



Yate Academy

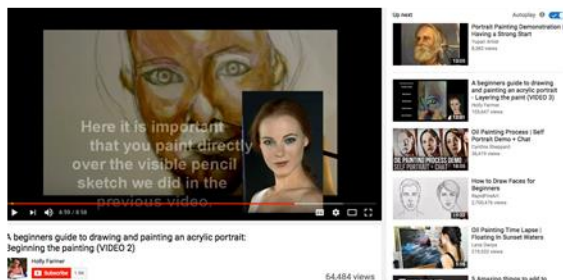
High Expectations, High Achievement

Year 9

Knowledge Organisers

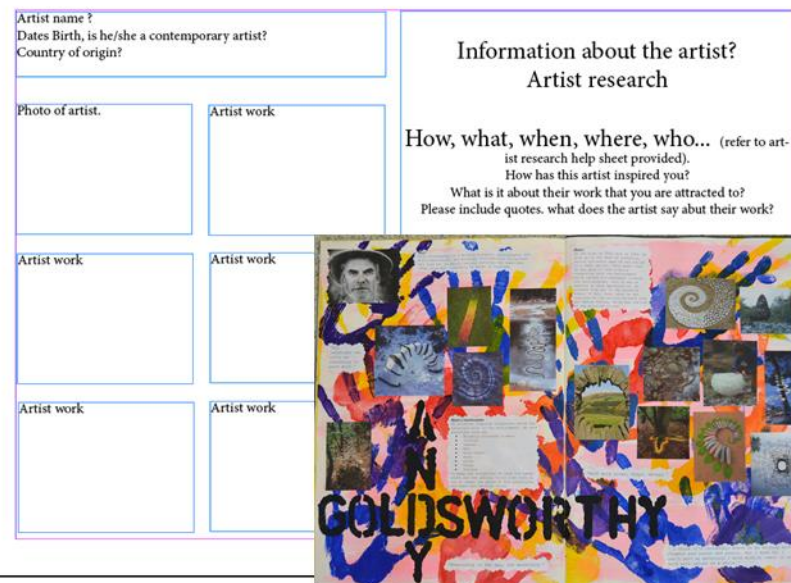
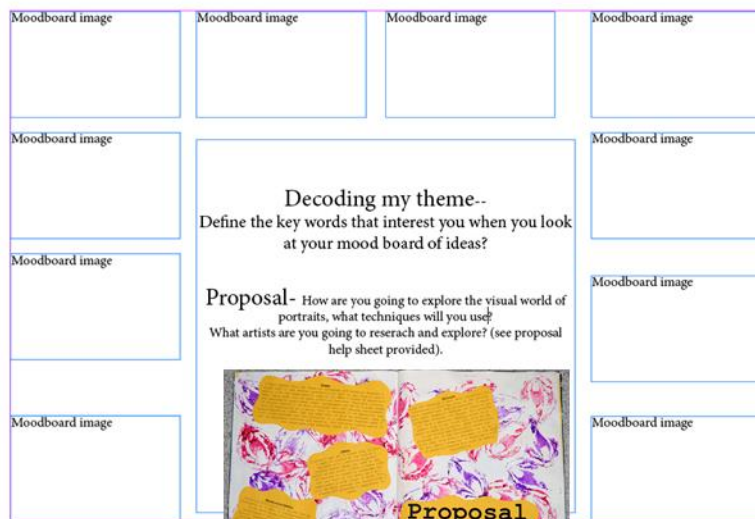
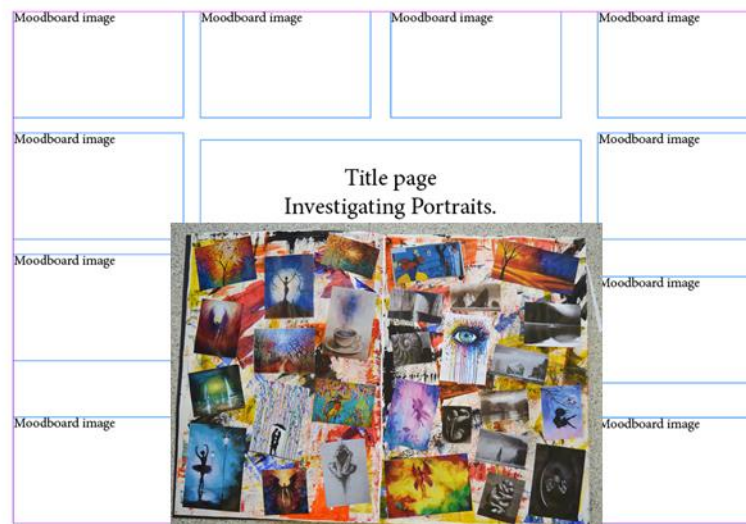
Module 4

“AQA Yr 9 Art Fine GCSE. Investigating and research . Investigating Portraits, A01 Module 4 Organiser



Painting skills:

Learners will use the (Youtube resources, A beginners guide to drawing and painting an acrylic portrait, by Holly Farmer) This will enable them to teach themselves the skill of mixing and applying skin tone to create a successful portrait painting.



Year 9 Construction

Module 4 Knowledge Organiser – Unit 2 Practical Construction Skills

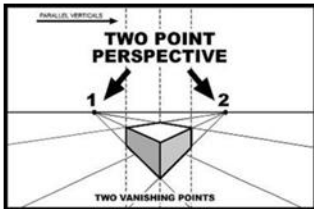
HOUSE STYLES

TRADITIONAL - something that is in keeping with long-standing tradition, style or custom.

CONTEMPORARY - "existing, occurring, or living at the same time; belonging to the same time." And that is exactly the same for the use of the term in interior design. **Contemporary** design refers to what is popular or used right now.

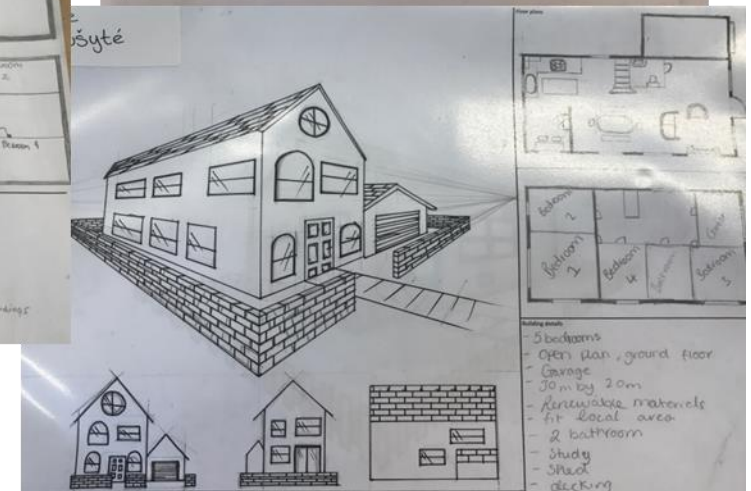
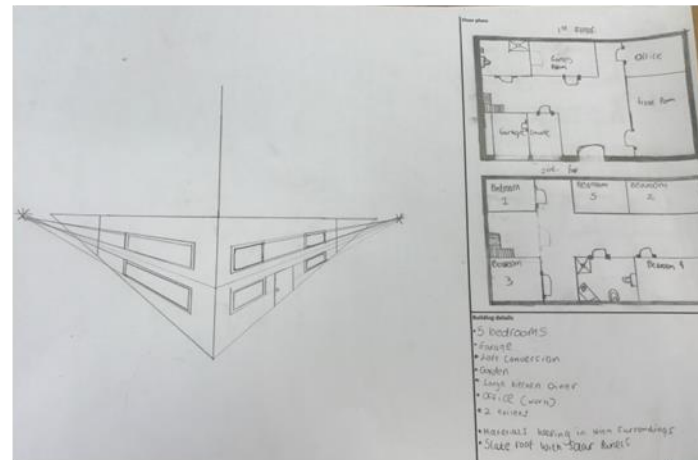
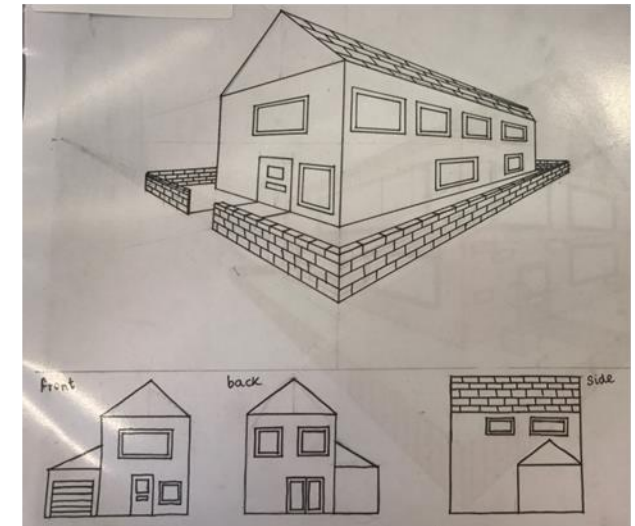
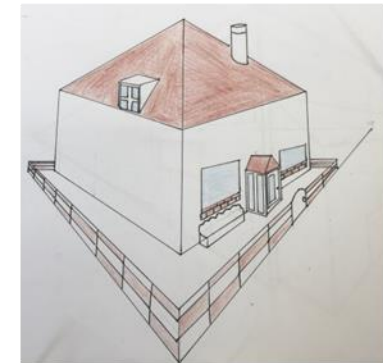
2 POINT PERSPECTIVE

Definition of two-point perspective. : linear perspective in which parallel lines along the width and depth of an object are represented as meeting at **two** separate **points** on the horizon that are 90 degrees apart as measured from the common intersection of the lines of projection.



USEFUL TUTORIALS CAN BE FOUND ON YOUTUBE

FLOOR PLAN - a scale diagram of the arrangement of rooms in one storey of a building.



Year 9 Crafts- Development of Design Proposals & Making

Module 4 Knowledge Organiser

Modelling:

- Model your idea in cheap, easy to use materials (Lego, card, MDF). The model should show how the parts fit together and may only show a part you need to work out.
- Photograph it and explain what you have found out from the model. It may be you have changed how it fits together, how to make parts, sizes etc. "From my modelling I have found out...."



Part name	Material	Sizes	Quantity needed	Notes
Stand 1	Aluminium	Rod	n/a	12 (Diameter) 300
Stand 2	Aluminium	Rod	n/a	12 (Diameter) 250
Stand 3	Aluminium	Rod	n/a	12 (Diameter) 200
Base	Plywood	Sheet	n/a	16 130x130
Leaf sheets	Polypropylene	Sheet	Clear Green Yellow	n/a 130x130
Speaker	n/a	Standard component	n/a	16 8x40
Speaker frame	Acrylic	Sheet	Clear Green Yellow	3 80 x 80
Stand nuts	Aluminium	Rod	n/a	12 (Diameter) 40

Now that I have given my design proposals, I have created a cutting list so I know what to cut out and the quantity I need, displayed clearly. This is to ensure that my project runs as smoothly as possible with no potential time delays. I have created templates similar to the sheet I will need to cut to ensure this task is done with accuracy. Also, these templates can be recreated for use on the laser cutter to minimise waste materials and save time when cutting.

Importance of a cutting list:

A cutting list is important within my project because it keeps my product organised and ensures that I do not waste time or materials during the manufacturing of my product. Due to this, I should have a smooth manufacturing process.

Materials order and costing:

Objective: To specify materials to be ordered.

- Show a list of materials and components you will need to produce your prototype (first one you make).
- Remember to include all components (parts purchased to make the design).
- For materials which need to be cut for you to use list them using the cutting list table below (printed copies are available). You may need to add more lines to include all the materials.

Part name	Material	Sizes	Quantity needed	Notes

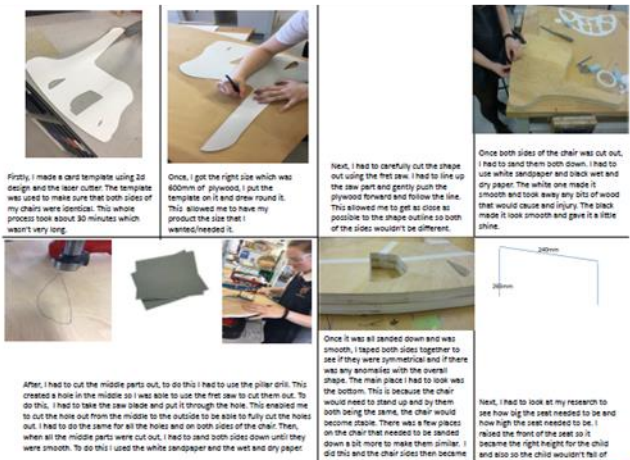
Top marks: The design has potential to be **commercially viable** and is suitable for the target market

Final Design drawings:

Objective: To show a detailed, possible, final design.

- Show your design in detail, including exploded views, sections and detailed views.
- Remember to show how the parts fit together and show materials.
- The drawing should be clear, well presented and in colour.

Top marks: The design proposal needs to have enough information for someone else to be able to manufacture the idea.



Making diary:

Objective: To show how the product was made and demonstrate our skills.

- Show the processes you are using to make your design. This page (or pages) will be a series of photographs taken as you work with notes to explain what you have done.
- As this is done whilst making you should use time at home to write up what you have done and use lessons in the workshop to complete the practical work.

Scripted Key Skills

Learning Lines

You can learn lines through repetition. Record and listen back, practise out loud, quiz yourself and Practise, practise, practise!

Action and Objective

Breaking up the text into small sections of character motivations and direction to create texture and realism

Thought Track

A characters private thoughts

Still Image

A still picture of a scene often used to mark a moment during a thought track or cross cut scene

Cross Cut

The stage is split into two showing contrasting scenes

Monologue

One character delivering a speech to the audience

Duologue

Two characters on stage during a scene

Physical Theatre

The use of physical movement to communicate meaning, often symbolically, to the audience

Ensemble

Working in a creative and co-operative group towards performance

Year 9 Drama **Knowledge Organiser**

Theatre Practitioner ***Berlot Brecht*** ***(1898 – 1956)***

He created the Distancing effect using the following skills:

- Narration
- Use of projections and signs
- Harsh / bright lighting
- Speaking stage directions
- Multi Roles
- Visible scene changes
- Breaking the forth wall
- Spass (Silly Comedy)
- Minimal sets / costumes
- Songs interrupting the action

Theatre Practitioner ***Stanislavski*** ***(1863 – 1938)***

He created the Naturalism approach to acting using the following skills:

- The 'System' Technique
- Emotion Memory
- Actioning
- Given Circumstances
- Magic If
- Physical Action
- Creating the Forth Wall
- Improvisation
- Emotional connection for the audience

Characterisation

- **Body Language:** The way the actor uses posture, stance and gestures to communicate meaning.
- **Facial Expressions:** The use of expression to communicate emotions for the character on the face.
- **Voice:** The way the actor uses pitch, tone, volume and accent to communicate character and meaning for the audience.
- **Movement:** The use of pace, staging, space and levels

Btec First Award in Engineering Module 4 Knowledge Organiser

– UNIT 1 THE ENGINEERED WORLD EXAM PREPARATION.

