rock 'n' Roll and blues in the decades before.
7.3	Who were some of the key bands in the early 1960s?	The Beatles, The Rolling Stones, The Kinks, Status Quo.

8. Rock – key vocabulary		
8.1	power chord	A two-note chord consisting of the root note and the fifth
8.2	guitar riff	A memorable rhythmic and/or melodic sequence of notes or chords (often power chords).
8.3	distortion	A guitar effect produced by increasing the signal strength of a guitar amp.

9. Rock – power chords	
9.1	
9.2	
9.3	

10. Rock - Instruments		
10.1	Electric guitar	
10.2	Bass Guitar	
10.3	Drum kit	

Read

Read more about Rock Music from the BBC's GCSE Bitesize page

Listen

Rock since 1951 on YouTube

Watch

BBC Seven Ages Of Rock documentary series

Read

A History of Rock Music in 500 Songs (2 book series)

Listen

Listen to a wide variety of rock music on this Spotify playlist

TASK: Draw a 'family tree' of how the various subgenres of rock have evolved over the last seven decades and how they are related. Create and upload to a new page under UNIT 2 on OneNote.

1. Relationships		
1.1	respect	Taking into account other people's feelings, wishes and rights.
1.2	boundaries	Guidelines, rules and limits we set ourselves to make us feel safe.
1.3	privacy	Ownership of personal space and keeping feelings or thoughts to yourself.
1.4	consent	Asking for permission and giving permission freely.
1.5	conflict	Disagreement between two people or groups of people.
1.6	risky behaviour	Actions that potentially expose people to harm or significant risk of harm.
1.7	peer pressure	The pressure to behave in a certain way because friends or people in a group expect it.

	2. Relationship questions	
2.1	What does a healthy relationship look like?	• Honesty, trust, respect and open communication between partners. • Take effort and compromise from both people. • There is no imbalance of power. • Partners respect each other's independence and can make their own decisions without fear of retribution or retaliation. • Partners share decisions.
2.2	What does an unhealthy relationship look like?	• Lying, cheating, jealousy, and disrespect are signs of an unhealthy relationship. • Can involve controlling a partner including keeping track of where they are, who they are with, even checking or confiscating their phone and deciding what they wear.
2.3	How do I break up respectfully?	• Think over what you want and why you want it. • Even if the other person might be hurt by your decision, it's OK to do what's right for you. • Think about what you'll say and how the other person might react. • Have good intentions. • Be honest — but not brutal. • Say it in person. • If it helps, confide in someone you trust.

3. What does the law say about sexual consent?		
3.1	What does consent mean?	A person agrees by choice, and has the freedom and capacity to make that choice'. Non-consensual sex or sexual activity is an offence.
3.2	What does freedom to give consent mean?	A person 'is in a position to make the choice freely'. They must have the freedom to consent'. There must be no coercion, threats or intimidation.
3.3	What does 'consent is not given or withdrawn' mean?	A person has the right to withdraw consent at any time before or during sex/sexual activity.
3.4	What does capacity to give consent mean?	A person has the mental skills needed to process information to make decisions, and has the ability to understand the meaning, consequences or implications of their decisions.' This includes a mental disorder, age, intoxication.

4. Relationship and Online issues		
4.1	What is the age of sexual consent and what does this mean?	'Consent' means to say yes. So, the 'age of consent' is when the law says you're able to make the decision to say 'yes' to sex. In the UK, the age of consent is 16.
4.2	What is sexting?	Sexting is sending, receiving, or forwarding sexually explicit messages, photographs, or videos, primarily between mobile phones. It's a criminal offence to create or share explicit images of a child, even if the person doing it is a child.
4.3	What is online sexual harassment?	Online sexual harassment is any unwanted sexual behaviour that occurs online. It can happen on any online platform and could include content such as photos, videos, posts, webpages, messages or fake profiles. Even if the harassment was intended as a joke, or was a misunderstanding, it is the experience of the victim that defines whether it is sexual harassment or not.
4.4	What is the impact of viewing harmful content?	Sexually explicit material eg. pornography presents a distorted picture of sexual behaviours. It can damage the way people see themselves in relation to others and negatively affect how they behave towards sexual partners.
4.5	What is sexual abuse?	Sexual abuse is when someone is forced, pressurised or tricked into taking part in any kind of sexual activity with another person.
4.6	What does grooming mean?	Grooming is when someone builds a relationship of trust and emotional connection with a child or young person so they can manipulate, exploit and abuse them. This mainly takes place online.

	5. Contraception facts	
5.1	What is contraception?	Contraception is a way to prevent pregnancy. There are many different types of contraception, and some are more effective than others.
5.2	What are different contraceptive methods?	The most common forms of contraception are: condom, contraceptive pill, contraceptive patch, injection, implant, IUD, cap/diaphragm, femidom.
5.3	What is the difference between barrier and hormonal methods of contraception?	Barrier methods of contraception keep eggs and sperm physically separated to prevent fertilization of an egg whereas hormonal contraception mainly works by preventing ovulation (releasing an egg) to prevent pregnancy.
5.4	Why is it important to use barrier methods of contraception as well as hormonal?	Barrier methods of contraception are important in any sexual relationship to reduce the risk of the spread of sexually transmitted infections which can have long-term consequences on physical, mental and emotional health. These methods should be used no matter what kind of sexual relationship, even when pregnancy would not be possible.
5.5	What is emergency contraception and where can it be accessed?	Emergency contraception is contraception that can be used to prevent pregnancy after sex if no contraception has been used or it failed. It is usually in the form of a pill and is most effective if taken within 72 hours of unprotected sex. It can be bought from a chemist or accessed free via the doctor's surgery or a hospital A&E.
5.6	Where can I access sexual health advice and free contraception?	This can be accessed from sexual health clinics which are based in places such as the Royal Hampshire County hospital in Winchester. They offer tests and treatment for sexually transmitted infections and all advice is confidential. Doctors surgeries provide confidential advice about sexual health, pregnancy and different contraceptive methods. All prescribed contraception is free.

6. STI facts		
6.1	STI	Sexually transmitted infection.
6.2	Chlamydia	A bacterial infection which, if left untreated, can lead to infertility. It has few symptoms but can be easily treated with antibiotics.
6.3	Gonorrhoea	A bacterial infection which, if left untreated, can lead to infertility. It has few symptoms but can be easily treated with antibiotics.
6.4	Herpes	A viral infection which causes small, painful blisters around the genital area.
6.5	Genital warts	A viral infection which causes small warts around the genital area. They are not painful, just unsightly.
6.6	Hepatitis B	A virus that is highly contagious and attacks the liver.
6.7	HIV	Human Immunodeficiency Virus is a virus that damages the body's immune system so it cannot fight off infections. If left untreated, it develops into AIDS, which is incurable.

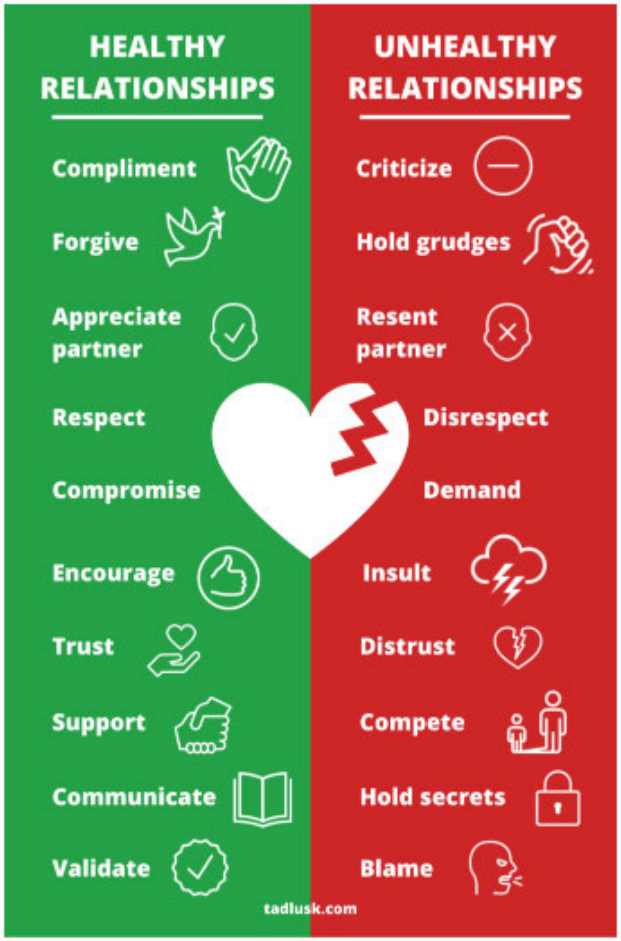
childline

Childline – friends, relationships and sex

Childnet

Childnet – help and advice for 11-18's

How to break up respectfully – Do's and don'ts.



brook

letstalkabout it

Am I in a healthy relationship?

1. Arguments for the existence of God		
1.1	Thomas Aquinas	13th Century philosopher who demonstrated that faith was reasonable through the First Cause Argument. He later went on to say the apparent order and complexity in the world is proof of a designer and that this designer is God.
1.2	Fallacy of Composition- David Hume	The claim that it is wrong to assume that what is true of something's parts must also be true of the whole.
1.3	First Cause/Cosmological argument	As everything in the universe needs a cause, so the universe must have a cause, that cause must be God.
1.4	infinite regress	An endless sequence of cause with no beginning.
1.5	logical fallacy	A statement or argument that is logically flawed.
1.6	Design/Teleological argument	The world around us looks as though it has been designed. Designed things need an intelligent designer. The intelligent designer of the world is God.
1.7	William Paley 	Used an analogy to demonstrate agreement with the design argument. If one came across a mechanical watch on the ground, they would assume that its many complex parts fitted together for a purpose and that it had not come into existence by chance. There must be a watchmaker.
1.8	evolution	The process by which different life forms are believed to have developed from other, earlier life forms over time - developed by Charles Darwin.
1.9	Anthropic Principle	The idea that the universe is just right for life to come into existence and the process of evolution supports the idea of a designer God.
2.0	New Atheists	The name for a group of modern philosophers who believe that religion is irrational and should be argued against.