What is Engineering?

"the branch of science, maths and technology concerned with solving problems through the design, manufacture, evaluation of solutions."

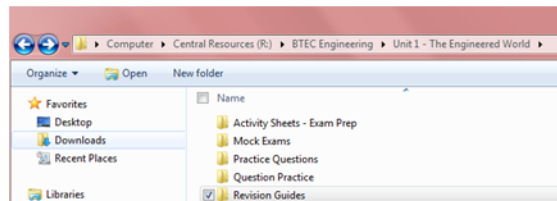
Applications of Engineering

- Buildings
- Engines
- Machines
- Structures

Engineering Sectors

Aerospace	The design, development and manufacture of products through flight.	Aeroplanes, Helicopters
Automotive	The design, development and manufacture of vehicles.	Cars, Motorbikes, Lorries
Biomedical	The development of devices and procedures that solve medical problems.	Hip Replacements, prosthetic legs
Chemical	The design, processing and manufacture of equipment for the chemical industry and chemical products	Petrol, Diesel, Bleach, Medicines
Communication	The way information is used around the globe.	Mobile Phones, Social Media, Sat Nav
Electrical	The design, developments and manufacture of electrical products.	Television, Games Console, Laptop
Mechanical	The design, manufacture and testing of machines and other mechanical devices.	Engines, Machines, Gearboxes

UNIT 1 EXAM RESOURCES



PAPER COPIES OF REVISION GUIDES AND PAST PAPERS CAN BE FOUND IN THE CUPBOARDS IN G24.



CASTING

an object made by pouring molten metal or other material into a mould.



FORGING

make or shape (a metal object) by heating it in a fire or furnace and hammering it.



Processes	Examples	Description	Examples	Advantages
Machining	<u>TURNING</u>	Uses a <u>LATHE</u> a <u>CYLINDRICAL SHAPE</u> . Materials are <u>ROTATED</u> at speed and <u>MACHINED</u> into shape.		
	<u>MILLING</u>	<u>REMOVES EXCESS</u> material using a <u>ROTATING CUTTER</u> . Materials are <u>CLAMPED</u> . <u>HORIZONTAL / VERTICAL</u> types.		
	<u>DRILLING</u>	Creates <u>CIRCULAR HOLES</u> . Uses a <u>DRILL BIT</u> . Good outcome = <u>SHARP CUTTING EDGE</u> tools.		
Forming	<u>CASTING</u> • SAND • INVESTMENT • DIE	<u>POURING / INJECTING LIQUID METAL</u> into a <u>MOULD</u> . Mould has a <u>CAVITY</u> to create the shape of the final product. Metal <u>COOLS</u> and <u>SOLIDIFIES</u> . Casting is removed from mould.	WHEELS CAR PARTS MAN HOLE COVERS TOY CARS	<ul style="list-style-type: none"> • <u>INTRICATE SHAPES</u> can be made. • <u>GOOD SURFACE FINISH</u> • <u>LITTLE/NO WASTE</u>
	<u>FORGING</u> • DROP • PRESS • UPSET	Metal being <u>HEATED UP</u> and <u>SHAPED</u> by <u>PLASTIC DEFORMATION</u> . Applying <u>SQUEEZING FORCES</u> e.g. <u>HAMMER BLOWS – POWER PRESS</u>	BOLT HEADS LANDING GEAR ENGINE CAM SHAFT	Improves the <u>PHYSICAL PROPERTIES</u> – changing the <u>GRAIN FLOW</u> to improve <u>STRENGTH, TOUGHNESS</u> and <u>DUCTILITY</u> .

Plot

- **Act 1:** The family are celebrating Sheila and Gerald's engagement. Birling makes speeches saying there will be no war, and the Titanic is unsinkable. An Inspector arrives and tells them Eva Smith has committed suicide. He gets Mr B to admit sacking her. He doesn't take blame. Inspector gets Sheila to admit getting her sacked for laughing. She feels guilty and ashamed of herself.
- **Act 2:** Inspector gets Gerald to admit having an affair with Eva Smith (now called Daisy Renton after a name change). Sheila is upset and questions her relationship with Gerald. Inspector gets Mrs B to admit not helping Eva when she came to Mrs B's charity for help when she became pregnant. Mrs B says it should be the father's responsibility. At the end of the Act, we realise that the father of Eva's baby was Eric.
- **Act 3:** Eric's involvement with Eva is revealed and a possible rape is hinted at, as he says he forced Eva. The Inspector gives his final speech about fire, blood and anguish. He is warning the family that if they don't start to take responsibility for others, they will live to regret it. Inspector then leaves. Gerald finds out that the Inspector wasn't a real inspector. Mr B rings to check and there is no Inspector Goole. Also, there is no dead girl! Mr and Mrs B (and Gerald) celebrate and act like nothing has happened. Sheila and Eric still feel guilty and can't go back to how they were before. Right at the end, the telephone rings and they are told that a girl has just committed suicide and an inspector is on his way over to ask some questions.

Characters

- **Mr Birling:** Arrogant and Capitalist businessman who hates social equality and loves money. Sacks Eva from his factory when she asks for equal pay for women and threatens a strike.
- **Mrs Birling:** Snobbish and cold-hearted Capitalist who believes everyone is responsible for themselves. Doesn't help Eva when she comes to the charity for help.
- **Inspector Goole:** Priestley's mouthpiece (represents JBP's ideals), keen Socialist who fights for community responsibility and gets the Birlings to face up to what they have done.
- **Sheila Birling:** The daughter. Gets Eva sacked from the shop for smirking at her. Starts off as a spoilt rich girl but quickly changes her views, feels sorry for Eva Smith and starts to become Socialist as the play progresses. Is ashamed of her parents at the end.
- **Eric Birling:** The son. Drinks too much and has a one-night stand with Eva. Ends up getting her pregnant and steals from his dad to give Eva money. Regrets his actions and changes his ways. Ashamed of his parents at the end.
- **Gerald Croft:** Sheila's fiancé. Businessman who has Capitalist ideals and is similar to Mr Birling politically. Shows some regret for his affair with Eva, but happy to act like nothing has happened when it suits him.
- **Eva Smith:** A young working class woman, who is exploited by wealthy, middle class people. She is presented as a very innocent and vulnerable character and is used to represent the powerlessness of the working class. She is attractive, honourable and she is forced to become a prostitute.

Themes

GENERATION / RESPONSIBILITY / JUSTICE/ GENDER / SOCIAL CLASS/ INEQUALITY

Context

- **1912** – when the play was set. Just before WW1 and the sinking of the Titanic. JBP wanted to make sure audiences in 1945 recognised the problems in society in 1912 before the wars (class system, Capitalism, sexism) and weren't tempted to go back to living like that. He wrote the play to highlight the dangers of the Capitalist lifestyle.
- **1945** – when the play was written and performed. After WW2, society changed for the better. The benefit system started to be introduced, and we had more equality for women and less of a class divide because of different classes and different genders mixing in the war effort. JBP supported and encouraged these changes and wanted to make sure he promoted them in his play by making Capitalists like the older Birlings appear ignorant and selfish.
- **Socialism** – JBP was a keen socialist. This meant that he wanted everyone to look after each other rather than just caring about themselves. He was trying to promote this with the play, by making the Socialist characters like the Inspector much more respectable than the Capitalist ones. JBP uses the Inspector as a mouthpiece for this.
- **Capitalism** – JBP hated Capitalists – those who thought that everyone should only care about themselves and that making money was more important than human rights. He created Mr and Mrs Birling as Capitalists, in order to make Capitalism seem out-dated and selfish. Mr and Mrs B are portrayed in a negative way by JBP for this reason.
- **Class/social mobility** – In 1912, the social classes were segregated, women got paid less than men for the same work, there was no benefit system or help with unemployment or housing. Society was patriarchal (men ruled).
- **Family life and gender** – Men expected to support the perfect family and protect women. Wealthy middle class women were expected to marry into money and plan parties and have children. No housework. Children were expected to be obedient and unquestioning.
- **Stereotypes** – the men and women start out as stereotypes. Women: shopping, clothes, weddings, protected, jealous, hysterical. Men: Work, duty, hero, womanising, drinking. By the end, the stereotypes are reversed – Sheila and Eric get stronger. The others get weaker.

Vocabulary

- Dramatic Irony
- Tension / suspense
- Monologue
- Capitalist
- Socialist
- Interruptions
- Metaphor
- Triplets / list of three
- Stage Directions
- Patriarchy/patriarchal
- Contrast
- Direct Address
- Priestley's Mouthpiece
- Repetition
- Playwright
- Audience
- Noun/verbs/adjectives etc
- Imperatives
- Interrogatives
- Exclamatory
- Declarative
- Colloquial language
- Metaphor
- Omniscient
- Euphemism
- Imagery
- Setting
- Hierarchy

Key quotes – character

Mr B: 'Hard-headed business man who has to look after himself and his own'
 'I refused, of course'
 'The famous younger generation...and they can't even take a joke'

Mrs B: 'A rather cold woman and her husband's social superior'
 'Girls of that class'
 'In the morning they'll be as amused as we are'

IG: 'Millions and millions of Eva Smiths and John Smiths...we are responsible for each other'
 'They will learn in fire and blood and anguish'
 'Burnt her insides out of course'

Key quotes - theme

Eric: 'Not quite at ease, half-shy, half-assertive'
 'I was in the sort of state where a chap easily turns nasty'
 'The money's not the important thing'

Gerald: 'We're respectable citizens and not criminals you know'
 'Easy well-bred young man-about-town'
 'What about this ring'

Sheila: 'very pleased with life and rather excited'
 'You mustn't try to build a kind of wall between us and that girl. If you do, the Inspector will just break it down'
 'It frightens me the way you talk'

Year 9 – Hospitality and Catering :Module 4 Knowledge Organiser

Intro to Sauces

The main functions of a sauce are to add flavour, colour, moisture (texture) and additional nutrients.

They can be added as an extra to a meal e.g. apple sauce with roast pork or horseradish sauce with roast beef...

or mixed in with a dish e.g. cheese sauce with macaroni to make 'macaroni cheese'.

There are several types of sauces and they can be classified depending upon the way in which they are thickened:

- with coagulating egg protein such as custard
- emulsification, e.g. mayonnaise
- with vegetable or fruit puree such as tomato sauce / apple sauce
- with starch – these can be white or brown sauces with gelatine, e.g. glaze on a flan.

Gelatinisation

Many sauces are thickened by gelatinisation of starch. When mixed with a liquid and heated, starch thickens the liquid.

During gelatinisation the following occurs:

1. starch particles form a suspension in the liquid (they do not dissolve)
2. Stirring the liquid keeps the starch particles suspended – if the suspension isn't stirred they stick together and sink to the bottom – forming lumps. This will then not cook correctly.
3. When the liquid reaches approximately 60°C the starch grains begin to swell as they absorb the water.
4. As heating continues (approx 80°C) the particles break open and release starch. This makes the mixture thick and viscous. This is gelatinisation.

The Roux Method

The fat is melted and the flour is then stirred in and cooked on a medium heat. The liquid is added gradually off the heat. The sauce is then returned to the heat and brought back to the boil.

Sauces covered this module include -

Stock

A Stock is a liquid that has been formed by extracting flavours, nutrients and salts during the cooking process from bones, vegetables and herbs and spices. They should be: Clear in appearance, delicate in flavour and clear of grease

Mayonnaise:

Mayonnaise is a thick, creamy dressing often used as a condiment. It is a stable emulsion of oil, egg yolk, and either vinegar or lemon juice, with many options for embellishment with other herbs and spices

Bolognese Sauce:




Tomato-based and mixed with herbs and garlic. Used in spaghetti Bolognese and lasagna.

Lemon Curd:

A thick conserve made from lemons, butter, eggs, and sugar.

Chocolate Sauce



Pouring	Coating	Binding
A pouring sauce, at boiling point, should just glaze the back of a wooden spoon, and should flow freely when poured.	A coating sauce, at boiling point, should coat the back of a wooden spoon, and should be used as soon as it is ready, to ensure even coating over the food.	A binding sauce should be thick enough to bind dry ingredients together, so that they can be handled easily to be formed into croquettes, cakes etc
		

Modifying sauces

Modifying sauces is easily done...

- using different milks e.g. replace full fat milk with semi skimmed resulting in a reduced fat product
- adding different herbs for additional colour and flavour e.g. parsley,
- sweetening the sauce – add sugar
- enriching the sauce – add cheese (also adds colour)
- altering the flavour – add chocolate (also sweetens the sauce)

FRENCH YEAR 9 MODULE FOUR (MRS TWINBERROW): DE LA VILLE À LA CAMPAGNE - MO 1 – 10 : (KPI 1 Know the key vocabulary for the module)

Où j'habite J'habite ... Ma famille et moi habitons ... On habite ... dans une ville historique/touristique dans un petit village au bord de la mer au centre-ville à la campagne/montagne en ville en Angleterre/Écosse/Irlande (du Nord)/ Afrique au Maroc/pays de Galles aux Antilles à Paris/Birmingham	Where I live I live ... My family and I live ... We live ... in an historic/touristy town in a small village at the seaside in the town centre in the countryside/mountains in town in England/Scotland/(Northern) Ireland/Africa in Morocco/Wales in the West Indies in Paris/Birmingham	dans le nord-est du/de la/de l'/des ... le nord/le nord-est l'est/le sud-est le sud/le sud-ouest l'ouest/le nord-ouest Dans ma région, il y a ... des vignobles/stations de ski des collines/forêts des fermes/champs un port de pêche un lac C'est super parce qu'en hiver/en été, on peut (faire du ski/de l'escalade).	in the north-east of ... north/north-east east/south-east south/south-west west/north-west In my region there is/are vineyards/ski resorts hills/forests farms/fields a fishing port a lake It's great because in winter/summer, you can (go skiing/climbing).
Le temps Il fait beau/mauvais. Il fait chaud/froid. Il y a du soleil. Il y a du brouillard/du vent. Il y a un orage. Il pleut/neige/gèle.	Weather The weather's good/bad. It's hot/cold. It's sunny. It's foggy/windy. There's a storm. It's raining/snowing/icy.	Ici, le climat est humide/sec. Il peut faire très chaud/froid/doux. Il ne fait pas trop chaud/froid ... au printemps en été/automne/hiver	Here, the climate is wet/dry. It can be very hot/cold/mild. It's not too hot/cold ... in spring in summer/autumn/winter
Les transports Je vais/peux aller au collège ... à pied/vélo en train/métro/car/ voiture/bus	Transport I go/can go to school ... on foot/by bike by train/underground/coach/ car/bus	Les transports en commun sont bons.	The public transport is good.
En ville Il y a ... un château un centre de loisirs un marché un musée un parc/jardin public un stade un supermarché un théâtre une bibliothèque une cathédrale une église une gare (SNCF) une mairie une mosquée une pharmacie une poste (un bureau de poste) des hôtels	In town There is/are ... a castle a leisure centre a market a museum a park a stadium a supermarket a theatre a library a cathedral a church a (train) station a town hall a mosque a chemist a post office hotels	beaucoup de magasins Il n'y a pas de ... Est-ce qu'il y a un/une/des ... près d'ici/ par ici? Va/Allez tout droit. Tourne/Tournez à droite/gauche. Prends/Prenez la première/deuxième rue à droite/gauche. Continue/Continuez jusqu'au carrefour/ jusqu'aux feux. Traverse/Traversez la place/le pont. Descends/Descendez la rue. C'est ... (assez) loin/tout près sur ta/votre droite/gauche au coin en face (du/de la/de l'/des) à côté (du/de la/de l'/des)	lots of shops There isn't a/aren't any ... Is/Are there a/some ... near here/ round here? Go straight on. Turn right/left. Take the first/second road on the right/left. Continue as far as the crossroads/ traffic lights. Cross the square/bridge. Go down the road. It's ... (quite) a long way/very close on your right/left on the corner opposite next to