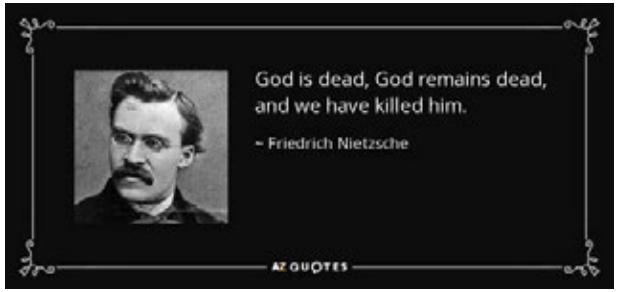
2. The Nature of God		
2.1	attributes of God	God's characteristics. What he is like.
2.2	eternal	Without beginning or end.
2.3	free will	The ability to choose between right and wrong, some believe this ability is given by God.
2.4	immanent	The belief that God is close to humanity and involved in the world.
2.5	immutable	unchangeable
2.6	omnipotent	The belief that God is all-powerful.
2.7	omnibenevolent	The belief that God is all-loving and good.
2.8	omniscient	The belief that God is all-knowing.
2.9	omnipresent	The belief that God is present everywhere.
2.9	transcendent	Beyond our understanding.
3.0	The Trinity	The belief that God is one God existing as three entities: The Father, Son, Holy Spirit, as demonstrated in The Apostles Creed.
3.2	Apophatic Theology	Some philosophers argue that we cannot accurately describe the nature of God because our language is too limited to express the essence of God. Therefore, some Christians think that they should only talk about what God is **NOT, rather than what he is.**

3. The Problem of evil and suffering		
1.1	Theodicy	An argument to justify the existence of God, despite the existence of evil in the world.
1.2	Augustinian theodicy	God is not responsible for evil, it is a lack of goodness introduced through human freewill due to the Original Sin in Genesis 3.
1.3	Irenaean theodicy	Humans were created imperfect and therefore, God created evil so that humans can grow their souls into becoming children of God.
1.4	Inconsistent triad	The existence of suffering alongside an all-loving (omnibenevolent) and all-powerful (omnipotent) God are argued to be contradictory.

1. Intro to The Holocaust		
1.1	The Holocaust	Also known as the Shoah, was the genocide of European Jews during World War II.
1.2	Shoah	The Jewish name given to genocide of European Jews.
1.3	Antisemitism	Hostility to or prejudice against Jewish people.
1.4	Discrimination	The unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, sex, or disability.
1.5	Prejudice	preconceived opinion that is not based on reason or actual experience.
1.6	Genocide	The systematic and widespread slaughter of an entire national, racial, religious, or ethnic group.
1.7	Jew	A member of the people and cultural community whose traditional religion is Judaism and who trace their origins through the ancient Hebrew people of Israel to Abraham.
1.8	Roma & Sinti	Largest European minority who have lived in Europe for over 1000 years. They enjoy a nomadic way of life.

2. Pre-war Jewish life		
2.1	Shtetl	The name given to a town/village in Eastern Europe where the population was almost entirely Jewish.
2.2	Yiddish	The first language of millions of Jews living in Eastern Europe.
2.3	Hebrew	The ancient language of the Torah and of prayer.
2.4	Orthodox Jews	Traditional Jews who are devoted to the study of the Torah.
2.5	Assimilated Jews	Jews who did not live separately from the non-Jewish community but had adopted the language, dress and culture of the non-Jewish society in which they lived.
2.6	Bund	A Jewish movement in Poland dedicated to bettering the conditions of the Jewish working class and celebrating a Yiddish culture.
2.7	Zionism	A Jewish movement dedicated to establishing a Jewish homeland in Palestine
2.8	Yom Kippur	The day of Atonement, a day of fasting.
2.9	Rosh Hashanah	Jewish New Year, the anniversary of creation.

3. Antisemitism		
3.1	scapegoat	A person who is blamed for the wrongdoings, mistakes, or faults of others.
3.2	Ghettos	Neighbourhoods of European cities in which Jews were permitted to live.
3.3	Nuremberg Laws	Antisemitic and racist laws that were enacted in Nazi Germany in order to restrict Jewish freedoms.
3.4	persecution	To treat someone unfairly or cruelly over a long period of time because of their race, religion, or political beliefs.



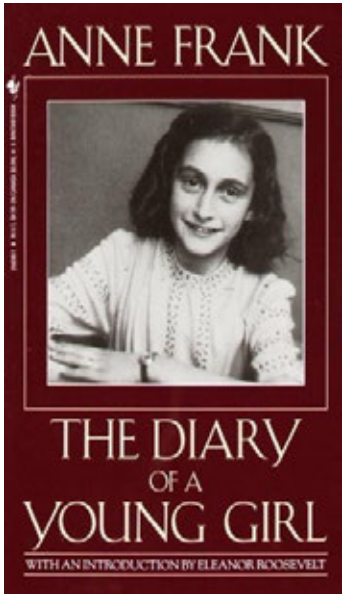
The Nature of God Oak National Academy

Arguments for the existence of God Youtube

The Augustinian theodicy Youtube

The Irenaean Theodicy Youtube

Stretch your vocabulary
Atemporal - outside of space and time
Infallible - incapable of making mistakes



Hear from a Holocaust survivor

Research: The Holocaust Encyclopedia

Learn about life in the Ghettos

1	2											3	4	5	6	7	0
							1 **H** hydrogen 1										4 **He** helium 2
7 **Li** lithium 3	9 **Be** beryllium 4											11 **B** boron 5	12 **C** carbon 6	14 **N** nitrogen 7	16 **O** oxygen 8	19 **F** fluorine 9	20 **Ne** neon 10
23 **Na** sodium 11	24 **Mg** magnesium 12											27 **Al** aluminium 13	28 **Si** silicon 14	31 **P** phosphorus 15	32 **S** sulfur 16	35.5 **Cl** chlorine 17	40 **Ar** argon 18
39 **K** potassium 19	40 **Ca** calcium 20	45 **Sc** scandium 21	48 **Ti** titanium 22	51 **V** vanadium 23	52 **Cr** chromium 24	55 **Mn** manganese 25	56 **Fe** iron 26	59 **Co** cobalt 27	59 **Ni** nickel 28	63.5 **Cu** copper 29	65 **Zn** zinc 30	70 **Ga** gallium 31	73 **Ge** germanium 32	75 **As** arsenic 33	79 **Se** selenium 34	80 **Br** bromine 35	84 **Kr** krypton 36
85 **Rb** rubidium 37	88 **Sr** strontium 38	89 **Y** yttrium 39	91 **Zr** zirconium 40	93 **Nb** niobium 41	96 **Mo** molybdenum 42	[98] **Tc** technetium 43	101 **Ru** ruthenium 44	103 **Rh** rhodium 45	106 **Pd** palladium 46	108 **Ag** silver 47	112 **Cd** cadmium 48	115 **In** indium 49	119 **Sn** tin 50	122 **Sb** antimony 51	128 **Te** tellurium 52	127 **I** iodine 53	131 **Xe** xenon 54
133 **Cs** caesium 55	137 **Ba** barium 56	139 **La*** lanthanum 57	178 **Hf** hafnium 72	181 **Ta** tantalum 73	184 **W** tungsten 74	186 **Re** rhenium 75	190 **Os** osmium 76	192 **Ir** iridium 77	195 **Pt** platinum 78	197 **Au** gold 79	201 **Hg** mercury 80	204 **Tl** thallium 81	207 **Pb** lead 82	209 **Bi** bismuth 83	[209] **Po** polonium 84	[210] **At** astatine 85	[222] **Rn** radon 86
[223] **Fr** francium 87	[226] **Ra** radium 88	[227] **Ac*** actinium 89	[261] **Rf** rutherfordium 104	[262] **Db** dubnium 105	[266] **Sg** seaborgium 106	[264] **Bh** bohrium 107	[277] **Hs** hassium 108	[268] **Mt** meitnerium 109	[271] **Ds** darmstadtium 110	[272] **Rg** roentgenium 111	Elements with atomic numbers 112 – 116 have been reported but not fully authenticated						

Key

relative atomic mass
atomic symbol
name
atomic (proton) number

* The Lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted.

Relative atomic masses for **Cu** and **Cl** have not been rounded to the nearest whole number.

7. The Periodic Table		
7.1	How are elements in the periodic table arranged?	In order of atomic (proton) number.
7.2	What is a group in the periodic table?	A column of elements which have **similar properties.**
7.3	What is a period in the periodic table?	A row of elements.
7.4	Why is the periodic table so called?	Because similar properties occur at regular intervals.
7.5	What can the group number tell you about the electrons in an atom?	How many electrons are in the outer shell of the atom. *E.g. carbon is in group 4 so has 4 electrons in the outer shell*
7.6	What can the period tell you about the electrons in an atom?	How many shells an atom has. *E.g. carbon is in the second period so has two shells*

8. Development of the Periodic Table		
8.1	How were elements arranged in early versions of the periodic table?	In order of atomic weight.
8.2	Why were early versions of the periodic table not generally accepted?	They were incomplete and some elements were placed in inappropriate groups if the strict order of atomic weights was followed.
8.3	Name two ways Mendeleev improved the early version of the periodic table	• He placed the elements in groups based on similar properties. • He left gaps for undiscovered elements. • In some places he changed the order based on atomic weights.
8.4	What led to the acceptance of Mendeleev's periodic table?	• Mendeleev correctly predicted the properties of undiscovered elements. • Discovery of isotopes confirmed he was right not to strictly order elements using their atomic weights.

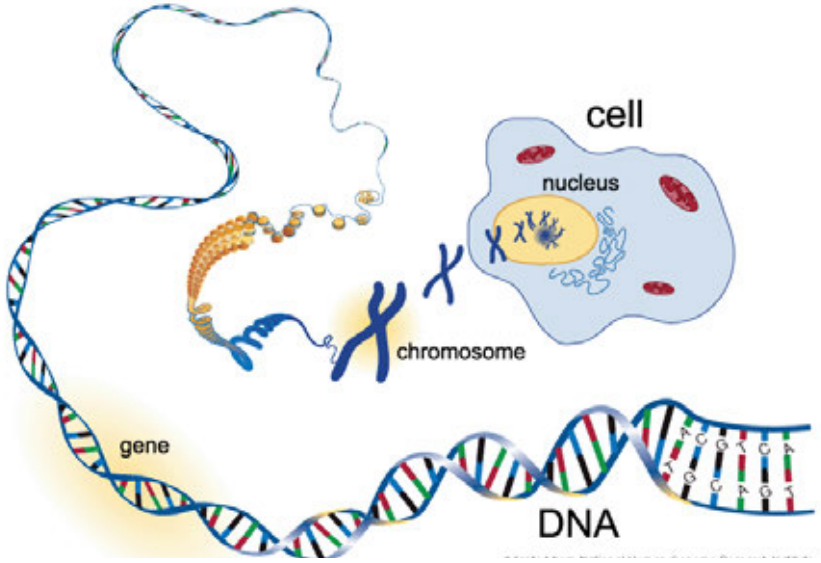
9. Ions and Metals and Non-Metals		
9.1	What is an ion?	A charged atom resulting from the loss or gain of electrons..
9.2	If an atom gains electrons, what charge will it have?	Negative.
9.3	If an atom loses electrons, what charge will it have?	Positive.
9.4	What is the definition of a metal?	Elements that react to form positive ions.
9.5	What is the definition of a non-metal?	Elements that do not form positive ions.
9.6	Are most of the elements on the periodic table metals or non-metals?	Metals.
9.7	Where are metals found on the periodic table?	To the left and bottom of the table.
9.8	Where are non-metals found on the periodic table?	To the right and top of the table.

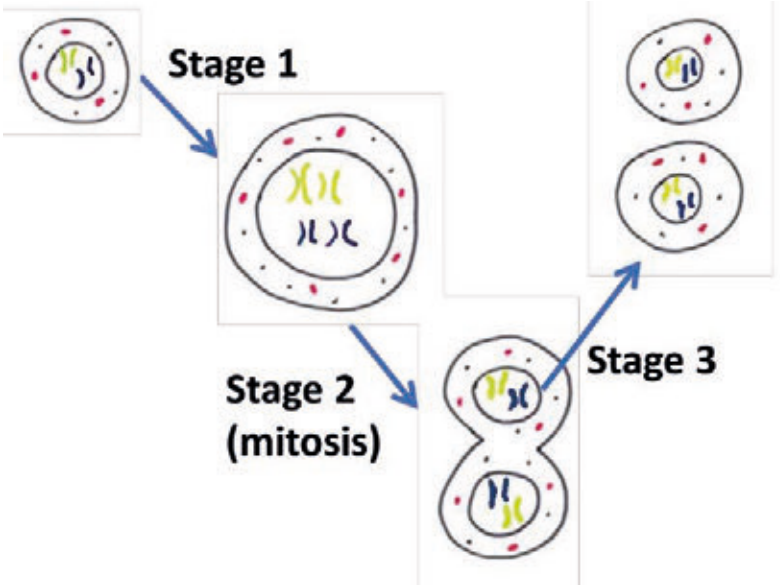
10. Group 0		
10.1	What is the name of elements in group 0?	The noble gases.
10.2	Why are elements in group 0 unreactive?	Because their atoms have stable arrangements of electrons (they have full outer shells).
10.3	With the exception of helium, how many electrons do group 0 elements have in their outer shell?	8.
10.4	Describe the trend in boiling point as you go down group 0.	The boiling point increases as you go down group 0.

11. Group 1		
11.1	What is the name of elements in group 1?	The alkali metals.
11.2	Why do elements in group 1 have very similar properties?	They all have one electron in their outer shell.
11.3	Describe the trend in reactivity as you go down group 1.	Reactivity increases.
11.4	Why does reactivity change as you go down group 1?	As you go down the group: • the distance between the outer electron and the nucleus increases. • the attraction between the positive nucleus and the negative outer electron decreases. • the outer electron is more easily lost.
11.5	What is produced in a reaction between a group 1 metal and water?	Metal hydroxide and hydrogen (gas).
11.6	What is produced in a reaction between a group 1 metal and oxygen?	Metal oxide (white solid).
11.7	What is produced in a reaction between a group 1 metal and chlorine?	Metal chloride (white solid).
11.8	Describe the reaction of a group 1 element with water.	A vigorous reaction in which the metal floats and moves around the surface of the water fizzing.
11.9	Why do group 1 elements tarnish in the air?	Group 1 elements are very reactive with oxygen in the air and form a dull metal oxide layer on their surface.
11.10	Describe the reaction of a group 1 element with chlorine.	A very vigorous reaction.

12. Group 7		
12.1	What is the name of elements in group 7?	The halogens.
12.2	Why do elements in group 7 have very similar properties?	They all have seven electrons in their outer shell.
12.3	Name two properties of group 7 elements.	• Non-metals. • Consist of molecules made of pairs of atoms.
12.4	When group 7 elements react with non-metals, what is formed?	Molecular compounds.
12.5	When group 7 elements react with metals, what is formed?	Salts.
12.6	Describe the trend in reactivity as you go down group 7	Reactivity decreases.
12.7	What type of reaction would be occurring if a more reactive halogen reacted with the salt of a less reactive halogen?	A displacement reaction.
12.8	Describe the trend in melting and boiling point as you go down group 7.	Melting and boiling point increases.
12.9	Explain the trend in melting and boiling point as you go down group 7.	As you go down group 7: • Molecular mass increases. • Strength of attraction between molecules increases. • More energy is required to overcome the forces of attraction.

6. Cell Differentiation		
6.1	What is cell differentiation?	The process of a cell becoming specialised.
6.2	What happens to a cell as it differentiates?	It acquires different sub-cellular structures to enable it to carry out certain functions.
6.3	Which type of cells only differentiate at early stages?	Animal cells.
6.4	Which type of cells retain the ability to differentiate throughout life?	Plant cells.
6.5	In mature animals what is the purpose of cell division?	Repair and replacement.
7. Chromosomes		
7.1	What is found in the nucleus of a cell?	Chromosomes made of DNA molecules.
7.2	What is a gene?	A section of DNA found on a chromosome.
7.3	How are chromosomes arranged in the nuclei of body cells?	They are normally found in pairs.
8. Mitosis and the Cell Cycle		
8.1	What is the cell cycle?	A series of stages in which a cell divides to make new cells.
8.2	What is mitosis?	The stage in the cell cycle in which the nucleus divides.
8.3	What is the purpose of the cell cycle?	For growth and repair.
8.4	What must happen to a cell before it can divide?	• The number of sub-cellular structures doubles (e.g. ribosomes and mitochondria). • The DNA replicates to form two copies of each chromosome.
8.5	What happens to the chromosomes and the nucleus during mitosis?	One set of chromosomes is pulled to each end of the cell and the nucleus divides.
8.6	What happens in the last stage of the cell cycle (following mitosis)?	The cytoplasm and cell membrane divide to form two identical cells.





9. Stem Cells		
9.1	What is a stem cell?	An undifferentiated cell, capable of giving rise to many more cells of the same type which can differentiate into specialised cells.
9.2	What is the function of embryonic stem cells?	To differentiate into all types of body cell.
9.3	Why are embryonic stem cells important in medical research?	They can be cloned and made to differentiate into most different types of human cell.
9.4	Where can stem cells be found in adults?	Bone marrow.
9.5	What can adult stem cells differentiate to form?	Blood cells and some other cells.
9.6	What plant tissue can differentiate into any type of plant cell?	Meristem tissue.
9.7	Name two medical conditions that could be treated with stem cells.	Diabetes and paralysis.
9.8	What is therapeutic cloning?	When an embryo is produced with the same genes as the patient.
9.9	What is the benefit of therapeutic cloning?	Stem cells from the embryo are not rejected by the patients body.
9.10	Name two potential problems with the use of stem cells in therapeutic cloning.	Transfer of viral infection, ethical/religious objections.
9.11	What can stem cells from meristems in plants be used to produce?	Clones of plants (quickly and economically).
9.12	What is the benefit of using meristems to produce clones of plants?	Rare species can be cloned to protect from extinction, cloning disease resistant plants.

10. Diffusion		
10.1	What is diffusion?	The spreading out of particles of any substance in a gas or solution resulting in a net movement from an area of higher concentration to an area of lower concentration.
10.2	What is meant by net movement?	The overall movement of particles.
10.3	What is meant by concentration gradient?	The difference in concentration between two regions.
10.4	Why is diffusion important to cells?	It allows substances to be transported in and out of cells.
10.5	Name two substances transported by diffusion in gas exchange.	Oxygen and carbon dioxide.
10.6	What is the name of the substance transported by diffusion from cells into blood plasma (for excretion in the kidney)?	Urea.
10.7	Name three factors which affect the rate of diffusion.	Difference in concentration (concentration gradient), temperature, surface area of membrane.
10.8	What effect will increasing the concentration gradient have on the rate of diffusion?	It will increase – due to the larger difference in concentration.
10.9	What effect will increasing the temperature have on the rate of diffusion?	It will increase - the particles have more energy so move around faster.
10.10	What effect will increasing the surface area of a membrane have on the rate of diffusion?	It will increase - more particles pass through at once.

10.11	Does a single celled organism have a large or small SA:V (surface area: volume ratio)?	Large.
10.12	What is the benefit of single celled organisms having a large SA:V?	Sufficient transport of molecules into and out of the cell by diffusion.
10.13	Why do multicellular organisms require exchange surfaces and a transport system?	Small surface area to volume ratio, so cannot rely on diffusion alone.
10.14	Name four ways the effectiveness of an exchange surface can be increased.	• Having a large surface area. • Thin membrane – to provide a short diffusion path. • Having an efficient blood supply (in animals only). • Being ventilated (in animals, for gaseous exchange only).
10.15	Name four ways alveoli are specialised for diffusion.	Large SA (surface area), moist lining, thin walls, efficient blood supply.
10.16	Name two ways villi in the small intestine are specialised for diffusion.	Increased SA for quick absorption, efficient blood supply.
10.17	Name three ways leaves are specialised for diffusion.	Stomata for gas exchange, flattened shape, air spaces to increase SA.
10.18	Name four ways gills in fish are specialised for diffusion.	Filaments (large SA), lamellae (large SA), thin surface layer, blood flow.

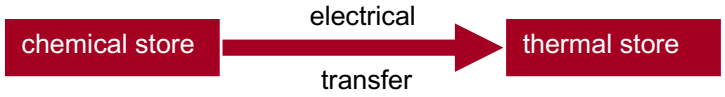
11. Osmosis		
11.1	What is osmosis?	The diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane.
11.2	Osmosis may cause an increase or decrease in mass. How can you calculate the percentage change in mass?	$\frac{\text{change in mass}}{\text{starting mass}} \times 100$

12. Osmosis in Plant Tissues		
12.1	When preparing plant tissue to investigate osmosis, why should you use a cork borer to cut the plant tissue (e.g. potato)?	So each piece of plant tissue has the same diameter (to act as a control variable).
12.2	What measurements should be taken to investigate osmosis in plant tissue?	Change in mass, change in length.
12.3	Name two ways to reduce error when investigating osmosis in plant tissue.	• Blot the plant tissue dry so excess water/solution is removed before making measurements. • Place a bung on the tube to prevent the evaporation of water (which would change the concentration of the solution).
12.4	Why is it important to calculate the percentage change in mass of the plant tissue when investigating osmosis?	Difficult to control the starting mass of the plant tissue.

13. Active Transport		
13.1	What is active transport?	The movement of substances from a dilute solution to a more concentrated solution (against a concentration gradient).
13.2	What does active transport require? Why?	Energy from respiration - moving against the concentration gradient.
13.3	Name an example of a substance that is moved by active transport in plants.	Mineral ions moving from dilute solutions in the soil into the root hair cell.
13.4	Name an example of a substance that is moved by active transport in animals.	Sugar molecules moving from lower concentrations in the gut to higher concentrations in the blood.