Ma région	My region		
Ma région/Une région que je connais bien, c'est ...	<i>My region/A region that I know well is ...</i>	Le paysage/La côte est vraiment magnifique/impressionnant(e).	<i>The landscape/coast is really wonderful/impressive.</i>
C'est dans le (nord/sud) de ... près de la Manche/la frontière allemande/espagnole	<i>It's in the (north/south) of ... near the English Channel/ the German/Spanish border</i>	On peut y faire/visiter/voir ...	<i>You can do/visit/see ... there.</i>
J'y habite depuis .../J'y vais ...	<i>I have lived there since .../I have been going there</i>	La région est connue pour ...	<i>The region is known for ...</i>
		Une personne célèbre qui est née en ..., c'est ...	<i>A famous person who was born in ... is ...</i>

Les renseignements	Information		
Qu'est-ce qu'on va faire à ...?	<i>What are we going to do in ...?</i>	Je ne veux pas rater/manquer (l'exposition sur) ...	<i>I don't want to miss (the exhibition on) ...</i>
Je veux absolument (faire une promenade en bateau).	<i>I definitely want to (go on a boat trip).</i>	Bonne idée. Pourquoi pas?	<i>Good idea. Why not?</i>
J'ai envie de (louer un bateau).	<i>I feel like (hiring a boat).</i>	Je veux bien faire ça aussi.	<i>I want to do that too.</i>
Ça m'intéresse de voir ...	<i>I'm interested in seeing ...</i>	D'accord. Ça m'est égal.	<i>OK. I don't mind.</i>
Je tiens à (visiter l'aquarium).	<i>I'm keen on (visiting the aquarium).</i>	Ça ne me dit rien.	<i>I don't fancy that.</i>
Je voudrais aller au/à la/à l'/aux ...	<i>I would like to go to ...</i>	Je n'en ai pas tellement envie.	<i>I don't really feel like it.</i>
J'aimerais bien monter à la/au ...	<i>I would like to go up ...</i>	Ça a l'air nul!	<i>That sounds rubbish!</i>

Ville de rêve ou ville de cauchemar?	Dream town or nightmare town?		
J'habite à...	<i>I live in ...</i>	Il y a ...	<i>There is/are ...</i>
C'est un petit village/une grande ville dans ...	<i>It's a small village/big town in ...</i>	beaucoup de monde/de voitures	<i>lots of people/cars</i>
J'habite dans la banlieue/un quartier de ...	<i>I live in the suburbs/a district of ...</i>	trop de circulation/de gens	<i>too much traffic/too many people</i>
Ce qui me plaît ici, c'est qu'il y a ...	<i>What I like is that ...</i>	tellement de bruit/de gens au chômage	<i>so much noise/so many people out of work</i>
En été/hiver, on peut ...	<i>In summer/winter, you can ...</i>	peu de travail/de transports en commun/commerces	<i>not much work/public transport/ not many businesses</i>
Le problème, c'est que/qu' ...	<i>The problem is that ...</i>	toujours des déchets par terre	<i>always litter on the ground</i>
il n'y a pas assez de (magasins/ espaces verts)	<i>there is/are not enough ... (shops/ green spaces)</i>	plusieurs boîtes de nuit/café/ restaurants	<i>several nightclubs/café/ restaurants</i>
il n'y a plus de (cinéma)	<i>there is/are no longer (a cinema)</i>	Le bowling a fermé.	<i>The bowling alley has closed down.</i>
il n'y a ni (parc) ni (aire de jeux)	<i>there is neither (a park) nor (a playground)</i>	C'est sale/(trop) tranquille/très animé.	<i>It's dirty/(too) quiet/very lively.</i>
		Ce n'est jamais tranquille.	<i>It's never quiet.</i>
il n'y a aucun (bowling)	<i>there isn't a (single) (bowling alley)</i>	Je trouve ça triste/déprimant/affreux/ nul/désagréable.	<i>I find that sad/depressing/awful/ rubbish/unpleasant.</i>
il n'y a aucune (zone piétonne)	<i>there isn't a (single) (pedestrian area)</i>	En général, je (ne) suis (pas) content(e) de mon village/quartier/ma ville.	<i>In general, I am (not) happy with my village/district/town.</i>
il n'y a qu'un seul (magasin)	<i>there is only one (shop)</i>		
il n'y a qu'une seule (rue)	<i>there is just one (street)</i>		
il n'y a rien pour les jeunes	<i>there is nothing for young people</i>		
il n'y a pas grand-chose à faire	<i>there's not a lot to do</i>		

Les projets	Plans		
Qu'est-ce qu'on fera?	<i>What shall we do?</i>	Je regarderai un film.	<i>I will watch a film.</i>
On ira pique-niquer dans le parc.	<i>We'll have a picnic in the park.</i>	Je jouerai à des jeux vidéo/au football.	<i>I will play video games/football.</i>
Ce sera génial!	<i>That will be great!</i>	On ne fera pas de barbecue.	<i>We won't have a barbecue.</i>
Je resterai à la maison.	<i>I will stay at home.</i>	On mangera dans un restaurant.	<i>We will eat in a restaurant.</i>

Quel temps fera-t-il?

Il y aura ...
 du vent
 du soleil
 du tonnerre
 de la grêle
 de la pluie
 des averses
 des éclairs
 des éclaircies

What will the weather be like?

There will be ...
 wind
 sun
 thunder
 hail
 rain
 showers
 lightning
 sunny intervals

Il fera ...
 beau/chaud/froid/frais
 Le temps sera ...
 brumeux/ensoleillé
 nuageux/orageux
 variable
 Le ciel sera bleu/gris/couvert.
 Les températures seront en baisse/
 en hausse.

It will be ...
 fine/hot/cold/cool
 The weather will be ...
 misty/sunny
 cloudy/stormy
 changeable
 The sky will be blue/grey/overcast.
 The temperatures will be going down/
 going up.

En pleine action!

J'ai/Nous avons ...
 collecté de l'argent
 vendu nos vieux jeux et jouets
 lavé des voitures
 acheté (de la peinture)
 planté des arbres
 lancé une pétition en ligne
 obtenu presque 2 000 signatures
 écrit un article dans le journal local

Taking action

I/We have ...
 collected money
 sold our old games and toys
 washed cars
 bought (paint)
 planted trees
 launched a petition online
 obtained nearly 2,000 signatures
 written an article in the local
 newspaper

Le week-end prochain, nous irons
 là-bas pour ...
 ramasser les déchets
 nettoyer la salle
 repeindre les murs
 La semaine prochaine, on finira
 d'installer/de construire ...
 un passage piéton
 un panneau
 une aire de jeux

Next weekend, we will go there to ...

 pick up litter
 clean the room
 repaint the walls
 Next week, we will finish installing/
 building ...
 a pedestrian crossing
 a sign
 a playground

Les mots essentiels

ailleurs
 ne ... aucun(e)(s)
 ne ... jamais
 ne ... ni ... ni ...
 ne ... personne
 ne ... plus
 ne ... que
 ne ... rien
 non plus
 alors
 donc
 de plus
 en plus
 également

High-frequency words

elsewhere
 not any, not a single
 never
 neither ... nor ...
 nobody, not anyone
 no longer, no more
 only
 nothing
 nor/either
 so, therefore
 so, therefore
 what's more, moreover
 also
 equally, also

d'ailleurs
 par contre
 malheureusement
 enfin
 plein de
 tellement
 le lendemain
 selon
 plusieurs
 quelques
 trop (de)
 peu (de)
 assez (de)
 tellement (de)

moreover, besides
 on the other hand
 unfortunately
 finally
 lots of
 really/so
 the next day
 according to
 several
 some
 too much/many
 little/not much
 enough
 so much/many

FRENCH YEAR 9 MODULE FOUR (MRS WILCOX) : DE LA VILLE À LA CAMPAGNE - MO 1 – 11 : (KPI 1 Know the key vocabulary for the module)

Où habites-tu? J'habite ... dans une ville/un village au centre-ville au bord de la mer à la campagne/montagne en ville à Londres/Manchester, etc.	Where do you live? I live ... in a town/village in the town centre at the seaside in the countryside/mountains in town in London/Manchester, etc.	dans le nord/le sud/l'est/ l'ouest ... dans le centre ... de l'Angleterre/Écosse/Irlande (du Nord) de la France du pays de Galles	in the north/south/east/west ... in the centre ... of England/Scotland/ (Northern) Ireland of France of Wales
Qu'est-ce qu'on peut faire? On peut ... aller à un match de foot aller au cinéma faire du cheval faire du ski faire du snowboard	What can you do? You can ... go to a football match go to the cinema go horse-riding go skiing go snowboarding	faire des promenades faire les magasins se baigner dans la mer se détendre sur la plage visiter le château visiter les musées	go for walks go shopping swim/bathe in the sea relax on the beach visit the castle visit the museums
Dans ma ville/mon village Dans ma ville/mon village, il y a ... un bureau de poste/une poste un centre de loisirs un château un marché un musée un parc/jardin public un stade	In my town/village In my town/village there is/are ... a post office a leisure centre a castle a market a museum a park a stadium	un supermarché une bibliothèque une église une gare (SNCF) une mosquée des hôtels des restaurants Il n'y a pas de ...	a supermarket a library a church a (railway) station a mosque some hotels some restaurants There isn't a/aren't any ...
Les directions Où est le/la/l' ...? / Où sont les ...? Pour aller au/à la/à l'/aux ...? Va/Allez tout droit. Tourne/Tournez à gauche/droite. Prends/Prenez la première/ deuxième/troisième rue à gauche/droite.	Directions Where is the ...? / Where are the ...? How do I get to the ...? Go straight on. Turn left/right. Take the first/second/third street on the left/right.	Traverse/Traversez le pont/la place. Descends/Descendez la rue. C'est près/loin? C'est tout près/assez loin.	Cross the bridge/square. Go down the street. Is it near/far? It's very near/quite far.
Qu'est-ce qu'il y a dans ta région? Dans ma région, il y a ... un lac un port de pêche une rivière/un fleuve des champs des collines des fermes des forêts des stations de ski des vignobles	What is there in your region? In my region there is/are ... a lake a fishing port a river fields hills farms forests ski resorts vineyards	En Bretagne, il y a ... un beau château une belle cathédrale des villes historiques de vieilles maisons de vieux bâtiments On peut ... faire de la voile faire des randonnées à vélo	In Brittany there is/are ... a beautiful castle a beautiful cathedral historical towns old houses old buildings You can ... go sailing go for bike rides

Le meilleur ...	The best ...		
le meilleur climat	<i>the best climate</i>	la plus haute tour	<i>the highest tower</i>
la meilleure équipe de football	<i>the best football team</i>	le musée le plus populaire	<i>the most popular museum</i>
le plus beau paysage	<i>the most beautiful countryside</i>	la région la plus historique	<i>the most historical region</i>
les plus belles plages	<i>the most beautiful beaches</i>	les stations de ski les plus populaires	<i>the most popular ski resorts</i>
le plus long fleuve	<i>the longest river</i>		
la plus longue piste de ski	<i>the longest ski slope</i>	les monuments les plus célèbres	<i>the most famous monuments</i>

Visiter une ville	Visiting a town		
Je voudrais visiter/voir ...	<i>I would like to visit/see ...</i>	Je voudrais louer des vélos.	<i>I would like to hire bikes.</i>
Je ne voudrais pas rater ...	<i>I wouldn't like to miss ...</i>	J'aimerais ...	<i>I would like to ...</i>
l'aquarium	<i>the aquarium</i>	faire une promenade en bateau	<i>go on a boat trip</i>
l'exposition sur ...	<i>the exhibition on ...</i>	monter à la tour de l'horloge	<i>climb the clock tower</i>
le spectacle son et lumière	<i>the sound and light show</i>		

Les renseignements touristiques	Tourist information		
(Le château) est ouvert quels jours de la semaine?	<i>On which days is (the castle) open?</i>	Avez-vous un dépliant/un plan de la ville?	<i>Do you have a leaflet/a map of the town?</i>
C'est ouvert (tous les jours/tous les jours sauf le dimanche).	<i>It's open (every day/every day except Sundays).</i>	Où est-ce qu'on peut acheter des billets?	<i>Where can we buy tickets?</i>
Quels sont les horaires d'ouverture?	<i>What are the opening hours?</i>	la durée	<i>duration</i>
C'est ouvert de (9h) à (17h).	<i>It's open from (9 a.m.) until (5 p.m.).</i>	les tarifs	<i>prices</i>
C'est combien, l'entrée?	<i>How much is the entrance fee?</i>	gratuit	<i>free</i>
Ça coûte ... pour les adultes et ... pour les enfants.	<i>It costs ... for adults and ... for children.</i>	accessible aux personnes handicapées	<i>accessible to disabled people</i>
Est-ce qu'il y a un restaurant ou une cafétéria?	<i>Is there a restaurant or a cafeteria?</i>	les chiens sont acceptés	<i>dogs are welcome</i>

Le temps/La météo	The weather/ The weather forecast		
Quel temps fait-il?	<i>What is the weather like?</i>	Il y a du vent.	<i>It's windy.</i>
Il fait beau.	<i>The weather is good.</i>	Il y a un orage.	<i>There's a storm.</i>
Il fait mauvais.	<i>The weather is bad.</i>	Il pleut.	<i>It's raining.</i>
Il fait chaud.	<i>It's hot.</i>	Il neige.	<i>It's snowing.</i>
Il fait froid.	<i>It's cold.</i>	près de la Manche	<i>near the Channel</i>
Il y a du soleil.	<i>It's sunny.</i>	sur la côte atlantique	<i>on the Atlantic coast</i>
Il y a du brouillard.	<i>It's foggy.</i>	sur la côte méditerranéenne	<i>on the Mediterranean coast</i>

Les projets	Plans		
aujourd'hui	<i>today</i>	aller à la piscine (en plein air)	<i>go to the (open-air) swimming pool</i>
demain	<i>tomorrow</i>		
après-demain	<i>the day after tomorrow</i>	faire un barbecue	<i>have a barbecue</i>
ce week-end	<i>this weekend</i>	faire un pique-nique	<i>have a picnic</i>
cette semaine	<i>this week</i>	faire de la luge	<i>go tobogganing</i>
S'il fait beau/mauvais (etc.), on va ...	<i>If the weather's good/bad (etc.), we're going to ...</i>	rester à la maison	<i>stay at home</i>
aller à la pêche	<i>go fishing</i>	regarder la télé	<i>watch TV</i>

Ville de rêve ou ville de cauchemar?	Dream town or nightmare town?		
C'est ...	It's ...	trop de bruit	too much noise
très animé	very lively	toujours des déchets par terre	always rubbish on the ground
trop tranquille	too quiet	Il n'y a rien pour les jeunes.	There is nothing for young people.
sale	dirty	Il n'y a pas grand-chose à faire.	There is not much to do.
pollué	polluted	Il n'y a pas de zone piétonne.	There is no pedestrian precinct.
triste	sad	Il n'y a plus de cinéma.	There is no longer a cinema.
Ce n'est jamais propre.	It's never clean.	Le cinéma est fermé.	The cinema is closed (down).
Il y a ...	There is/are ...	un club pour les jeunes	a youth club
de bons transports en commun	good public transport	les poubelles	bins
seulement des maisons et une église	only houses and a church	en banlieue	in the suburbs
trop de circulation	too much traffic	le quartier	neighbourhood, district, part of town

Les mots essentiels	High-frequency words		
s'il te plaît/s'il vous plaît	please	trop de	too much/many
merci	thank you	seulement	only
de rien	you're welcome	avant	before
aussi	also	maintenant	now
sauf	except (for)	D'accord!	OK!
si	if	Bonne idée!	Good idea!
trop	too		

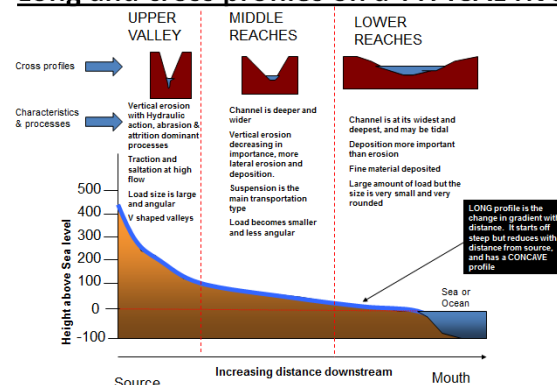
Paper One- Living with the Physical Environment- Section C- River Landscapes in the UK

Key words

Hydraulic action	Waves crash against rocks and compress air in the cracks which puts pressure on the rocks. Repeated compressions widens the cracks and causes part of the rock to break away
Abrasion	Eroded particles in the water scrape and rub against the rock
Attrition	Eroded particles in the water smash against each other and break in to smaller fragments
Solution	Chemicals in the water dissolve the rock
Vertical erosion	This deepens the river channel making it V shaped in the upper course of the river
Lateral erosion	This widens the river channel in the middle and lower courses of the river
Traction	Large particles like boulders are rolled along the river bed
Saltation	Pebble sized particles are bounced along the river bed
Suspension	Small particles like silt and clay are carried along by the water
Solution	Soluble materials dissolve in the water
Deposition	Sediment is dropped by the sea when it loses energy

KPI1 Describe and explain the changing features of a rivers long and cross profile (pg.66)

Long and cross profiles on a TYPICAL river



KPI2 Describe and explain the formation of landforms in the upper course of the river (pg68)

Interlocking Spurs

- In the upper course of the river most of the erosion is vertical which creates V shaped valleys.
- Rivers aren't powerful enough to erode laterally which means they have to wind around the high hillsides in their path.
- The hillside interlock with each other and the river winds around them.

Waterfalls

- Formed when a river flows over an area of hard rock followed by softer rock.
- The softer rock is eroded quicker (by hydraulic action and abrasion) creating a step in the river.
- As water goes over the step the erosion continues which creates steep drop.
- The hard rock is eventually undercut and collapses.
- The collapsed rock swirls around the foot of the water fall eroding the rock (abrasion) creating a plunge pool.
- Overtime the waterfall retreats leaving a gorge.

KPI3 Describe and explain the formation of landforms in the middle course of the river (pg69)

Meander

- Rivers develop large bends called meanders in the middle and lower course.
- The current is faster on the outside of the bend because the channel is deeper and there is less friction. This means there is more erosion in this area.
- The current is slower in the inside of the bend because the channel is shallower. This means there is deposition in this area forming slip-off slopes.

Oxbow lakes

- Meanders get larger over time.
- Erosion causes the outside of the bends to get closer until there is a small piece of land left between them called the neck.
- The river eventually breaks through his land and the river flows along the shortest course.
- Deposition eventually cuts off the meander forming an oxbow lake.

KPI4 Describe and explain the formation of landforms in the lower course of the river (pg. 70)

Floodplains

A wide flat valley floor on either side of the river. When a river floods the water deposits material making the floodplain higher.

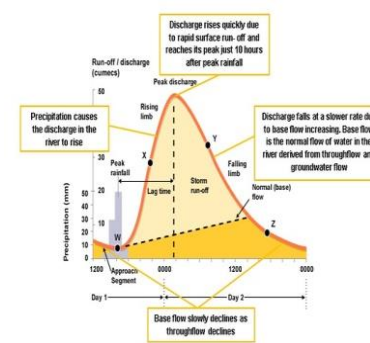
Levees

Natural embankments (raised bits) along the edges of the river. During flooding material is deposited with the largest pieces closets to the river. Over time this builds up.

Estuaries

Found at the mouth of the river when it enters the sea. Water is tidal and floods the banks. Material is deposited which creates mudflats.

KPI5 Describe and explain the key characteristics of a storm hydrograph (pg. 73)



Rivers flood due to both human and physical factors.

Physical;

Prolonged and/or heavy rain
Geology- impermeable rocks prevent infiltration which increases run-off.
Relief- the change in the height of the land.

Human;

Land use- buildings are made of impermeable rock
Trees intercept water and deforestation increases the volume of water reaching the river.

KPI6 Evaluate the techniques used to reduce the risk of flooding (pgs.74-77)

Method	Benefits	Disadvantages
Dams and reservoirs (hard)	Reservoirs store water reducing the volume of water downstream. Water can be used for drinking and HEP.	Dams are very expensive to build and reservoirs can flood existing settlements. Material is deposited in the reservoir affecting farmland downstream
Channel straightening (hard)	Water moves quickly reducing the risk of flooding	Flooding risk and erosion rates increase downstream as the water ins moving faster.
Embankments (hard)	Increasing the volume of the channel	Very expensive and they can break
Flood relief channel (hard)	River discharge is reduced and gates can control the release of water	There is increased discharge as the water is released after the flood
Flood warnings (soft)	People have time to move belongings upstairs and evacuate	They don't prevent flooding and people may not hear them
Flood plain zoning (soft)	The risk of flooding is reduced as building work does not happen on the floodplain	Space is limited in some urban areas which can cause conflict and some floodplains are already built on
Afforestation (soft)	Interception increases which reduces discharge. Creates habitats.	Less land available for farming
River restoration (soft)	Removing land made levees allows flood plains to flood. River is in its natural state	Local flood risk increases if nothing else is done

Module 4- Career Pathways within the hair and beauty sector

Key words	Description of key word
Career	An occupation undertaken for a significant period of a person's life with opportunities for progress
Job role	An overall description of what a person is expected to do in their job position.
Job responsibilities	Specific tasks a person is expected to do as part of their job role
Salary	A fixed regular payment, typically paid on a monthly basis but often expressed as an annual sum, made by an employer to an employee.
Skill set	A skill set is a particular category of skills necessary to acquire a job.
Education and training	College, Schools and private academy's offer hair and Beauty courses/apprenticeships
Attributes	Features or qualities that are part of someone's character

Job roles in hair and beauty

Hairdresser, Beauty Therapist, Spa Therapist, Barber, Massage therapist, Nail technician, Makeup artist

Job Role	Description of job role
Assistant	Is a person who is not yet qualified but may have started their training
Junior	Could be a newly qualified person or about to finish their training
Senior	Is a fully qualified person with a minimum of one- two years' experience
Consultant	Is a fully qualified person, with a least three years' experience
Salon manager/owner	Is a fully qualified person with at least 5 years employment and some management experience

Employment status	Description
Self- employed	<ul style="list-style-type: none"> Do not have a contract of employment You must pay your own income tax and NI You decide how much to charge for your work You choose your own hours and choose your own holiday You do not get paid for sickness and holiday You must be entitled to a safe and healthy working environment Your maternity allowance is slightly different
Employed	<ul style="list-style-type: none"> You work under a contract of employment that states all the terms and conditions relating to your job role Your employer is obliged by law to deduct tax and NI from your wages before paying them to you You are entitled to maternity leave, adoption leave and paternity leave. You cannot be unfairly dismissed and you should get statutory redundancy pay. You are entitled to holiday pay Some employers pay sick pay but not all of them

Data protection Act- Only relevant information should be collected, the information should only be used by the professionals involved and not with a third party, information should be held securely and should be updated regularly and available for the client if they wish to see their own.

Module 3

BTEC Level 1/ 2 Tech Award in Health and Social Care

Life events are expected or unexpected events that occur in an individual's life. You will explore the different events that can impact on people's physical, intellectual, emotional, and social development.



Expected and unexpected



	expected	unexpected
starting a new school	✓	
physical injury or illness		✓
starting work	✓	
the death of a friend or relative		✓
going through puberty	✓	
getting married	✓	
the birth of a brother or sister	✓	

	expected	unexpected
bankruptcy		✓
divorce or the breakdown of a serious relationship		✓
going through the menopause	✓	
redundancy		✓
unemployment		✓
retirement	✓	
winning the lottery		✓

How can certain life events affect us Physically, Intellectually, Emotionally and Socially?

Physical events

Accident

Injury

Ill health

Relationship changes:

Entering into relationships

Marriage

Divorce

Parenthood

Bereavement

Life circumstances

Moving house, school, job

Exclusion from education

Redundancy

Imprisonment

Retirement

2F. CHANGES IN HEALTH AND MEDICINE IN BRITAIN, c.500 to the present day**COMPONENT 2: THEMATIC STUDY**

This option focuses thematically on the main trends in the history of health and medicine in Britain from c.500 to the present day. Candidates will be required to consider the causes, treatment and prevention of illness and disease, advances in medical knowledge, developments in patient care and advances in public health and welfare over time. Candidates will also be required to examine the major political, social, economic and cultural perspectives which have contributed to the development of health and medicine from c.500 to the present day. In this option, centres should ensure that they focus, where appropriate, on the issues of change, continuity, significance and turning points. As part of this option candidates will investigate an historic site connected with this theme. *The required content in italics shows which key features and characteristics of the period must be studied.*

Key questions	Required Content
<u>Causes of illness and disease</u> What have been the causes of illness and disease over time?	<i>Problems in the medieval era: poverty, famine, warfare; lack of hygiene in the medieval and early modern eras with reference to the Black Death of the fourteenth century and the Great Plague of the seventeenth century; the effects of industrialisation and the incidence of cholera and typhoid in the nineteenth century; the spread of bacterial and viral diseases in the twentieth century</i>
<u>Attempts to prevent illness and disease</u> How effective were attempts to prevent illness and disease over time?	<i>Early methods of prevention of disease with reference to the Black Death: alchemy, soothsayers and medieval doctors; the application of science to the prevention of disease in the late eighteenth and early nineteenth centuries: the work of Edward Jenner and vaccination; the influence and spread of inoculation since 1700; the discovery of antibodies and developments in the field of bacteriology</i>
<u>Attempts to treat and cure illness and disease</u> How have attempts to treat illness and disease changed over time?	<i>Traditional treatments and remedies common in the medieval era: herbal medicines, barber surgeons, use of leeches; Joseph Lister and the use of antiseptics in the later nineteenth century; James Simpson and the development of anaesthetics; twentieth century developments: Marie Curie and the development of radiation; the roles of Fleming, Florey and Chain regarding antibiotics; Barnard and transplant surgery; modern advances in cancer treatment and surgery; alternative treatments</i>
<u>Advances in medical knowledge</u> How much progress has been made in medical knowledge over time?	<i>Common medical ideas in the medieval era: the influence of alchemy, astrology and the theory of the four humours; the influence of the medical work of Vesalius, Pare and Harvey in the sixteenth and seventeenth centuries; nineteenth century advances in medical knowledge: improved knowledge of the germ theory: Pasteur and Koch; the development of scanning techniques in the twentieth century: X-rays, ultrasound and MRI scans; the discovery of DNA and genetic research in the later twentieth century</i>
<u>Developments in patient care</u> How has the care of patients improved over time?	<i>The role of the church and monasteries from medieval times up to the mid sixteenth century; the roles of voluntary charities in patient care after the mid sixteenth century; science and the development of endowed hospitals in the late eighteenth century; Florence Nightingale and the professionalisation of nursing in the nineteenth century; the impact of the early 20th century Liberal reforms; the Beveridge Report of 1944 and provision under the NHS after 1948</i>
<u>Developments in public health and welfare</u> How effective were attempts to improve public health and welfare over time?	<i>Public health and hygiene in medieval society; public health and hygiene in the sixteenth and seventeenth centuries; the impact of industrialisation on public health in the nineteenth century; the work of Edwin Chadwick leading to Victorian improvements in public health; efforts to improve housing and pollution in the twentieth century; local and national government attempts to improve public health and welfare in the twenty-first century: campaigns, fitness drives, healthy eating</i>