1. Energy Stores		
1.1	What is energy?	The ability to do work.
1.2	What is the unit of energy?	Joules (J)
1.3	Name five stores of energy.	1. Kinetic 2. Chemical 3. Thermal 4. Gravitational potential 5. Elastic potential
1.4	What store of energy would an object have if it is raised off the floor?	Gravitational potential
1.5	What store of energy would an object have if it is moving?	Kinetic
1.6	What store of energy would an object because of the chemical bonds it has?	Chemical
1.7	What store of energy would an object have because of its temperature?	Thermal
1.8	What store of energy would an object have if it has been stretched or squashed?	Elastic potential
1.9	What store of energy is present in food, our bodies, batteries and fuels?	Chemical
1.10	What is a system?	An object or group of objects.
1.11	What stores of energy change when an object is projected upwards?	Gravitational potential store increases, chemical store decreases.
1.12	What stores of energy change when a moving objects hits an obstacle?	Kinetic store decreases, thermal store increases, kinetic store of obstacle may increase.
1.13	What stores of energy change when an objected is accelerated with a constant force?	Kinetic store increases, chemical store decreases
1.14	What stores of energy change when a vehicle slows down?	Kinetic store decreases, thermal store increases.
1.15	What stores of energy change when water is brought to the boil in a kettle?	Chemical store decreases, thermal store increases.

2. Energy Transfers		
2.1	Name four ways energy can be transferred in a system	1. Heating 2. Work done by forces (mechanical) 3. Work done when a current flows (electrical) 4. Radiation
2.2	What transfer would take place when energy is transferred in a battery-powered torch to the bulb when it is switched on?	Work done when a current flows (electrical)
2.3	What transfer would take place when energy is transferred as you throw a ball into the air?	Work done by forces (mechanical).
2.4	What energy transfer would take place when a hot cup of tea transfers energy to the surroundings?	Heating
2.5	What energy transfer takes place when a TV screen transfers energy to the surroundings because light and sound are being emitted?	Radiation



3. Conservation of Energy and Efficiency		
3.1	What is a closed system?	A system where no energy can be transferred to or from the surroundings - the total energy in the system stays the same.
3.2	What is the law of conservation of energy?	Energy cannot be created or destroyed, it can only be transferred from one store to another.
3.3	What is dissipated energy?	Energy that has been transferred to a store that is not useful (wasted energy).
3.4	What is the most common store that energy is dissipated into?	Thermal store
3.5	Name two methods of reducing unwanted energy transfers	1) Lubrication (to reduce friction) 2) Thermal insulation
3.6	If a material has high thermal conductivity, what does this mean?	The rate of energy transfer by conduction across the material is very high.
3.7	If a material is a thermal insulator, what does this mean?	The rate at which energy is transferred through the material by heating is very low.
3.8	Name two factors which affect the rate of cooling of a building	1) Thickness of the walls 2) Thermal conductivity of the walls
3.9	How can energy efficiency be calculated?	Energy efficiency = useful output energy ÷ total input energy

The following prefixes may be used in calculation questions:

Prefix	Multiplier	Power of ten
giga, G	1,000,000,000	10^9
mega, M	1,000,000	10^6
kilo, k	1,000	10^3
centi, c	1/100	10^{-2}
milli, m	1/1,000	10^{-3}
micro, µ	1/1,000,000	10^{-6}
nano, n	1/1,000,000,000	10^{-9}

4. Gravitational Potential Energy		
4.1	When will energy will be transferred to the gravitational store of an object?	When it is raised above the ground.
4.2	What is the equation to calculate the energy in the gravitational potential store?	Gravitational energy store = mass x gravitational field strength x height (Ep = mgh).
4.3	What is the unit for mass?	kilograms (kg)
4.4	What is the unit for gravitational field strength?	newtons per kilogram (N/kg)
4.5	What is the gravitational field strength on Earth?	9.8N/kg
4.6	What is the unit for height?	metres (m)

Worked example questions:

A ball with a mass of 0.5kg is kicked into the air. Calculate the store of gravitational potential energy stored in the ball when it is 4m above the ground.

$E_p = m \ g \ h$
$E_p = 0.5 \times 9.8 \times 4$
$E_p = 19.6J$

A drone is hovering 15m above the ground and has store of 36.75J of potential energy. Calculate the mass of the drone.

$E_p = m \ g \ h$
$36.75 = m \times 9.8 \times 15$
$36.75 = m \times 147$
$\frac{36.75}{147} = m$
$0.25kg = m$

4. Kinetic Energy		
4.1	When will energy will be transferred to the kinetic store of an object?	When the object starts moving
4.2	What is the equation to calculate the energy in the kinetic store?	Kinetic energy store = 0.5 x mass x velocity^2 (E_k=½mv^2)
4.3	What is the unit for mass?	kilograms (kg)
4.4	What is the unit for velocity?	metres per second (m/s)

Worked example questions:

A car is moving at a speed of 25m/s and has a mass of 990kg. Calculate the kinetic energy stored in the car as it moves.

$E_k = \frac{1}{2} \quad m \quad v^2$

$E_k = 0.5 \times 990 \times 25^2$

$E_k = 0.5 \times 990 \times 625$

$E_k = 309{,}375\text{J}$

A bird with a mass of 200g is flying at a speed of 5m/s. Calculate the kinetic energy stored in the bird as it flies.

$200\text{g} = 0.2\text{kg}$ $(200 \div 1000 = 0.2)$

$E_k = \frac{1}{2} \quad m \quad v^2$

$E_k = 0.5 \times 0.2 \times 5^2$

$E_k = 0.5 \times 0.2 \times 25$

$E_k = 2.5\text{J}$

Sam is riding his bike and has a kinetic store of 1440J. The mass of Sam and his bike is 80kg. Calculate Sam's speed.

$E_k = \frac{1}{2} \quad m \quad v^2$

$1440 = 0.5 \times 80 \times v^2$

$1440 = 40 \times v^2$

$\frac{1440}{40} = v^2$

$36 = v^2$

$\sqrt{36} = v$

$6\text{m/s} = v$

5. Elastic Potential Energy		
5.1	When will energy will be transferred to the elastic store of an object?	When it is stretched or compressed
5.2	What is the equation to calculate the energy in the elastic store?	Elastic energy store = 0.5 x spring constant x extension^2 (E_e=½Ke^2)
5.3	What is spring constant?	How difficult it is to extend or compress an elastic object (the larger the spring constant, the more force required)
5.4	What is the unit for spring constant?	Newtons/metre (N/m)
5.4	What is the unit for extension?	Metres (m)
5.5	How is the extension of a spring measured?	extension = extended length - original length

Worked example questions:

A trampoline spring has a spring constant of 150N/m. It is extended by 0.2m. Calculate the elastic store of energy in the spring.

$E_e = \frac{1}{2} \quad K \quad e^2$

$E_e = 0.5 \times 150 \times 0.2^2$

$E_e = 0.5 \times 150 \times 0.04$

$E_e = 3\text{J}$

A spring has a spring constant of 12N/m. It is extended and stores 0.06J of elastic potential energy. Calculate the extension of the spring.

$E_e = \frac{1}{2} \quad K \quad e^2$

$0.06 = 0.5 \times 12 \times e^2$

$0.06 = 6 \times e^2$

$\frac{0.06}{6} = e^2$

$0.01 = e^2$

$\sqrt{0.01} = e$

$0.1\text{m} = e$

6. Work Done and Power		
6.1	What is work done?	A measure of the energy transferred from one store to another
6.2	What is the unit for work done?	Joules (J)
6.3	What is power?	The rate at which energy is transferred or the rate at which work is done
6.4	How is power calculated?	power = energy transferred ÷ time power = work done ÷ time
6.5	What is the unit for power?	Watts (W)
6.6	What is the unit for time?	Seconds (s)

Worked example questions:

Two electric motors are used to lift a weight to the same height. 5J of energy is now stored in each weight. Motor one does this in 5 seconds. Motor two does this in 10 seconds. Calculate the power of each motor.

motor one
$P = E \div T$
$P = 5 \div 5$
$P = 1W$

motor two
$P = E \div T$
$P = 5 \div 10$
$P = 0.5W$

Why is motor one more powerful?

because it transfers energy more quickly

A hairdryer has a power of 800W. It is used for 45 seconds. How much energy is transferred in this time?

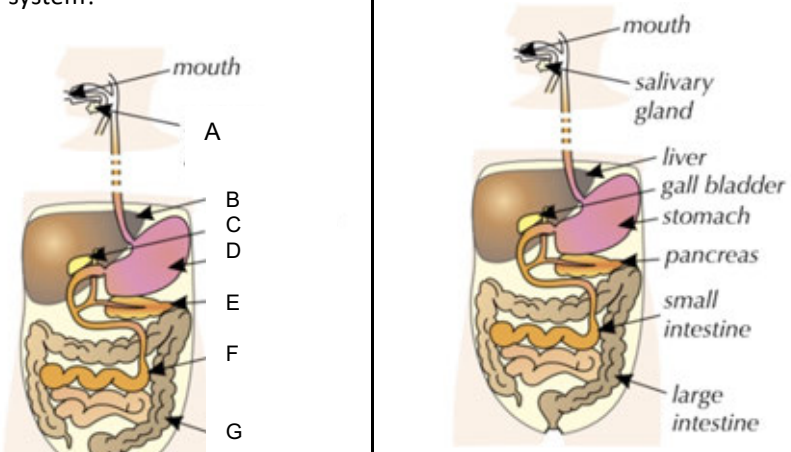
$P = E \div t$
$800 = E \div 45$
$800 \times 45 = E$
$36{,}000J = E$

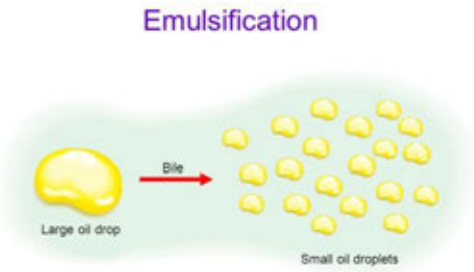
7. Renewable Energy Resources		
7.1	What are the three main uses of energy **resources**?	Transport, electricity generation and heating.
7.2	What is a renewable energy resource?	An energy resource that can be replenished at the same rate or at a faster rate than it is being used
7.3	What are the main renewable energy resources that we use on Earth?	Bio-fuel, wind, hydro-electricity, geothermal, tidal, solar, waves.
7.4	What are the advantages and disadvantages of renewable energy resources?	See the next page