Health and Medicine 1: Causes of illness and disease			KPI 1 Medieval causes		KPI 2 Case Study: The Black Death				
1069	The Harrying of the North		<p>Poverty Most people in England worked in agriculture. Only 25% of families had enough land to grow their own food, which meant they needed a job, which were hard to find. Most people lived on the poverty line, eating pottage. Some ate animals but there were harsh fines for poaching.</p> <p>Famine In 1069, William I punished Anglo-Saxons in the north of England for rebelling against him by ploughing salt into their fields so crops would not grow. Thousands died of hunger. This was called the Harrying of the North. All of Europe went through a hard famine from 1315-17 in which 15% of the population died.</p> <p>War In the later Middle Ages, armies were very large and fighting was bloody. In the Battle of Townton in 1461, for example, 28,000 died. Armies also relied on the local population for food. If an army passed through a village, villagers were left hungry by soldiers stealing food and animals</p> <p>Accidents Everyday life was dangerous. In 1389 Johanna Appulton was killed after falling into a well. Two servants came to rescue her but they also fell in.</p> <p>Towns Medieval towns were badly planned because the causes of disease were not well understood. For example, wells for drinking water were often placed next to cesspools for storing human waste.</p>		What was it? In 1348 a ship arrived in Melcombe in Dorset. The ship brought with it a deadly disease - known as the Black Death - that killed over 50% of the population of Britain, sometimes wiping out entire villages.				
1315	Famine across Europe				What did people think caused the Black Death? People at the time had no idea about the causes of the Black Death. Some argued that it was caused by: 1. Bad smells, caused by rotting food 2. God's anger at people not going to church 3. Jews poisoning the wells 4. The movement of the planets				
1348	The Black Death arrives in Britain								
1389	Johanna Appulton dies in a well								
1461	Battle of Townton kills 20,000								
1665	The Plague hits London								
1848	Cholera epidemic kills 60,000				What actually caused the Black Death? The Black Death was a disease called the bubonic plague. The cause of the disease was the 'Yersina pestis bacterium' which was carried by fleas. The fleas lived in the fur of black rats and could easily jump onto humans.				
1854	Cholera epidemic kills 60,000								
1861	Prince Albert dies of cholera								
1918	Spanish flu kills 40 million world wide								
1980	AIDS pandemic begins								
<div><div>Agriculture</div><div>AIDS</div><div>Bacterial</div><div>Black Death</div><div>Bubonic Plague</div><div>Battle of Townton</div><div>Cholera</div><div>Contaminated</div><div>Epidemic</div><div>Famine</div><div>Harrying of the North</div><div>Miasma</div><div>Pandemic</div><div>Phossy Jaw</div><div>Phosphorous</div><div>The Plague</div><div>Pneumoconiosis</div><div>Poaching</div><div>Pottage</div><div>Rickets</div><div>Sanitation</div><div>Slum Housing</div><div>Typhoid</div><div>Transmit</div><div>Virus</div><div>William I</div></div> <div><div>Farming</div><div>Virus that destroys immune system</div><div>Spread by bacteria</div><div>Plague that hit Britain in 1348</div><div>Disease spread by fleas on rats</div><div>1461 battle that killed 20,000</div><div>Bacterial disease spread in water</div><div>Infected</div><div>Widespread disease</div><div>Shortage of food</div><div>When William I punished the North of England for rebelling</div><div>Medieval name for 'bad smells'</div><div>Disease spread across the world</div><div>Disease caught in match factories</div><div>Chemical causing phossy jaw</div><div>1665 outbreak of bubonic plague</div><div>Lung disease common in coal miners</div><div>Killing animals illegally</div><div>Stew</div><div>Disease caused by a lack of sunlight</div><div>Cleanliness / hygiene</div><div>Poor quality and overcrowded housing</div><div>Bacterial disease in food/water</div><div>Spread</div><div>Infectious disease</div><div>King of England 1066-1087</div></div>			KPI 3 The Plague and Renaissance ideas about causes of disease						
			What was it?		What did people think caused it?		What actually caused it?		
			The plague was a deadly disease that came frequently to major towns and cities. In 1665, for example, 100,000 people died of the plague in London, nearly a quarter of the city's population.		Renaissance doctors were equally as clueless as people in the Medieval period. Suggested causes included: 1. A punishment from God 2. Bad air or 'miasma' 3. Cats and dogs spread the disease		The cause of the disease was the 'Yersina pestis bacterium' which was carried by fleas. The fleas lived in the fur of black rats and could easily jump onto humans.		
			KPI 4 Industrial causes					KPI 5 20 th Century causes	
			Cholera and Typhoid			Spanish Flu In 1918, the last year of World War I, the world was hit by a flu pandemic. Globally, the flu killed more people than World War I and around 280,000 died in the UK. The flu spread faster because of wartime conditions: the movement of soldiers around the world helped transmit the disease to new places and returning soldiers brought the virus back home.			
New diseases began to spread in the industrial period. Cholera is a bacterial disease caused by infected water, although no one knew this at the time. There were cholera epidemics in 1848 (60,000 dead) and 1854 (20,000). Typhoid is a bacterial disease caught from contaminated food and water caused by poor sanitation. Prince Albert, Queen Victoria's husband, died of typhoid in 1861.									
Industrialisation		Urbanisation		AIDS Acquired Immune Deficiency Syndrome (AIDS) was first identified in the USA in the 1980s. People do not die of the AIDS virus, but it destroys the immune system so patients die of simple infections, like the common cold. Globally, more than 40 million have died from AIDS, including celebrities such as Freddie Mercury, the lead singer of Queen. AIDS is usually caused by: 1. Having unprotected sex with someone who has AIDS 2. Sharing needles whilst injecting drugs with someone who has AIDS 3. Being born to a mother with AIDS					
During the 19 th Century, more and more people began to work in factories, exposing themselves to new diseases. Girls making matches developed 'phossy jaw' caused by the phosphorous used to make match heads. Coal miners developed pneumoconiosis, a lung disease caused by breathing in coal dust. Machines in the new factories were unsafe and often crushed limbs.		People moved to towns to find work in factories. Conditions in the slum housing of industrial towns were terrible: whole families lived in one room, toilets were shared by many families, and smog filled the air. In 1842, the life expectancy of a worker in London was just 16. These conditions led to diseases such as rickets, a bone disease caused by a lack of fresh air and sunlight.							
Just like the Black Death, many people did not know how AIDS was spread, they worried that: 1. AIDS was God's punishment for modern attitudes to sex and drugs 2. AIDS could be caught from simply touching someone with the virus									

Health and Medicine 2: Preventing illness and disease		KPI 6 Preventing the Black Death			KPI 7 Other Medieval methods of prevention	
410 1348	Romans leave Britain Black Death arrives in Britain	Lost knowledge The Arabs understood the importance of hygiene and the Romans built aqueducts to bring fresh water to their towns. However, this knowledge was lost when the Romans left Britain in 410. Attempts to prevent the Black Death included:			Alchemy Alchemy was the attempt to turn other metals into gold through scientific experiments. Although no one managed to do this, lots of useful scientific discoveries were made in this way. Many alchemists claimed to be searching for the Elixir of Life: a medicine to keep you young forever. The medicine - known as quintessence - was made from vinegar and usually just made the patient violently sick.	
1753 1795 1694 1796	James Lind discovers the cause of scurvy Charles Gordon discovers cause of 'child bed fever' Queen Mary dies of smallpox Edward Jenner develops smallpox vaccine	The role of the Church The church argued that the Black Death was caused by people not praying enough. To stop the disease, the church ordered people to march through towns praying for forgiveness. The most extreme group was the flagellants who whipped themselves to show God that they were sorry for their sins.	Hygiene Some came close to effective preventions, without knowing why. King Edward III thought that the Black Death came from bad smells so ordered the streets of London to be cleaned. Red crosses were painted on the doors of victims, warning others to stay away.	Other preventions Some less effective preventative methods included: 1. Having a bath in urine three times a day 2. Cutting yourself and letting the cut bleed to let out evil spirits 3. Carrying a bunch of sweet smelling flowers to keep bad smells away	Soothsayers Soothsayers claimed to have powers of prophesy. They collected herbs and plants to be used as charms. People could pay for a charm that would protect them against illness. The most famous soothsayer was Mother Shipton who lived in Yorkshire. Shipton used mineral water from a deep well to heal her patients.	
1840 1854 1866 1871	Government makes smallpox vaccine free for kids John Snow prevents cholera in London Anti-Vaccine League formed Fines introduced for not vaccinating children				Medieval doctors The few doctors that existed were trained in Italy and France but were ineffective because so little was known about the causes of disease. Some monks in monasteries provided medical care. Apothecaries made up herbal remedies.	
1955 1993 1994 1998 2012	Polio vaccine introduced Measles vaccine introduced Hepatitis B vaccine introduced Link between MMR and autism 'identified' First measles outbreak in Britain	KPI 8 Renaissance prevention			KPI 9 Industrial prevention	
Alchemy Antibodies Apothecaries Bacteria Bacteriology Bloodletting Child-bed fever Cowpox Elixir of Life Eradicate Fad Flagellants Germ theory Hygiene Inoculated Microscope Milkmaids MMR vaccine Monasteries Prophecy Quintessence Scurvy Smallpox Soothsayers Spa Teetotalism Vaccination Yorkshire	Turning metal into gold Cells defending against germs People who sell natural cures Tiny cells spreading diseases The study of bacteria and disease Bleeding to stop disease Deadly infection caught in childbirth Mild disease caught from cows Medicine to make you live forever Completely get rid of A craze Group who whipped themselves Idea that disease is spread by germs Keeping clean Given a mild disease to protect against a more serious disease Machine for studying germs Women who milk cows measles, mumps, and rubella vaccine Where monks live Predicting the future So-called elixir of life A disease caused by a lack of Vitamin C A deadly infectious disease Wise women who predicted the future Water spring Not drinking alcohol Inoculating against disease County in the North of England	Fads The Renaissance saw the development of health fads, often inspired by knowledge of Greek and Roman medicine. For example: 1. Vegetarianism 2. Teetotalism 3. Bloodletting	Cold Water During the eighteenth century, wealthy people believed that 'taking the cure' (bathing in cold water) would keep them healthy. Spa and seaside towns like Bath and Brighton became popular. The rich built 'plunge pools' of cold water in their gardens.	The Scientific Method The scientific method meant using experiments to work things out. The Renaissance was the first time that science became important in medicine. For example, in 1795 Alexander Gordon worked out that 'child-bed fever' was spread by midwives and doctors. Gordon advised that doctors wash their clothes regularly and wash their hands in before treating patients, although he was mocked at the time. In 1753, James Lind discovered that a lack of fruit caused scurvy and recommended that British sailors drink lime juice.	The industrial age saw many inventions that helped stop the spread of disease, including the microscope and stethoscope. In general, science became a much bigger influence on medical practice. For example: John Snow and Cholera In 1854, John Snow, a doctor in London, demonstrated the link between poor quality water and cholera. He recorded the location of each cholera death on a street plan. There were over 500 deaths focussed on his street - Broad Street - in just two weeks. Snow removed the handle from the water pump on Broad Street and the disease declined. The water company had been using polluted water from the River Thames in the pump. Germ Theory During the 19 th Century, Louis Pasteur, a French doctor, discovered germ theory: the idea that tiny bacteria spread diseases. A German, Robert Koch, developed the science of bacteriology and worked out that antibodies - the body's natural defence against germs - could destroy bacteria.	
		KPI 10 Case study: Vaccination				
		Edward Jenner and Smallpox Smallpox was a deadly disease, killing 35,000 in 1796 and even killing Queen Mary in 1694. In 1796, Edward Jenner, a country doctor from Gloucestershire, noticed that milkmaids who had caught cowpox never caught smallpox. Jenner worked out that having cowpox inoculated patients against smallpox. He proved this by injecting his own 11-month-old son with cowpox and then smallpox: the boy survived. Jenner had discovered vaccination.		Impact of vaccination In 1840, after a deadly smallpox epidemic, the government made vaccination free to all children and in 1871 introduced fines for parents who didn't vaccinate their children. Many opposed vaccination, claiming that it was wrong to inject children with a disease or interfere with God's plan, and formed the Anti-Vaccine League in 1866. However, vaccination was very successful: completely eradicating smallpox by the 1920s. In the 20 th Century, more vaccines were introduced for diseases such as: polio (1955), measles (1993), and Hepatitis B (1994). As a result, child mortality has fallen from 150 per thousand in 1800 to 4 per thousand today.		MMR debate In 1998 Dr. Wakefield published research showing that the MMR vaccine could lead to autism. This caused a widespread rejection of the MMR vaccine, a real danger because 95% of children need to be vaccinated for a disease to be eradicated. Wakefield's research has been rejected but vaccination rates are only 93% and Britain had its first measles outbreak in 2012.