8. Non-Renewable Energy Resources		
8.1	What is a non-renewable energy resource?	An energy resource that is being used at a faster rate than it can be replenished
8.2	Name two examples of non-renewable energy resources	Fossil fuels (coal, oil and natural gas), nuclear fuel
8.3	What is a fossil fuel?	A fuel formed from the remains of living organisms (plants and animals) millions of years ago
8.4	What are the advantages and disadvantages of non-renewable energy resources?	See the next page

Energy resource	Energy store	Renewable?	Uses	Power output	Environmental impact
Fossil fuels (oil, coal and natural gases)	Chemical	Non-renewable	Transport, heating, electricity generation	High	Releases carbon dioxide (causes global warming)
Nuclear fuels	Nuclear	Non-renewable	Electricity generation	Very high	Radioactive waste (needs to be disposed of safely)
Bio-fuel	Chemical	Renewable	Transport, heating, electricity generation	Medium	'Carbon neutral', so low impact
Wind	Kinetic	Renewable	Electricity generation	Very low	Takes up large areas that could be used for farming, some people say windmills spoil the view
Hydroelectricity	Gravitational potential	Renewable	Electricity generation	Medium	Local habitats are affected by the large areas that need to be flooded to build dams
Geothermal	Internal (thermal)	Renewable	Electricity generation, heating	Medium	Very low
Tides	Kinetic	Renewable	Electricity generation	Potentially very high, but hard to harness	Tidal barrages can block sewage which needs to go out to sea
Sun	Nuclear	Renewable	Electricity generation, heating	Dependent on the weather and only available during daylight	Very little
Water waves	Kinetic	Renewable	Electricity generation	Low	Very low

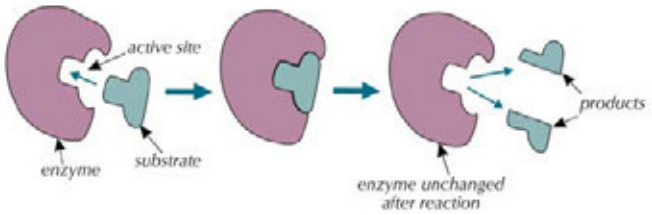
1. Levels of Organisation		
1.1	What are cells?	The basic building blocks of all living organisms
1.2	What is a tissue?	A group of cells with a similar structure and function
1.3	What is an organ?	A group of tissues performing specific functions
1.4	What is an organ system?	A group of organs working together to form organisms

2. Digestive System		
2.1	What is the function of the digestive system?	To break down food
2.2	What happens to food molecules during digestion?	Large food molecules are broken down into small molecules and are absorbed into the bloodstream
2.3	What is the function of the salivary glands in digestion?	Produce saliva (containing amylase enzyme
2.4	What is the function of the stomach in digestion?	Churns food with its muscular walls, mixes food with acid
2.5	What is the function of the liver in digestion?	To produce bile
2.6	What is the function of the gall bladder in digestion?	Stores bile before it's released into the small intestine
2.7	What is the function of the pancreas in digestion?	To produce and secrete enzymes
2.8	What is the function of the small intestine in digestion?	To produce enzymes and to absorb nutrients from the digested food
2.9	What is the function of the large intestine in digestion?	Absorb excess water
2.10	State two functions of bile in digestion	Emulsify fat, neutralise stomach acid before food moves into the small intestine
2.11	State two functions of the stomach acid	Kills bacteria and creates an acidic environment
2.12	How is the small intestine adapted to absorb nutrients?	• It is very long • Villi provide a large surface area • Villi are one cell thick • Efficient blood supply • Cells have many mitochondria
2.13	What are the labels in this diagram of the digestive system?	

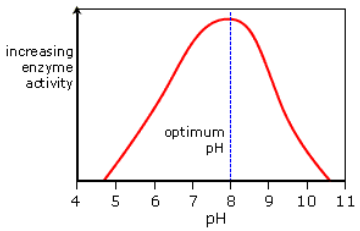


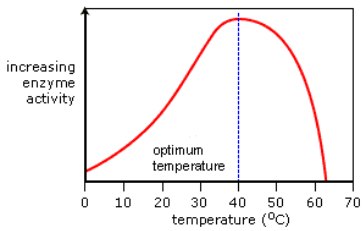
3. Food Tests		
3.1	How can you prepare a sample of food for a food test?	Crush the food (using a pestle and mortar), add a few drops of water and mix well
3.2	What is the name of the chemical used when testing for starch in a food sample?	Iodine Solution
3.3	What colour is iodine and what colour does it turn in the presence of starch?	Brown, turns black/ dark blue if starch is present
3.4	What is the name of the chemical used when testing for lipids in a food sample?	Ethanol
3.5	What colour is ethanol and what happens to it in the presence of lipids?	Colourless, solution turns cloudy if lipids are present
3.6	What is the name of the chemical used when testing for sugar in a food sample?	Benedict's solution
3.7	What colour is Benedict's solution and what colour does it turn in the presence of sugar?	Blue, turns orange/ red if sugar is present
3.8	What extra experimental step is required when testing for sugar?	Heat the solution in a boiling water bath at 75°C for 5 minutes
3.9	What is the name of the chemical used when testing for protein in a food sample?	Biuret solution
3.10	What colour does biuret solution turn in the presence of protein?	Purple

4. Enzymes		
4.1	What is an enzyme?	A biological catalyst which is a protein
4.2	Name the three different groups of enzymes involved in digestion	Carbohydrases, proteases, lipases
4.3	Which group of enzymes break down carbohydrates?	Carbohydrases
4.4	Which group of enzymes break down proteins?	Proteases
4.5	Which group of enzymes break down lipids?	Lipases
4.6	What products are carbohydrates broken down into?	Simple sugars, e.g. glucose
4.7	What products are proteins broken down into?	Amino acids
4.8	What products are lipids broken down into?	Fatty acids and glycerol
4.9	What are the products of digestion used for, in the body?	To build new carbohydrates, proteins and lipids, some glucose is used in respiration
4.10	What is the lock and key model?	The specific shape of the active site matches the specific shape of its substrate molecules
4.11	What does denatured mean?	When the shape of the enzymes active site changes and the substrate no longer fits
4.12	Name two environmental conditions that cause an enzyme active site to change	Temperature increase, increase or decrease in pH

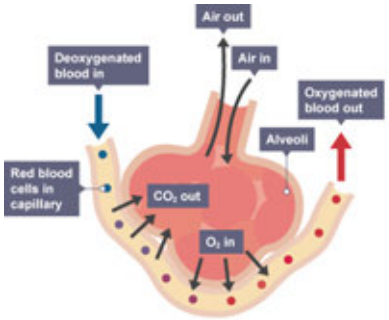


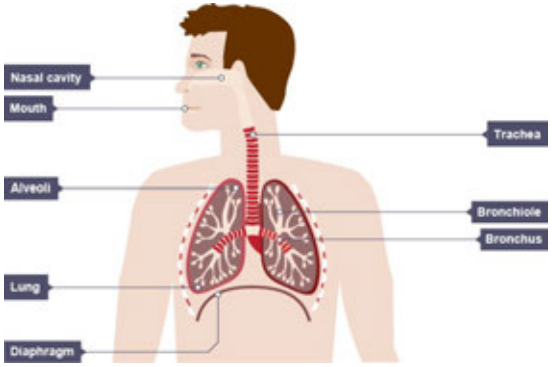
5. Rate of Enzyme Action		
5.1	Name two factors which affect the rate of enzyme action	Temperature, pH
5.2	What product does amylase break starch down into?	Glucose
Practical: Does pH effect the rate at which starch is broken down by the enzyme amylase?		
5.6	Why must a water bath be used during the practical?	To control the temperature
5.7	What is the independent variable in this investigation?	The pH
5.8	What is the dependent variable in this investigation?	The time taken for starch to fully breakdown
5.9	What are the control variables in this investigation?	• Volume of amylase solution • Volume of starch solution • Concentration of amylase solution • Concentration of starch solution • Temperature
5.10	What is the purpose of iodine in this investigation?	To test for the presence of starch to determine if it has been broken down
5.11	Why is continuous sampling used in this investigation?	To test for the presence of starch in a sample at regular intervals

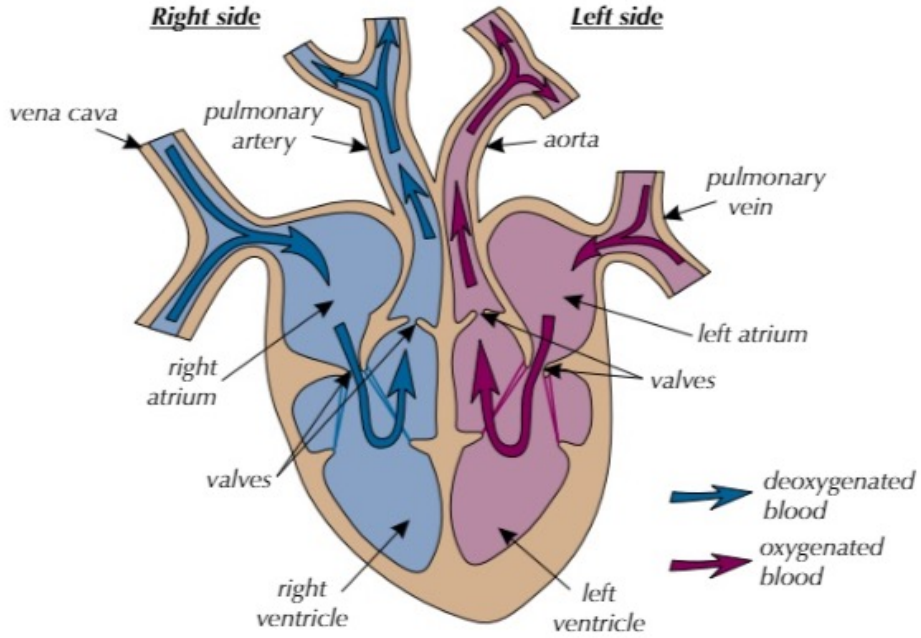




6. The Lungs		
6.1	What structure protects the lungs?	Rib cage
6.2	What are the structures called where gas exchange happens?	Alveoli
6.3	Name substances that are exchanged in gas exchange at the alveoli	Oxygen moves into the blood stream and carbon dioxide moves into the alveoli
6.4	How do substances move between the alveoli and bloodstream?	By diffusion
6.6	State the pathway of air from the atmosphere to the blood.	Nose/ mouth → trachea → bronchi → bronchioles → alveoli → blood
6.7	How are lungs adapted for gas exchange?	• breathing moves air in and out • many alveoli • large capillary network around the alveoli • alveoli and capillaries are one cell thick
6.8	How does moving air in and out of the lungs aid the diffusion of gases?	Maintains the concentration gradient
6.9	How does having many alveoli aid the diffusion of gases?	Provides a large surface area
6.10	How does a large capillary network around the alveoli aid the diffusion of gases?	Maintains the concentration gradient
6.11	How does the alveoli and the capillaries being one cell thick aid the diffusion of gases?	Provides a short diffusion path







7. Heart		
7.1	What is the function of the heart?	To pump blood
7.2	Why is the heart described as a double pump?	The right side of the heart pumps blood to the lungs and the left side of the heart pumps blood around the body
7.3	Which blood vessel brings blood back from the body to the heart?	Vena cava
7.4	Which chamber of the heart does blood enter on return from the body?	Right atrium
7.5	Which blood vessel takes blood from the heart to the lungs?	Pulmonary artery
7.6	Which chamber of the heart does blood leave from to go to the lungs?	Right ventricle
7.7	Which blood vessel brings blood back from the lungs to the heart?	Pulmonary vein
7.8	Which chamber of the heart does blood enter on return from the lungs?	Left atrium
7.9	Which blood vessel takes blood from the heart to the body?	Aorta
7.10	Which chamber of the heart does blood leave from to go to the body?	Left ventricle
7.11	What is the function of valves in the heart?	To prevent the backflow of blood
7.11	Where are the cells found that control the natural resting heart rate?	Right atrium
7.12	What is an artificial pacemaker?	An electrical device used to correct irregularities in the heart rate

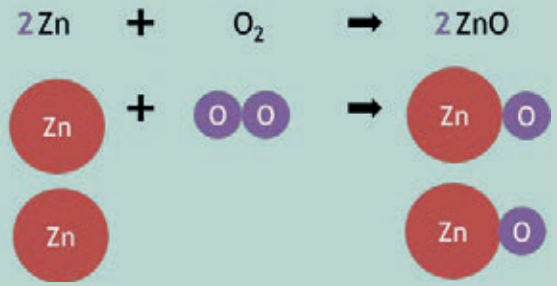
1. Relative Atomic Mass		
1.1	What is relative atomic mass?	A measure of the mass of one atom of a particular element
1.2	What is the symbol for relative atomic mass?	A_r
Practice questions:		
	What is the relative atomic mass of Magnesium?	24
	What is the A_r of Carbon?	12
1.3	What is the relative formula mass of a compound?	The sum of the relative atomic masses of the atoms in the numbers shown in the formula
1.4	What is the symbol for relative formula mass?	M_r
Practice questions:		
	What atoms are in copper sulfate $CuSO_4$?	1x Copper, 1 x Sulfur, 4 x oxygen
	What atoms are in magnesium hydroxide $Mg(OH)_2$?	1x magnesium, 2 x oxygen, 2 x hydrogen
	What is the M_r of hydrogen H_2?	2 x H (A_r = 1) 2 x 1 = 2
	What is the M_r of ammonia HN_3?	1 x H (A_r = 1) + 3 x N (A_r = 14) 1x1 + 3x14 = 43
	What is the M_r of Al_2O_3?	2 x Al (A_r = 27), 3 x O (A_r = 16) 2x27 + 3x16 = 102

2. Percentage composition		
2.1	What is meant by percentage composition in Chemistry?	The percentage by mass of a particular element in a compound
2.2	What is the formula for calculating percentage composition?	$\frac{A_r \times \text{number of atoms of that element}}{M_r \text{ of the compound}} \times 100$
Practice questions		
	Calculate the percentage by mass of carbon in glucose, $C_6H_{12}O_6$	$M_r = (6 \times C) + (12 \times H) + (6 \times O)$ $M_r = (6 \times 12) + (12 \times 1) + (6 \times 16)$ $M_r = 180$ % Carbon = $\frac{12 \times 6}{180} \times 100$ = **40%**
	Calculate the percentage by mass of hydrogen in calcium hydroxide, $Ca(OH)_2$	$M_r = (1x\ Ca) + (2 \times O) + (2 \times H)$ $M_r = (1 \times 40) + (2 \times 16) + (2 \times 1)$ $M_r = 74$ % Hydrogen = $\frac{1 \times 2}{74} \times 100$ = **2.70%**

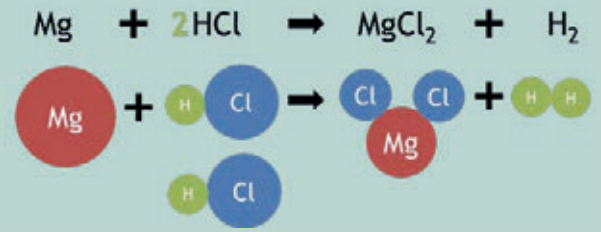
3. Balancing Equations

Worked examples:

Balance this equation by using blob diagrams
$Zn + O_2 \rightarrow ZnO$



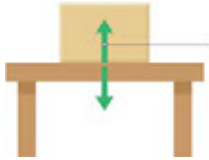
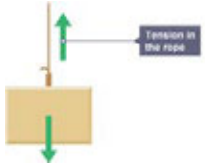
Balance this equation by using blob diagrams
$Mg + 2HCl \rightarrow MgCl_2 + H_2$

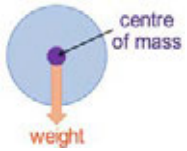


4. Conservation of mass		
4.1	State the law of conservation of mass	No atoms are lost or made during a chemical reaction so the mass of the products equals the mass of the reactants
Practice question:		
	12 g of magnesium ribbon was heated in a crucible. At the end of the reaction 20 g of magnesium oxide had been produced. What mass of oxygen had reacted with the magnesium? $2Mg_{(s)} + O_{2(g)} \rightarrow 2MgO_{(s)}$	8g
4.2	Why will some reactions appear to involve a change in mass?	Because a reactant or product is a gas (the mass of the gas has not been taken into account)
4.3	Why will some reactions appear to decrease in mass?	If a product is a gas and escapes into the atmosphere
4.4	Why will some reactions appear to increase in mass?	If a reactant is a gas and is taken from the atmosphere
Practice question:		
	When Lithium Carbonate is heated, the following reaction takes place: $Li_2CO_{3(s)} \rightarrow Li_2O_{(s)} + CO_{2(g)}$ Does the mass increase, decrease or stay the same? Why?	Decrease because carbon dioxide gas is produced which escapes into the air and so its mass is not taken into account.

5. Uncertainty in Measurements		
5.1	What is the resolution of a measuring instrument?	The smallest change in a quantity being measured that gives a change in the reading that can be seen
	What is the resolution of this mass balance? 	0.01g
5.2	What is the uncertainty of a measuring instrument?	Plus or minus (±) half the smallest scale division
	What is the uncertainty on the mass balance?	± 0.005 g
	A thermometer with intervals of 1°C records the boiling point of a substance as 102°C. What is the uncertainty of this measurement?	102 ± 0.5°C
5.3	What is the uncertainty of a set of repeat measurements?	Plus or minus (±) half the range.
	Find the mean value with uncertainty for the mass of carbon dioxide given off when 1g of limestone reacts with acid. The results were: 0.42, 0.41, 0.38, 0.43 g	Mean = $\frac{(0.42 + 0.41 + 0.38 + 0.43)}{4}$ Mean = 0.41 g Uncertainty = $\frac{0.43-0.38}{2}$ = 0.03 g Mean = 0.41 ± 0.03 g

1. Scalar and Vector Quantities		
1.1	What is a scalar quantity?	A quantity with magnitude (size) only.
1.2	What is a vector quantity?	A quantity with magnitude (size) and an associated direction.
1.3	How are vector quantities represented?	With an arrow.

2. Contact and Non-Contact Forces		
2.1	What is a force?	A push or a pull that acts on an object due to the interaction with another object.
2.2	What is a contact force?	A force that occurs when objects are physically touching.
2.3	What is a non-contact force?	A force that occurs when objects are physically separated.
2.4	Name four examples of contact forces.	Friction, air resistance, tension, normal contact force.
2.5	Name three examples of non-contact forces.	Gravitational force, electrostatic force, magnetic force.
2.6	Is a force a scalar or vector quantity?	Vector because it has magnitude and direction.
2.7	Draw a diagram to show the forces produced when a book is on a table.	
2.8	Draw a diagram to show the forces produced when an object is hung with a rope.	

3. Gravity		
3.1	What is weight?	The force acting on an object due to gravity.
3.2	Why is there a force of gravity close to the Earth?	Due to the gravitational field around the Earth.
3.3	Name two factors which affect the weight of an object.	Mass and gravitational field strength.
3.4	What is the equation used to calculate weight?	Weight = mass x gravitational field strength (W=mg)
3.5	What is the unit of weight (W)?	Newtons (N)
3.6	What is the unit of mass (m)?	Kilograms (kg)
3.7	What is the unit of gravitational field strength (g)?	Newtons per kilogram (N/kg)
3.8	What is meant by an object's centre of mass?	The single point at which the weight of an object is considered to act. e.g. 
3.9	How would you describe the relationship between the weight of an object and the mass of an object?	Directly proportional (as mass increases, weight increases at the same rate). 
3.10	How is weight measured?	Using a calibrated spring-balance (a newtonmeter). 

3. Gravity

Worked example questions:

A ball with a mass of 0.5kg is kicked into the air. The gravitational field strength on Earth is 9.8N/kg. Calculate the weight of the ball.

$W = mg$
$W = 0.5 \times 9.8$
$W = 4.9N$

A bird has a mass of 45g. The gravitational field strength on Earth is 9.8N/kg. Calculate the weight of the bird.

$45g \div 1000 = 0.045kg$
$W = mg$
$W = 0.045 \times 9.8$
$W = 0.441N$

A rock has a mass of 4.5kg. It's weight on Mars is 16.65N. What is the gravitational field strength on Mars?

$W = mg$
$16.65 = 4.5 \times g$
$16.65 \div 4.5 = g$
$3.7N/kg = g$

A goat has a weight of 539N. The gravitational field strength on Earth is 9.8N/kg. What is it's mass?

$W = mg$
$539 = m \times 9.8$
$539 \div 9.8 = m$
$55kg = m$

The following prefixes may be used in calculation questions:

Prefix	Multiplier	Power of ten
giga, G	1,000,000,000	10^9
mega, M	1,000,000	10^6
kilo, k	1,000	10^3
centi, c	1/100	10^{-2}
milli, m	1/1,000	10^{-3}
micro, µ	1/1,000,000	10^{-6}
nano, n	1/1,000,000,000	10^{-9}

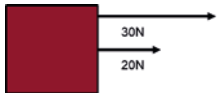
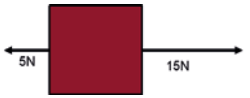
4. Resultant Forces

4.1	What is a resultant force?	A single force that has the same effect as all the original forces acting on an object together.
4.2	How can you calculate the resultant force if more than one force act on an object in the same direction?	Add the forces together.
4.3	How can you calculate the resultant force if more than one force act on an object in different directions?	Subtract the smaller force from the larger force.