Health and Medicine 3: Treating and curing illness and disease		KPI 11 Medieval treatments									
1628	William Harvey publishes study of circulation	Herbal Medicines Herbs were widely used to cure diseases. Herbal remedies included a mixture of honey and plants and were written down with strict instructions about which herbs to pick and when. Some recipes would only work if the herbs were picked on the night of the full moon.		Bleeding Many people thought that illnesses were caused by the body creating too much blood so curing disease often involved letting a patient bleed. This was either done by cupping (sucking blood out of the body) or with leeches. Leeches were thought to only suck impure blood out of the body.		Barber Surgeons There were few trained surgeons in the Medieval period so people went to barber surgeons. As well as cut your hair, barber surgeons mended broken limbs, pulled teeth, and carried out surgery. Barber surgeons had no medical knowledge and very little training.		Urine Urine was vital for diagnosing illness and working out what remedy to give a patient. A physician would check the colour, smell, and taste against a chart to help decide how to treat a patient.			
1847	James Simpson first uses chloroform on a patient										
1853	Queen Victoria uses chloroform during childbirth										
1871	Joseph Lister invents carbolic acid spray										
1880	Berkeley Moynihan uses surgical gloves										
1886	Gustav Neuber uses a sterile operating theatre										
1903	Marie Curie wins first Nobel Prize	KPI 12 Renaissance treatments			KPI 13 Industrial treatments						
1928	Alexander Fleming discovers penicillin by accident										
1945	Fleming, Flowey, and Chain win Nobel Prize										
1952	First kidney transplant										
Acupuncture Anaesthetic Antibiotics Antiseptic Barber surgeons Chemotherapy Chloroform Circulation Cocaine Cupping Diagnosing Germ theory Homeopathy Impure Leeches Mastectomy Nobel Prize Operating Theatre Penicillin Petri dish Physician Physicist Radioactive Radiotherapy Remedies Sepsis Sterile Sterilise Surgeons Surgery Transplant	Chinese alternative medicine	Continuity Many treatments from the Medieval period continued to be used in the Renaissance. For example, the use of herbal medicines continued with the Nicholas Culpeper's doctrine of signatures: the idea that plants could be used to treat body parts that they looked like!)	New ingredients The discovery of America and exploration around the world provided new ingredients for medicine. Rhubarb, for example, was greeted as a miracle cure when it was first imported from Asia. Smoking tobacco every day was also supposed to stop you getting the plague.	The Scientific Method The most significant change in the Renaissance was the use of science - doing experiments and recording results - to better cure diseases. For example, William Harvey published a scientific study of circulation in 1628 which was based on experiments on fish and snakes.	James Simpson and anaesthetics In earlier periods, any kind of surgery was very painful because surgeons did not use anaesthetic. In 1847, the Scottish scientist James Simpson began to use chloroform to reduce pain in childbirth. Patients would inhale chloroform and quickly fall asleep. The use of chloroform became more popular after 1853 when Queen Victoria used it whilst having a baby. Cocaine, imported from South America, was also given to patients.						
	A substance that numbs pain				Joseph Lister and antiseptics Many surgery patients died from sepsis, an infection caught during an operation from the surgeon and his tools. An English surgeon called Joseph Lister changed this by using an operating room sterilised with carbolic acid. He soaked his hands, his instruments, and the wound regularly. In 1871 he invented a machine that sprayed carbolic acid over the entire room. This reduced the mortality rate in his operations from 46% to 15% in just 3 years.						
	Drugs that kill bacteria				Aseptic Surgery Surgeons who understood germ theory wanted to create completely germ-free environments for surgery. This was called aseptic surgery. In 1886 a German surgeon called Gustav Neuber used the world's first sterile operating theatre and his methods were widely copied.						
	A substance that kills germs				Surgical clothing Gradually, surgeons began to use specialist clothing to prevent infection. In the 1880s Berkeley Moynihan became the first British surgeon to wear surgical gloves for an operation.						
	Part-time, untrained surgeons										
	Use of powerful drugs to treat cancer										
	The first anaesthetic										
	How blood moves around the body										
	An anaesthetic drug										
	Sucking blood from the body										
	Finding out what is wrong										
	The idea that germs spread disease										
	Alternative medicine that avoids drugs										
	Dirty										
	A blood-sucking worm										
	Surgery to remove breasts										
	Award for new science										
Where operations are carried out											
An antibiotic											
A dish used in a chemistry lab											
A doctor											
A scientist specialising in physics											
Type of element that kills cells											
Using radioactive elements to cure cancer											
Treatments											
Infection caught during surgery											
Without bacteria											
To make sterile											
Doctors who do operations											
Operations											
Replacing a sick organ with a healthy one from another person											
		Marie Curie and radiation The Polish physicist Marie Curie won the Nobel Prize in 1903 and 1911 for her work discovering the radioactive elements, radium and polonium. These elements could be used to destroy human cells and therefore opened up new ways of treating cancer, with the development of radiotherapy.		Antibiotics In 1928, the scientist Alexander Fleming left a form of mould - penicillin - in a petri dish before going on holiday. When he returned, the penicillin had killed off the bacteria surrounding it. By accident, Fleming had discovered the antibiotic penicillin. His work was developed by Howard Flowey and Ernst Chain and published in the 1940s. World War II sped up the development of the drug as it could be used to treat war wounds. Penicillin could also be used to treat pneumonia, meningitis, and impetigo.		Transplant Surgery The later 20 th Century saw the development of transplant surgery in which sick organs were simply replaced: 1952: first kidney transplant 1967: first heart transplant, carried out by Dr Christian Barnard 1972: artificial hips introduced		Cancer treatment Along with radiotherapy, cancer is also treated through chemotherapy: the use of powerful drugs to kill cancerous cells. Surgery is also used to treat cancer, with mastectomy commonly used to treat breast cancer.		Alternative Medicine The increased use of technology and drugs to treat diseases has led some to reject modern medicine. This has led to a rise in such as acupuncture and homeopathy which are popular with those who dislike the idea of filling the body with chemicals.	

Health and Medicine 4: Advances in Medical Knowledge		KPI 15 Medieval knowledge							
460 BC	Hippocrates born in Greece		Hippocrates and Galen Medical knowledge in the Middle Ages was based on the work of Hippocrates and Galen. Both had written their ideas over a thousand years before and their knowledge had been lost in Europe. However, Islamic doctors such as Ibn Sina had translated their work into Arabic. Medicine in the Islamic World was much more advanced than in Europe during the Middle Ages.		The Four Humours Both Hippocrates and Galen believed the body contained four humours: blood, phlegm, yellow bile, and black bile. A healthy body had a balance of humours. Illness was caused when the humours were out of balance. Different foods and seasons could affect the humours.	Astrology Medieval doctors also believed that the movements of the stars influenced the human body. Each part of the body was associated with an astrological sign. In many European countries, surgeons were required to check the position of the moon before carrying out surgery.	The Role of the Church The Church was at the centre of Medieval life and taught that prayer and pilgrimage were the most effective way of treating disease. The Church set up medical schools to teach Galen's ideas. The church held back advances in medical knowledge because they defended Galen. For example, Roger Bacon - a medical lecturer at Oxford University - was arrested in 1277 for challenging Galen's views.		
130 AD	Galen born in Roman Empire								
900 1277	Galen's work translated from Arabic Roger Bacon arrested for challenging Galen								
1525 1543 1575 1628	Galen's complete works published in Greek Vesalius publishes <i>De humani corporis</i> Paré publishes <i>Les Oeuvres</i> Harvey publishes <i>On the Motion of the Heart</i>		Hippocrates was a doctor from Ancient Greece. He believed in the theory of the four humours. Hippocrates is known as 'the father of modern medicine'.		Galen was a Roman doctor. He dissected animals to understand how the body worked and took the ideas of Hippocrates further. His work arrived in Europe in 900 via Arabic translations, which were then translated into Greek at the University of Salerno. The Church approved of Galen's ideas because he mentioned 'the Creator'.				
1880 1882 1895 1910	Pasteur discovers rabies vaccine Koch discovers tuberculosis vaccine X-rays invented Ehrlich develops Salvarsan 606								
1953 1970s 1980s 2003	Crick and Watson discover DNA Ultrasound used to check unborn babies MRI machines commonly used Human genome mapped		KPI 16 Renaissance Knowledge						
<div>Anatomy Amputation Arabic Astrology Astrological sign Bacteriology Cauterizing Circulation Classical Dissect DNA Four Humours Galen Genetic Disease Hippocrates Human Genome Ibn Sina Ligatures Micro-organisms MRI Pilgrimage Salvarsan 606 Syphilis The Creator Theory Tuberculosis Ultrasound</div>	<div>Science of how the body works Removing limbs Muslim language Movements of the planets Signs of the zodiac, like pisces/leo Study of bacteria and disease Using hot oil to stop a wound bleeding Movement of blood around the body From ancient Greece and Rome Cut up a dead body Carrier of human genes Blood, phlegm, yellow bile, black bile Roman doctor An illness caused by DNA Greek doctor Complete DNA of a human Islamic doctor who translated Galen String used to tie up a vein Germs Magnetic scanning technique A journey to a holy site Drug used to treat syphilis Sexually transmitted infection God Idea Deadly infectious disease of the lungs Scanning technique</div>	Challenging Galen The Renaissance saw the rebirth of classical knowledge and by 1525 Galen's complete works had been republished in Greek. However, as Renaissance surgeons studied anatomy and performed operations of humans, they noticed differences between Galen's ideas and what they saw. This led to a split between supporters and critics of Galen.	Andreas Vesalius 1514-64	Professor of Surgery at Padua in Italy. He carried out his own dissections on humans and believed this was the best way to understand how the body worked.	Vesalius's dissections of the human body showed that Galen's ideas about anatomy, based on animal dissections, were inaccurate.		<i>De humani corporis fabrica libri septem</i> (1543)	Vesalius's work gave surgeons more accurate knowledge of anatomy and encouraged others to challenge Galen.	
			Ambroise Paré 1510-90	A surgeon in the French Army for 30 years. He developed new techniques including using ligatures to tie off wounds after amputation and the use of artificial limbs.	Relied on experiments, not just Galen. he ran out of hot oil for cauterising wounds, so he used a mixture of egg yolks and rose oil which was more effective.		<i>Les Oeuvres</i> (1575)	The father of modern surgery. Encouraged surgeons to use techniques that reduced the amount of pain.	
			William Harvey (1578-1657)	Physician to King James I. Harvey discovered circulation: the idea that blood is pumped around the body by the heart. Previously, Galen had thought that blood was made in the liver and went one way.	Harvey's experiments showed that Galen was wrong about how blood travelled. He also showed that the heart was the centre of the body, not the liver as Galen thought.		<i>On the Motion of the Heart</i> (1628)	Harvey's work revolutionised medicine. Galen's supporters, however, totally rejected his work and he lost many patients.	
		KPI 17 Industrial knowledge					KPI 18 20th Century knowledge		
Germ Theory, the idea that micro-organisms spread disease, replaced the four humours as the way disease was understood. These scientists were important in the development of germ theory: Louis Pasteur: identified the link between micro-organisms and disease and developed a vaccine against rabies in 1880 Robert Koch: worked on bacteriology, linking germs to diseases, and identified the bacteria responsible for cholera, tuberculosis, and typhoid. Paul Ehrlich: a student of Koch who developed drugs to treat specific diseases, for example in 1910 Ehrlich developed Salvarsan 606 which killed the bacteria causing syphilis					Scanning Technologies In the late 20 th Century, medical scans have improved care: X-Rays: first developed in 1895 to show broken bones, used in WW1 to better treat wounds, although initial doses of radiation were high Ultrasound: can detect organs/muscles, used to check health of unborn babies since 1970s MRI: uses magnets to give a very clear image, can be used to examine any disease, since 1980s			The use of DNA The scientists Crick and Watson discovered DNA, which carries genetic information, in 1953. In 2003 scientists mapped the human genome. By modifying DNA, scientists have been able to eliminate some genetic diseases and ensure babies are born without genetic disease.	

Health and Medicine 5: Patient Care		KPI 19 Medieval patient care		
1536	The Dissolution of the Monasteries	Monasteries Medieval hospitals were run by the church and were more concerned with religion than healthcare. Most hospitals were part of monasteries, such as Tintern Abbey. Over 1100 hospitals were built in this period.	Christian hospitals Only 10% of medieval hospitals actually cared for the sick. In fact, seriously ill people were often not allowed in because they distracted from worship. Patients were expected to spend their day praying for forgiveness so God would cure them. They were looked after by monks and nuns. There were few doctors.	Different types of Christian hospitals Leper Hospitals provided a home for people with leprosy. People feared contact with lepers so Leper Hospitals were built on the outskirts of towns. Almshouses were medieval care homes and provided the elderly with sheltered accommodation. Almshouses also cared for orphaned children and poor travellers.
1546	Endowment of St Bartholomew's Hospital			
1662	Royal Society set up			
1724	Thomas Guy donates money to set up Guy's Hospital			
1854	Florence Nightingale serves in the Crimean War	KPI 20 Renaissance patient care		
1856	Nightingale School of Nursing set up			
1859	Notes on Nursing Published			
1911	National Insurance Act (sick pay)			
1942	Beveridge Report	Dissolution of the Monasteries In 1536, Henry VIII dissolved the monasteries. This had a dramatic impact because the church no longer supported hospitals. Charities had to step in to keep hospitals open.	Royal Hospitals In London, the government granted endowments to hospitals to keep them open. Five London hospitals were given endowments, including St. Bartholomew's Hospital which was endowed in 1546 to help serve the poor and sick of Smithfield in London.	Endowed Hospitals During the 18 th Century, the role of hospitals changed to places where illnesses could be treated. The number of hospitals also grew, with 11 new hospitals set up in London and 46 in the rest of the country. There were several reasons for this: 1. Renaissance doctors applied the scientific method to treatments. Scientific societies were set up, such as the Royal Society in 1662, which spread scientific knowledge about medicine. 2. Urbanisation meant larger towns, each needing a hospital 3. Industrialisation allowed industrialists to become very wealthy. Some industrialists became philanthropists and used their wealth to set up hospitals. For example, Thomas Guy donated money to found Guy's Hospital in London in 1724.
1946	National Insurance Act (pregnant women/unemployed)			
1948	Founding of the NHS			
Almshouses	Care homes for the elderly	KPI 21 Industrial patient care		
Conservative	UK political party representing the rich			
Crimean War	War between UK and Russia, 1854-6			
Dissolved	Shut down			
Endowed	Given land and money	KPI 22 20th Century patient care		
Endowments	Land and money			
Idleness	Unemployment			
Ignorance	Lack of education			
Industrialists	Factory owners and businessmen	New Hospitals The 19 th Century saw a great expansion in the number of hospitals, caused by population increase. Hospitals also began to specialise in areas such as maternity care or cancer treatment.	Liberal Reforms 1906-14	David Lloyd-George, the Liberal Chancellor, introduced the National Insurance Act in 1911. This provided sick pay and free treatment. Workers received 10 shillings per week for 26 weeks although this did not cover their wives/children or the unemployed .
Insurance	Benefits			
Laissez-faire	Belief that government shouldn't interfere			
Labour	UK political party representing the workers			
Lepers	People with Leprosy	Florence Nightingale Before 1850, nursing was not seen as a respectable job. Nurses were untrained and often drunk. Nursing improved dramatically after the Crimean War. In 1854, a British nurse - Florence Nightingale - took 38 nurses to a military hospital in Scutari. She reduced the death rate from 42 of 100 to just 2 of 100 in six months by: 1. Washing patients regularly 2. Spacing beds out 3. Opening windows to circulate air	Beveridge Report 1942	William Beveridge identified 'Five Giants' that needed to be tackled by government: Want, Disease, Ignorance, Squalor, and Idleness. After 1945, the Labour government led acted on Beveridge's recommendations, for example: - 1946 National Insurance Act provided benefits for pregnant women/the unemployed - 1949 Access to Countryside Act gives public access to national parks
Leprosy	Contagious disease that deforms limbs			
Liberal	UK political party representing the rich who want to help the poor			
	Related to childbirth			
Maternity	Large religious buildings where monks live	Professionalisation Nightingale returned to Britain and set new standards for nurses. In 1856 she raised £50,000 to set up the Nightingale School of Nursing. In 1859 she wrote <i>Notes on Nursing</i> which said: - Nurses must live at the hospital - Nurses had to keep a work diary which was inspected each month By 1901 there were 68,000 trained nurses in Britain. Nightingale wrote <i>Notes on Hospitals</i> in 1863 which proposed the 'pavilion design' with separate wards linked by a long corridor to allow air flow	The founding of the NHS 1948	The Labour Minister for Health, Aneurin Bevan, set up the NHS in 1948. This meant: - Free medical treatment to all British citizens 'from the cradle to the grave' - All hospitals brought under government control, paid for by taxes - National system of GPs set up to provide free treatment in local areas Doctors, led by the BMA, opposed the plans because they worried they would lose income. The Conservative Party opposed the NHS because it went against laissez-faire. However, by 1949, 187 million free prescriptions had been written.
Monasteries	National Health Service, free for all			
Philanthropists	Rich people who give money to help poor			
Prescriptions	Medicines			
Scutari	Town in Turkey	Changes to the NHS 1948-today		Several changes have been made to the NHS since 1948: 1. In 1952 charges for spectacles and dental treatment were introduced 2. A new building programme was introduced in the 1960s to replace out of date hospitals 3. The Conservative government led by Margaret Thatcher (1979-90) tried to cut the cost of the NHS but met public opposition
Squalor	Poor, dirty housing			
Want	Hunger			