4. Resultant Forces

Practice Questions:

For each diagram, determine the resultant force

	30N+20N = 50N to the right.
	15N-5N =15N to the right.
	9N-4N =5N to the left.
	25N-25N = 0N (no resultant force)
	(7N+5N) – 10N = 12N – 10N = 2N to the right.
	(70N+30N) – 50N = 100N – 50N = 50N to the left.
Add your own example:	

5. Work Done and Energy Transfer		
5.1	When is work done on an object?	When a force causes an object to move through a distance.
5.2	What is the equation used to calculate work done?	Work done = force x distance W=Fs
5.3	What is the unit for work done (W)?	Joules (J)
5.4	What is the unit for force (F)?	Newtons (N)
5.5	What is the unit for distance (s)?	Metres (m)
5.6	When is one joule of work done?	When a force of one newton causes a displacement of one metre.
5.7	What will occur If work is done against frictional forces?	A rise in the temperature of the object.

Worked example questions:

A force of 3N acts on an object and causes it to move through a distance of 2m. Calculate the work done.

W = Fs
W = 3 x 2
W = 6J

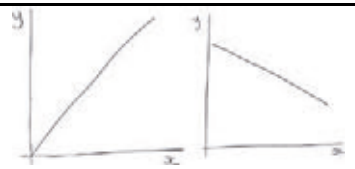
Calculate the force required to move an object 20cm when 40J of work is done.

20 ÷ 100 = 0.2m
W = Fs
40 = F x 0.2
40 ÷ 0.2 = F
200N = F

An object is projected upwards with a force of 9N. 45J of work is done against the gravitational force. How far does the object move?

W = Fs
45 = 9 x s
45 ÷ 9 = s
5m = s

6. Forces and Elasticity (Changing Shape)		
6.1	What are the three ways that you can change the shape of an object?	Stretch it, bend it, compress it.
6.2	What must occur to change the shape of a stationary object?	More than one force.
6.3	Draw a diagram to show the forces that must act to bend an object.	
6.4	Draw a diagram to show the forces that must act to stretch an object.	
6.5	Draw a diagram to show the forces that must act to compress an object.	
6.6	What is deformation?	Changing the shape of an object.
6.7	What is elastic deformation?	When an object is deformed and it returns to its original shape once the forces are removed.
6.8	What is inelastic deformation?	When an object is deformed and it does not return to its original shape once the forces are removed.
6.9	Give an example of elastic deformation.	Elastic band, hairband, spring.
6.10	Give an example of inelastic deformation.	Bending a pencil, stretching a piece of blue tack, squashing a piece of plasticine.

7. Forces and Elasticity (F=ke)		
7.1	What is meant by the spring-constant of a spring?	How difficult it is to extend or compress an elastic object (the larger the spring constant, the more force required).
7.2	Which spring will have a greater spring constant, a trampoline spring or a pen spring? Why?	A trampoline spring as it is stiffer. It is more difficult to extend/compress it. More force is required to extend/compress it by the same amount.
7.3	What is the equation used to calculate the force required to extend/squash a spring?	Force = spring constant x extension F=ke
7.4	What is the unit for force (F)?	Newtons (N)
7.5	What is the unit for spring constant (k)?	Newtons per metre (N/m)
7.6	What is the unit for extension/compression (e)?	Metres (m)
8. Forces and Elasticity (Describing Relationships)		
8.1	What is a linear relationship?	A straight-line relationship between two variables.
8.2	Draw two sketch graphs to show two examples of linear relationships.	
8.3	What is a non-linear relationship?	A relationship between two variables that does not give a straight-line (it gives a sloping line).
8.4	Draw two sketch graphs to show two examples of non-linear relationships.	
8.5	Do springs show a linear or non-linear relationship between force and extension?	Linear.
8.6	What is a directly proportional relationship?	A type of linear relationship where the line passes through zero.

7. Worked example questions:

How much force is needed to pull a spring with a spring constant of 20 N/m a distance of 0.5m?

$F = ke$
$F = 20 \times 0.5$
$F = 10N$

How much force is needed to pull a spring with a spring constant of 20 N/m a distance of 25cm?

$25 \div 100 = 0.25m$

$F = ke$
$F = 20 \times 0.25$
$F = 5N$

What is the spring constant of a spring if 40N of force is required to extend it by 1.6m?

$F = ke$
$40 = k \times 1.6$
$40 \div 1.6 = k$
$25N/m = k$

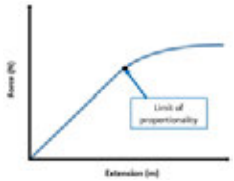
A force of 4N is applied to a spring with a spring constant of 2N/m. By how much does it extend?

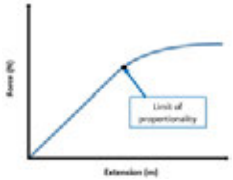
$F = ke$
$4 = 2 \times e$
$4 \div 2 = e$
$2m = e$

A force is applied to a spring of length 2m is stretched. A force of 10N is applied to the spring with a spring constant of 2.5N/m. What is the new length of the spring?

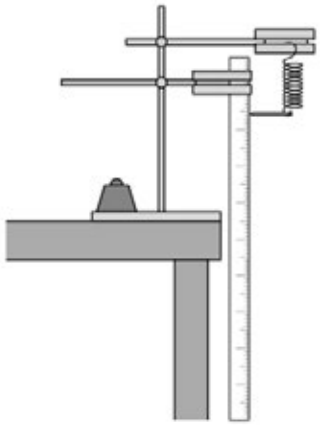
$F = ke$
$10 = 2.5 \times e$
$10 \div 2.5 = e$
$4m = e$

extension = new length - original length
$4 =$ new length $- 2$
$4 + 2 =$ new length
$6m$

8. Forces and Elasticity (Describing Relationships)		
8.7	How would you describe the relationship between the extension of an elastic object and the force applied to the object?	Directly proportional (as force increases, extension increases at the same rate) provided that the limit of proportionality is not exceeded. 
8.7	What will happen to an elastic object if it reaches the limit of proportionality?	It will inelastically deform.
8.9	Draw a sketch graph to show the relationship between the extension of an elastic object and the force applied to the object.	

9. Forces and Elasticity (Force and Extension Investigation)		
9.1	What does the gradient of this graph tell you? 	The spring constant.
9.2	How would you measure the extension of a spring when a force is applied?	1. Measure the original length of the spring. 2. Hang a mass onto the spring. 3. Measure the new length of the spring. 4. Find the difference between the original length and new length.
9.3	What is the purpose of the splint in this practical?	To accurately measure the length of the spring against the ruler.

10. Forces and Elasticity (Work Done Stretching or Compressing a Spring)		
10.1	When a force stretches/compresses a spring, what store of energy is stored in the spring and why?	Elastic potential energy because the spring does work.
10.2	Describe the relationship between the work done on the spring and the elastic potential energy in the spring.	Provided the spring is not inelastically deformed, the work done on the spring and the elastic potential energy stored are equal.
10.3	What is the equation to calculate the energy in the elastic store?	Elastic energy store = 0.5 x spring constant x extension^2 ($E_e=½Ke^2$)
10.4	What is the unit for spring constant?	Newtons/metre (N/m)
10.5	What is the unit for extension?	Metres (m)
10.6	How is the extension of a spring measured?	extension = extended length - original length



1. ¿Llevas una dieta sana? (Do you have a healthy diet?)	
Llevo una dieta sana	I have a healthy diet
Me gusta (bastante/ mucho) el pan	I (quite/ really) like bread
Me gustan las galletas	I like biscuits
No me gusta(n) (nada)…	I (really) don't like… (at all)
el arroz	rice
el pan	bread
el pollo	chicken
el pescado	fish
la carne	meat
la ensalada	salad
la pasta	pasta
la pizza	pizza
los caramelos	sweets
los huevos	eggs
los pasteles	cakes
las galletas	biscuits
las verduras	vegetables
Como/ Comí verduras	I eat/ ate vegetables
Bebo/ Bebí agua	I drink/ drank water

2. ¿Con qué frecuencia comes pescado? (How often do you eat fish?)	
Lo/La como…	I eat it…
Los/Las como…	I eat them…
tres veces al día	three times a day
cada día/ todos los días	every day
dos veces a la semana	twice a week
los fines de semana	at weekends
una vez al mes	once a month
muy a menudo	very often
a veces	sometimes
de vez en cuando	from time to time
(Casi) nunca lo/la como	I (almost) never eat it.
(Casi) nunca los/las como	I (almost) never eat them.

3.¿Qué haces para estar en forma? (What do you do to keep fit?)	
Me gusta mucho hacer deporte	I really like doing sports
Hago artes marciales	I do martial arts
Hago atletismo	I do athletics
Hago footing	I do jogging
Hago gimnasia	I do gymnastics
Hago natación	I go swimming
Juego al baloncesto	I play basketball
Juego al ping-pong	I play table tennis
Juego al rugby	I play rugby
Juego al tenis	I play tennis
Juego al voleibol	I play volleyball
Juego a la pelota vasca	I play pelota (Basque ball game)
… en el parque	… in the park
… en el gimnasio	… in the gym
Voy al polideportivo	I go to the sports centre
Soy miembro de un club	I belong to a club
Voy a clases de baile	I go to dance classes
Prefiero jugar al fútbol	I prefer playing football
Es mi deporte preferido	It is my favourite sport
Empecé (a jugar)… a los (diez) años	I started (playing)… at the age of (ten)
Voy a empezar a (hacer)…	I am going to start (doing)…

4.¿Cuál es tu rutina diaria? (What is your daily routine?)	
me despierto (muy temprano/ a las siete)	I wake up (very early/ at 7 o'clock)
me levanto (enseguida)	I get up (straight away)
me lavo los dientes	I brush my teeth
me ducho	I shower
me visto	I get dressed
me acuesto	I go to bed
desayuno	I have breakfast
meriendo	I have an afternoon snack
ceno (...)	I have (... for) dinner
salgo (a correr)	I go out (running)
corro (veinte kilómetros)	I run (twenty kilometres)
entreno	I exercise/ train
voy al insti/ trabajo	I go to school/work

6.¿Qué tal estás? (How are you?)			
¿Qué te duele?	What hurts?	Tengo catarro	I have a cold
¿Te duele el estómago?	Does your stomach hurt?	Tengo náuseas	I feel sick/ nauseous
Me duele el brazo/ el estómago/ el pie	My arm/ stomach/ foot hurts	Tengo quemaduras de sol	I have sunburn
Me duele la cabeza/ la espalda/ la garganta	My head/ back/ throat hurts	Tengo tos	I have a cough
Me duele la mano/ la pierna	My hand/ leg hurts	Estoy cansado/a	I'm tired
Me duelen los dientes	My teeth hurt	Estoy enfermo/a	I'm ill
Me duelen los oídos	My ears hurt/ I have earache	No me encuentro bien	I don't feel well
Me duelen los ojos	My eyes hurt		

Knowledge Builder:

Easter vocabulary

Easter in Seville

Valentine's Day vocabulary

5. Consejos para estar en forma (advice for keeping fit/in shape)			
Para estar en forma...	To keep fit/ in shape...	No se debe...	You/ One must not...
Se debe...	You/ One must...	beber alcohol	drink alcohol
beber agua frecuentemente	drink water frequently	beber muchos refrescos	drink lots of soft drinks
comer más fruta y verduras	eat more fruit and vegetables	comer comida basura	eat junk food
comer menos chocolate/ caramelos	eat less chocolate/ fewer sweets	fumar	smoke
dormir ocho horas al día	sleep for eight hours a day	Soy adicto/a al/ a la/ a/ los/ a las...	I am addicted to...
entrenar una hora al día	train for one hour a day	A partir de ahora, voy a...	From now on, I am going...