Health and Medicine 6: Public Health			KPI 23 Medieval Public Health			KPI 24 Case Study: Medieval Coventry		
1489	Henry VII bans slaughterhouses in towns		Waste There was no waste collection so rubbish just built up in the streets. There were no sewers, so human waste was either thrown into the street or into a cesspit, often located near wells, which led to contamination. Water for drinking and washing was often taken from the same stream that people used to dispose of waste.			Not all towns were unhealthy, however. In Coventry, the council put measures in place to improve public health: 1. Every man had to clean the street in front of his house every Sunday or pay a 12 penny fine 2. Specified waste-disposal locations around the edge of the city 3. All latrines over local streams were ordered to be removed		
1532	Henry VIII allows the building of sewers							
1666	Great Fire of London							
1844	Chadwick sets up the Health of Towns Association		Animals Medieval towns were full of animals: horses for transport, cows for milk, etc. Animals created dung and attracted fleas, which spread disease. Butchers slaughtered animals in towns and left the waste to rot.					
1848	Public Health Act gives councils permission to act							
1875	Public Health Act forces councils to act		Town layout There was no regulation about where you could build so houses were crowded together and sanitation was limited. There was no 'zoning' of towns, so industry and houses were mixed, leading to water pollution by processes like tanning. Homes were covered with straw, providing a perfect breeding ground for rats.					
1875	Housing Act allows for demolition of slums							
1889	Charles Booth publishes poverty maps of London		KPI 25 Public Health in the Renaissance					
1899	Boer War begins							
1901	Seebohm Rowntree publishes York poverty survey							
<div>Boer War</div> <div>Cesspit</div> <div>Clean Party</div> <div>Contamination</div> <div>Demolish</div> <div>Dirty Party</div> <div>Great Depression</div> <div>Fitness Drives</div> <div>Health inspector</div> <div>Laissez-Faire</div> <div>Latrines</div> <div>Legislation</div> <div>Public health</div> <div>Quadrupled</div> <div>Ratepayers</div> <div>Sanitation</div> <div>Slaughterhouses</div> <div>Slum Clearance</div> <div>Unsanitary</div> <div>Zoning</div>	<div>British war in South Africa, 1899-1903</div> <div>Pit for collected sewage</div> <div>Group of politicians urging government to improve conditions in towns</div> <div>Infection</div> <div>Knock down</div> <div>Group of politicians opposing government action to improve public health</div> <div>1930s economic crisis</div> <div>Government attempts to make people do exercise</div> <div>Local government official in charge of health</div> <div>Political ideology opposing government interference in economy or society</div> <div>Toilets</div> <div>Laws</div> <div>The way the government keeps the whole population healthy</div> <div>Increased x 4</div> <div>People who pay council tax</div> <div>Hygiene / cleanliness</div> <div>Buildings where animals are killed for meat</div> <div>Government programme to demolish slums</div> <div>Unclean</div> <div>Putting factories etc in different areas to homes</div>	Government Action				The Great Fire of London		
		Towns during the Renaissance period were just as unhealthy as before, with regular outbreaks of the plague killing thousands. However, during the 16 th and 17 th centuries, the government took action to make towns more hygienic. For example: <ul style="list-style-type: none">- In 1489, Henry VII banned slaughterhouses from towns to stop the spread of disease- In 1532, Henry VIII gave town councils permission to introduce taxes to pay for sewers				In 1666, the Great Fire of London destroyed most of the buildings in London. After the fire, the city authorities ordered that homes should be rebuilt on wider streets to limit the spread of fire and disease. There were no major plague outbreaks in London after 1666.		
		KPI 26 Industrial Public Health				KPI 27 20 th Century Public Health		
		Laissez-Faire Although urbanisation led to people living in cramped housing during the Industrial period, the government believed in laissez-faire and did not do anything about poor conditions. As a result of overcrowding, poor water and gas supply, in 1842 the average Manchester labourer could expect to live to the age of just 17.				<div>Social Surveys</div> <div>When the Boer War broke out in 1899, the army rejected one in three recruits because they were unfit. This led to surveys investigating poverty, eg: Charles Booth (1889) found that 35% of London's population were living in poverty Seebohm Rowntree (1901) found that half of the population of York lived in poverty</div> <div>Impact of World War I</div> <div>After WW1, the Prime Minister David Lloyd-George promised 'Homes for Heroes' and built 250,000 modern homes. Although the Great Depression limited progress, by 1939 councils had built over 1 million new homes with electricity, running water, and indoor toilets.</div> <div>New Towns</div> <div>During the 1960s, slum clearance programmes destroyed cramped and unsanitary housing in city centres. New towns such as Yate outside Bristol were developed to allow people to live in greener and less polluted environments, with gardens, public parks, and pedestrian walkways separated from roads. The population of Yate quadrupled between 1965 and 2000.</div>		
		Edwin Chadwick was a member of the Clean Party, a group of politicians who believed people were poor because of ill-health and urged the government to improve living conditions. Chadwick set up the Health of Towns Association in 1844. He was opposed by the Dirty Party, who thought clean up was too expensive for ratepayers.						
		Government Action Chadwick and the cholera epidemic forced the government to abandon laissez-faire and pass legislation to improve public health:						
		1848 Public Health Act	Gave councils permission to improve conditions if they wished, though by 1872 only 50 councils had a health inspector.					
		1875 Public Health Act	Forced councils to appoint health inspectors, provide clean water, build covered sewers, and collect rubbish					
		1875 Housing Act	Gave councils permission to demolish poor quality slum housing and replace it with more hygienic housing					
		KPI 28 21 st Century Public Health						
		Campaigns			Fitness Drives		Healthy Eating	
		In the 21 st Century, governments have taken action to improve public health by encouraging people to live healthier lifestyles, for example by stopping smoking.			The NHS has attempted to reduce costs by encouraging people to live healthier lives. For example, 'Walking for Health' encourages people to walk 10,000 steps per day and provides support to help them meet this target.		Governments have also targeted diet. The 'Five-a-Day' campaign attempted to get people to eat five fruit or veg a day to reduce the risk of heart disease or cancer.	

Module 4 Knowledge Organiser

KP1: Understand the tools and techniques that can be used to initiate and plan solutions:

1.1

The phases of the project life cycle and the tasks carried out in each phase i.e.

- a. initiation
- b. planning
- c. execution
- d. evaluation

2. the advantages of following a project life cycle

KP1.2 The interaction and iteration between the phases of the project life cycle

KP1.3 The inputs and outputs of each phase of the project life cycle.

Resources / Information
<http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/>

KP2(2.2)

Undertake iterative testing for i.e.

1. functionality, how the various aspects of the solution work
2. usability, how easily the user can use the aspects of the solution
3. accessibility, how the solution caters for 'users with a variety of different needs and abilities'
4. creating and using a test plan i.e.
 - a. test number
 - b. test type (e.g. what are you testing)
 - c. expected result
 - d. actual result/evidence
 - e. resolution
 - f. retest number/evidence
 - g. using i.e.
 - i. normal data
 - ii. erroneous data

KP3 (5.1)

Use most of the functions mentioned below: date, edit, delete and process data using appropriate software tools and techniques including:

1. spreadsheet software i.e.
 - a. functions i.e.
 - i. arithmetic and rounding (SUMPRODUCT, ROUNDUP, ROUNDDOWN, ROUND)
 - ii. decision making and error-trapping (IF, IFERROR)
 - iii. lookup (VLOOKUP, INDEX, INDIRECT, MATCH)
 - iv. joining/splitting and presenting text (CONCATENATE/CONCAT, TEXTJOIN, LEFT, RIGHT, UPPER, PROPER)
 - v. date/time (DATE, NOW)
 - vi. counting and adding cells that meet certain criteria (COUNTIF, SUMIF, SUBTOTAL)
 - b. absolute cell referencing
 - c. linking worksheets
 - d. what if analysis
 - e. macros i.e.
 - i. close/open objects
 - ii. carry out repetitive processes
 - iii. print and close
 - f. import data from different sources i.e.
 - g. Hyperlink internal and external documents
 - h. Password protect appropriate documents

KP4 (4.5) Current legislation, its implications and applications i.e.

- ☑ Current relevant IT legislation at time of delivery i.e.
 - o Legal i.e. protection of; individuals, organisations, technological equipment, information, and intellectual property
 - o Ethical and moral i.e. avoiding defamation of character, misuse of information and equipment
- KP 4.6 Importance of validity, reliability and bias when collecting and using data and information

IMPORTANT Ideas

Equations: Always use 'balancing' (whatever you do to one side, you must do to the other side.) Check your final answer by substitution. Answers can be negative or decimal.

Solving Inequalities: Unless you are multiplying or dividing by a negative you use exactly the same method as equations for solving. If you have a double inequality to solve, just split it into two separate ones and solve.

Sequences: Whatever the sequence goes up in tells you the first part of the nth term rule.

Changing the Subject: also called 'rearranging'. Use balancing to get the given letter on its own.

Key Words

Integer A whole number

Expression Contains unknown value but no equals sign.

For example: $3x - 2$

Equation Contains unknowns and can be solved.

For example: $27 = 6x + 3$

Formula Links one value to one or more other value.

For example: $V = \pi r^2 h$

Identity Always true no matter what values are substituted

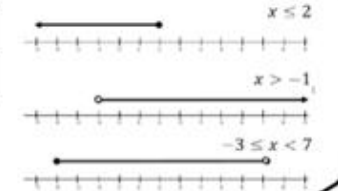
For example: $(a + b) = (b + a)$

Key Facts

Inequalities

$<$	Less than	\leq	Less than or equal to
$>$	Greater than	\geq	Greater than or equal to

Fill the circle if it is a \leq or \geq .
Leave it empty if it is a $<$ or $>$



Equations

$7x + 4 = 25$ write the equation
 $7x + 4 - 4 = 25 - 4$ subtract 4 from both sides
 $7x = 21$ simplify
 $7x \div 7 = 21 \div 7$ divide both sides by 7
 $x = 3$ simplify

$6x + 7 = 4x + 19$ write the equation
 $6x - 4x + 7 = 4x - 4x + 19$ subtract $4x$ from both sides
 $2x + 7 = 19$ simplify
 $2x + 7 - 7 = 19 - 7$ subtract 7 from both sides
 $2x = 12$ simplify
 $2x \div 2 = 12 \div 2$ divide both sides by 2
 $x = 6$ simplify

$3(x + 1) = 21$
 $3x + 3 = 21$ expand the brackets
 $3x + 3 - 3 = 21 - 3$ subtract 3 from both sides
 $\frac{3x}{3} = \frac{18}{3}$ divide both sides by 3
 $x = 6$

Sequences

A sequence has an n^{th} term of $3n + 1$.
Find the first 5 terms.

$n^{\text{th}} = 3n + 1$
 $1^{\text{st}} = 3 \times 1 + 1 = 4$
 $2^{\text{nd}} = 3 \times 2 + 1 = 7$
 $3^{\text{rd}} = 3 \times 3 + 1 = 10$
 $4^{\text{th}} = 3 \times 4 + 1 = 13$
 $5^{\text{th}} = 3 \times 5 + 1 = 16$

Notice that the sequence produced goes up by 3 each time and the n^{th} term rule starts with $3n$.

Important Ideas

- You need to memorise the various formulae for Area and Volume
- If you are given the area or volume and asked to find a length, you will need to rearrange the formula at some point.
- Arc lengths and Sector Areas are just fractions of the Circumference and Area of the circle.
- Area scale factors are the length scale factors squared.
- Volume scale factors are the length scale factors cubed

Key Words

Circumference: The perimeter of a circle.

Arc: Part of a circumference.

Sector: A part of the circle enclosed by two radii (Looks like a slice of cake!).

Cross Section/Face: The 2D shape we get when cutting through a 3D shape.

Prism: A 3D shape with the same cross section along its length.

Cylinder: A circular faced prism.

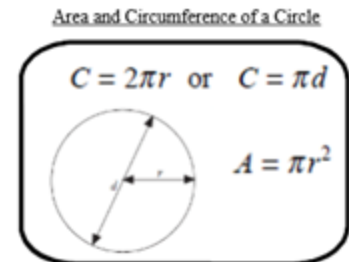
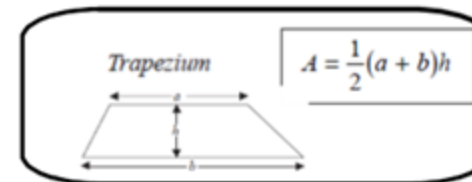
Cone: Circular base, tapers to a single vertex.

Trapezium: A four sided shape (quadrilateral) with one pair of parallel sides.

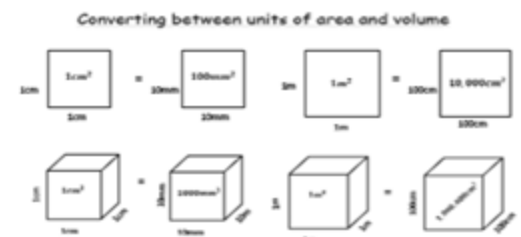
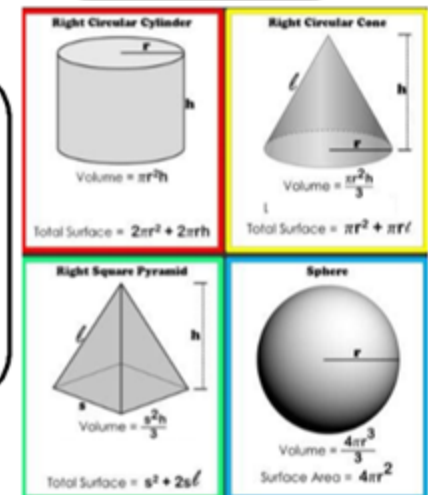
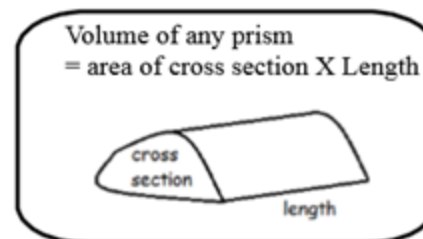
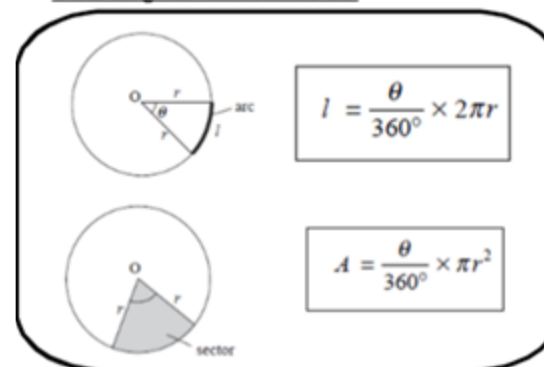
Pyramid: The base is a polygon, the sides are triangles, meeting at the top.