Use Quizlet to practice learned and new more challenging vocabulary.

Youtube is a great source of learning for Spanish. Watch the video about Easter in Seville and create a poster to advertise it.

Use Valentine's Day vocabulary from Quizlet to create a valentines card in Spanish. Listen to the most famous Spanish love song "Bésame mucho". Can you translate the lyrics?

Mis derechos	My rights
Tengo derecho a	I have the right to
al amor y a la familia	to love and family
al juego	to play
a la educación	to education
a la libertad de expression	to freedom of expression
a vivir en harmonía	to live in harmony
dar mi opinion	give my opinion
salir solo/a	go out alone
dormir	sleep
ir al instituto	go to school
jugar con mis hermanos	play with my siblings
respirar	breathe

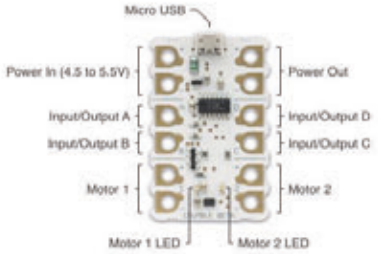
Nacionalidades	Nationalities
boliviano/a	Bolivian
colombiano/a	Colombian
mexicano/a	Mexican
norteamericano/a	North American
inglés/inglesa	English
español (a)	Spanish
paquistaní	Pakistani

Reciclamos	Let's recycle
Para proteger el medio ambiente…	In order to protect the environment…
Se debería…	You/we should…
ahorrar energía en casa	save energy at home
apagar la luz	turn off the light
cerrar el grifo	trun off the tap
conserver agua	save water
desenchufar los aparatos eléctricos	unplug electrical devices
ducharse en vez de bañarse	have a shower instead of a bath
ir en bici(cleta)	go by bike
reciclar el papel / el plástico /el vidrio	recycle paper / plastic / glass
usar transporte público	use public transport
No se debería…	You / We shouldn't…
malgastar el agua	waste water
tirar la basura al suelo	throw rubbish on the ground
usar bolsas de plástico	use plastic bags

Mi ciudad antes	My city before
Antes…	Before…
era aburrida	it used to be boring
era peligrosa	it used to be dangerous
estaba sucia	it used to be dirty
había mucha basura	there used to be a lot of rubbish
había mucha violencia	There used to be a lot of violence
no había medios de transporte público	there didn't used to be means of public transport
no había nada para los jóvenes	the didn't used to be anything for young people

Mi ciudad ahora	My city now
Ahora	Now
está limpia	it is clean
hay menos basura	there is less rubbish
hay menos contaminación	there is less pollution
hay parques y espacios públicos muy bonitos	there are very nice parks and public spaces
hay una red de transporte muy buena	there is a very good transport network
hay muchas cosas para los jóvenes	there are lots of things for young people
no tiene barrios peligrosos	it doesn't have dangerous neighbourhoods

1. Metals & Alloys		
1.1	ferrous	This group of metals all contain iron (ferrite) and are magnetic.
1.2	non-ferrous	This group of metals do not contain iron and are not magnetic.
1.3	alloys	Alloys are a mixture of at least one pure metal and another element.
1.4	aluminium	High strength to weight ratio. Used to manufacture aircraft, car body panels and many other items.
1.5	copper	Ductile and malleable. Used to manufacture plumbing supplies and electrical cable.
1.6	mild steel	Tough and ductile. Commonly used in construction.
1.7	high carbon steel	Less ductile than mild steel but harder. Commonly used to manufacture tools.
1.8	riveting	Riveting is a semi-permanent and non-thermal joining method that involves using a mechanical fastener/rivet (a metallic part with a dome-shaped head) to join sheet metal parts.
1.9	ball peen hammer	It has two heads, one flat and the other, called the peen, rounded. The peening face is used for rounding off rivets.



Crumble controller

Crumble kits

Coat Hook


Sparkles


Set & Snap Tool


Snaphead Rivet


Cross & Draw Filing


Ball peen Hammer


Cordless Drill


Countersink

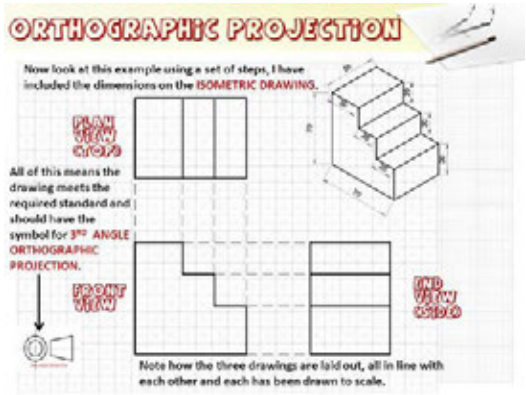
2. Programmable Components - Crumble kits		
2.1	sequence	How code is run in order from top to bottom, running each line in turn.
2.2	input & output	Something taken in, or received by the processor/program, or something put out by the processor/program.
2.3	Crumble	The Crumble is an easy-to-use programmable controller produced by Redfearn Electronics to teach KS3 D&T in schools.
2.4	Scratch	The Crumble software is Inspired by MIT Scratch, programs are simply built by snapping blocks together on screen.
2.5	Sparkles	The Sparkle is one of the most popular and satisfying Crumbs (components) for the Crumble. It is an easy-to-use RGB LED, and as such, allows a variety of different colours to be produced.
2.6	ldr	The light-dependant resistor (LDR) is a type of input device, which can be used to monitor light levels. Its resistance changes depending on the amount of light.

Redfearn Crumble:
YouTube video- Getting started with programming

CAD/CAM used by the Royal Navy:
Take a 'virtual' tour as a design engineer aboard HMS Astute

KS3 D&T BBC Teach:
Short film clip exploring the process of laser cutting.

Orthographic Projection:
Introduction to Third Angle Orthographic Drawing



An orthographic projection is a way of representing a 3D object by using several 2D views of the object.

Stretch your vocabulary- STEM Symbols

Sequence – How your code is run in order from top to bottom, running each line in turn.

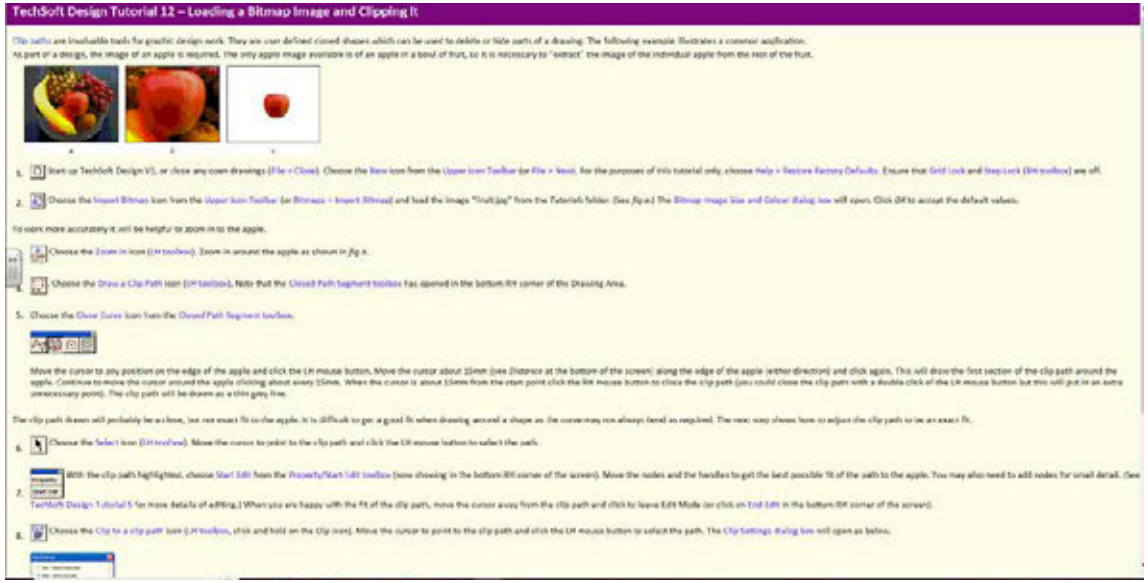
Input and Output – Something taken in, or received by the processor/program, or something put out by the processor/program, often having a visible/audible effect.

Repetition (Iteration) – Instead of writing out the same code again and again, you can repeat chunks of it.

Selection – You may only want certain blocks of code to run if something happens (when a condition is met).

Variable – Something given a name that has a value which can change e.g. testResults = pass or X = 42 etc.

Stretch your CAD skills- Bitmap Image Editing Tutorial

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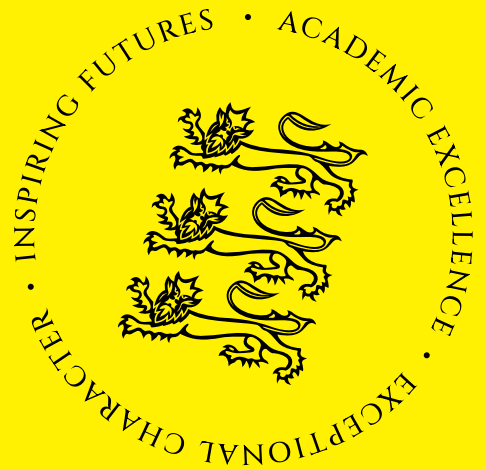
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Minimum Stationery Requirements