Sphere: A 3D object shaped like a ball.

Key Facts



Arc Length and Sector Area



BTEC SPORT – Knowledge Organiser - - Module 4 Body Systems

Long-term adaptations of the Skeletal and Muscular system to exercise

Skeletal Adaptations		Muscular Adaptations	
Increased Bone Density	Bones become thicker and heavier which prevents fractures from occurring.	Hypertrophy	Muscles adapt to training by increasing in size. Muscle fibres tear with exercise and grow back thicker and stronger.
Increased thickness of hyaline cartilage	Hyaline cartilage covers the ends of long bones and acts as a shock absorber.	Skeletal Muscles adapt	After substantial exercise skeletal muscles become more efficient at using oxygen and removing carbon dioxide.
Increased stability of joints and strength of connective tissue	Stronger muscles surrounding joints helps to support them. Regular exercise helps people lose weight which reduces the pressure on joints. Exercise and stretching helps joints move freely and strengthens ligaments and tendons.	Increased number of mitochondria	Most cells in the body contain mitochondria. These are small cells that burn food to produce energy. Exercise increases the number and size of the mitochondria
Decreased risk of Osteoporosis	Osteoporosis is a lack of calcium in the bones causing them to become brittle and more likely to break.	Improved Posture	Core muscles in the body become stronger with exercise and help to support your skeleton and hold it upright.

Short-term effects of exercise on the Cardiorespiratory System

In order to supply the extra oxygen needed in blood to fuel the working muscles, the respiratory system has to work harder. To do this we breathe more quickly	Increased Tidal Volume	As muscular activity increases, the production of carbon dioxide increases (a waste product) resulting in increased Tidal Volume Tidal Volume is the amount of air inhaled and exhaled with each breath.
Lactic acid builds up in the muscles during short bursts of high intensity exercises. It is generated when there are not enough oxygen molecules to completely breakdown glucose in the body. It is a waste product, which can cause a burning sensation in the muscles. Think about how it feels when you run the 300M in athletics.	Re- distribution of blood flow	When exercising blood is directed towards the working muscles and away from non-vital organs e.g. the stomach. This is done via the vasoconstriction (narrowing) of arterioles supplying inactive parts of the body and vasodilation (opening) of arterioles supplying skeletal muscle with more blood and nutrients
This happens to get more oxygenated blood to working muscles. This is due to increased heart rate (beats per minute) and increased stroke volume.	Increased Blood pressure	As the cardiovascular system works harder to deliver more oxygen and glucose to the muscles (systolic pressure rises and diastolic pressure remains the same)

Biology 3: Infection and Response TRIPLE KNOWLEDGE ORGANISER

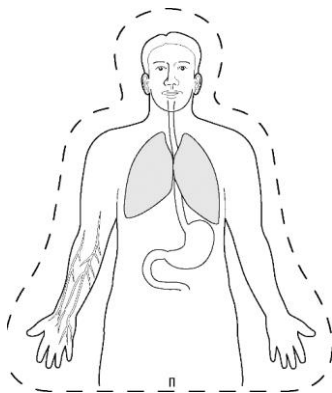
KPI B19 p47-48

Disease	Pathogen	How it is spread	Effect	Prevention/ Control
Measles	Virus	Droplets from sneezes and coughs	Can be fatal	Vaccination of children
HIV	Virus	Sexual contact, needle exchange	Damages some white blood cells	Antiretroviral drugs when infected
Tobacco Mosaic Virus	Virus	Direct contact	Mottling of leaves, reduces photosynthesis	
Salmonella	Bacteria	Infected food	Fever, abdominal cramps, diarrhoea, vomiting	Vaccination of poultry (chickens).
Gonorrhoea	Bacteria	Sexual contact	Discharge from penis/ vagina, pain when urinating	Controlled by antibiotics . Spread prevented by condoms .
Rose Black Spot	Fungus	Spores carried by water or wind	Leaves turn yellow, fall early. Photosynthesis reduced.	Treated by fungicides or destroying affected leaves .
Malaria	Protist	By a vector – mosquito	Fever, can be fatal.	Preventing mosquitos from breeding , using mosquito nets .

KPI B20

Trachea and Bronchi
Produces **mucus** to **trap pathogens**.
Contains **cilia** to

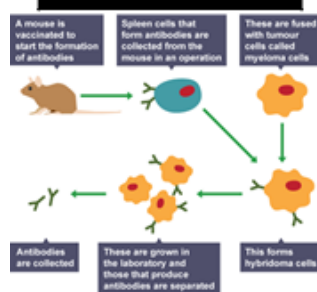
Stomach
Contains **hydrochloric acid** to destroy



Nose
Contains **hairs** and **mucus** to **trap**

Skin
A **physical**

KPI B24 p53-54



KPI B20 p49

Pathogen	A microorganism that causes disease .
Bacteria	A type of pathogen that produces toxins that damage tissues .
Viruses	A type of pathogen that lives and replicates within cells and causes cell damage . It is difficult to kill viruses without damaging cells .
Antibodies	Some white blood cells (lymphocytes) produce antibodies. These bind to pathogens and destroy them or stick them together .
Antitoxins	Some white blood cells (lymphocytes) produce antitoxins. Antitoxins neutralise toxins .
Antibiotics	Antibiotics kill bacteria . Specific antibiotics should be used for specific bacteria . Some bacteria are resistant to antibiotics. Do not kill viruses .
Painkillers	Painkillers relieve symptoms but don't kill pathogens .
Phagocytosis	Some white blood cells (phagocytes) engulf pathogens .

KPI B22 p51

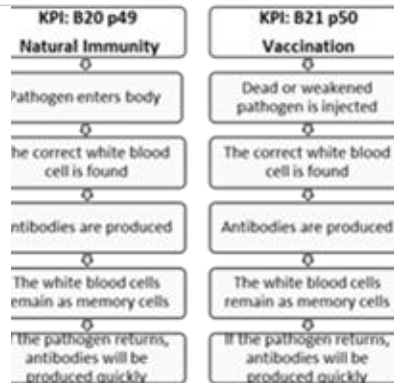
Aspirin	Originates from the willow tree.
Digitalis	A heart drug . Originates from foxglove plants.
Penicillin	Discovered by Alexander Fleming from the Penicillium fungus.
New drugs	Most new drugs are synthesised by chemists in the pharmaceutical industry . The starting point may be a chemical extracted from a plant .

KPI B22 p52

Trial Stage	Purpose
1. Preclinical – cells, animals	Test for toxicity and efficacy before testing humans
2. Healthy volunteers	Very low doses to test for toxicity .
3. Patients	Larger groups. Test for toxicity, efficacy and dose . Placebos may be used in a double-blind trial .

KPI B22 p52

Placebo	A drug with no active ingredients , designed to mimic a real drug . Used to test if the effects of a drug on a patient are just psychological .
Double-blind trial	The volunteers do not know which group they are in, and neither do the researchers, until the end of the trial
Toxicity	How harmful the drug is. May have dangerous side effects .
Efficacy	How effective the drug is.
Dose	The amount of the drug given to the patient.



Chemistry 1: Atomic Structure KNOWLEDGE ORGANISER (triple)

KPI:1 (p12 - 14)

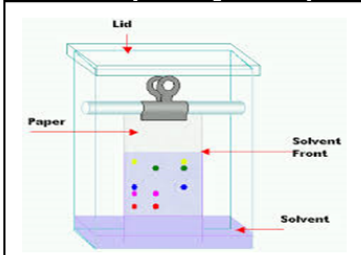
Describe elements and compounds

All substances are made up of **atoms**
Elements contain only one type of atom
Compounds contain more than one type of atom, that are chemically bonded together

Particle	Relative Mass	Charge
Proton	1	+1
Neutron	1	0
Electron	Very small	-1

KPI:2 (p16 - 18)

Describe separating techniques



Mixtures can be separated by filtration, crystallisation, distillation and chromatography
 Filtration separates insoluble solids from liquids
 Crystallisation separates a solid that has dissolved into a liquid
 Distillation separates a mixture of liquids
 Chromatography separates substances in a liquid

KPI:3 (p19)

History of the atom

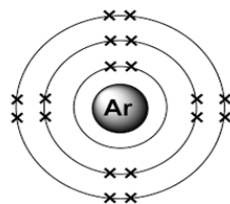
John Dalton	Described atoms as solid spheres
J J Thomson (1887)	Concluded that atoms were not solid, by measuring their charge and mass which led to the plum pudding theory
Rutherford (1909)	Alpha particle scattering experiment, evidence for the nuclear model
Bohr	Suggested that the electrons in an atom were contained in shells

KPI:4 (p20)

Electron structure

Shells fill from 1 to 2 and so on.
 1st shell can carry 2 electrons
 2nd shell can carry 8 electrons
 3rd shell can carry 8 electrons

Argon – is in group 0. It has a proton number of 18 therefore it has 18 electrons.
 2,8,8



KPI: 6 (p22)

The periodic table

- 100 elements
- Elements placed in order of their atomic (proton) number
- Each group has different characteristics
- Metals and non-metals have different characteristics

KPI:5 (p13)

Define and calculate the relative atomic mass

- Atomic number = number of protons (= number of electrons)
- Mass number = number of protons + neutrons
- Atoms are neutral as they have the same number of protons and electrons
- Ions are atoms that gain or lose electrons
- Isotopes are atoms of the same element with different numbers of neutrons

Calculating atomic mass.

$$\text{RAM (Ar)} = \frac{\text{sum of isotope abundance} \times \text{isotope mass number}}{\text{sum of abundances of all the isotopes}}$$

Example: Copper has 2 isotopes. Cu-63 = 69.2% Cu-65 = 30.8%

$$\text{RAM} = \frac{(69.2 \times 63) + (30.8 \times 65)}{69.2 + 30.8} = 63.6$$

KPI: 7 (p24 - 26)

Group Properties

Group 0	The noble gases are inert, colourless gases
Group 1	Alkali metals are reactive, soft metals Increase in reactivity down the group, because the outer electron is lost more easily as the attraction between the nucleus and the electron decreases
Group 7	The halogens are non-metal with coloured vapours They become less reactive down the group as it is harder to gain an extra electron because they are further from the nucleus

KPI: 8 (p 23)

Properties of transition metals

The transition metals have the following properties in common:

- They form coloured compounds.
- They are good conductors of heat and electricity.
- They can be hammered or bent into shape easily.
- They are less reactive than alkali metals such as sodium.
- They have high melting points - but mercury is a liquid at room temperature.

Chemistry 1: Atomic Structure KNOWLEDGE ORGANISER (trilogy)

KPI:1 (p96 - 97)

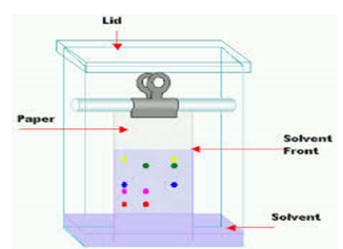
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Neutron	1	0
Electron	Very small	-1

KPI:2 (p100-102)

Describe separating techniques



Mixtures can be separated by filtration, crystallisation, distillation and chromatography
 Filtration separates insoluble solids from liquids
 Crystallisation separates a solid that has dissolved into a liquid
 Distillation separates a mixture of liquids
 Chromatography separates substances in a liquid

KPI:3 (p103)

History of the atom

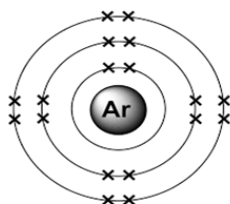
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KPI:4 (p104)

Electron structure

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KPI: 6 (p106)

The periodic table

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KPI:5 (p97)

Define and calculate the relative atomic mass

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KPI: 7 (p108 – 110)

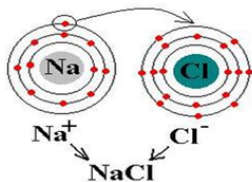
Group	Properties
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Chemistry 2: Bonding KNOWLEDGE ORGANISER (triple)

KPI:C9 (p28 - 30)

Describe ionic bonds and ionic compounds

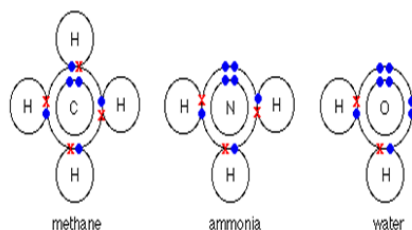
Ionic Compounds Are Balanced. Table salt is an example of an ionic compound. Sodium and **chlorine** ions come together to form **sodium chloride**, or **NaCl**. The sodium atom in this compound loses an electron to become Na^+ , while the **chlorine** atom gains an electron to become Cl^- .



KPI:C10 (p31 - 32)

Formation of covalent compounds

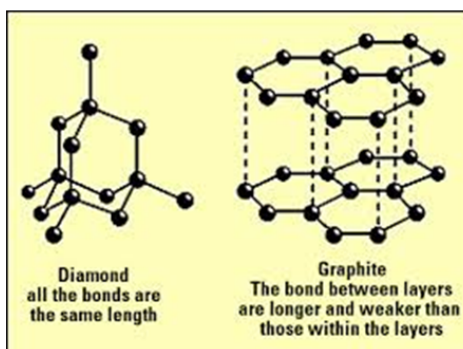
A **covalent compound** is made when two or more nonmetal atoms bond by sharing electrons. The shared electrons between two nonmetal atoms is called a **covalent bond**. **Covalent** bonds are formed when two atoms begin sharing electrons. The electrons are attracted to the positively charged nuclei of the atoms.



KPI:C11 (p33 - 34)

Describe the structure and property of giant covalent compounds

Giant covalent structures contain a lot of non-metal atoms, each joined to adjacent atoms by **covalent** bonds. The atoms are usually arranged into **giant** regular lattices - extremely strong **structures** because of the many bonds involved.



KPI:C12 (p33)

Polymers

Polymers are very large molecules made when many smaller molecules join together, end to end. The smaller molecules are called **monomers**.

In general:

lots of monomer molecules \rightarrow a polymer molecule

The polymers formed are long chains of repeating units. For example poly(ethane) has a molecular formula of the polymer is $(\text{C}_2\text{H}_4)_n$

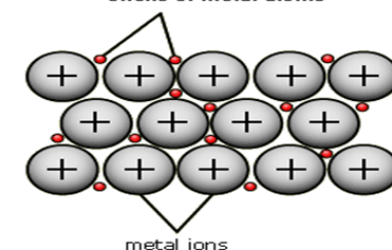
KPI:C13 (p35)

Describe the structures and bonding in metals

Metallic bonding is the force of attraction between delocalised electrons and the metal atoms. There are strong forces of electrostatic attraction between the positive metal ions and the shared negative electrons

- Most metals are solid at room temperature
- They are good conductors of electricity and heat
- They are malleable
- Alloys are harder than pure metals

free electrons from outer shells of metal atoms



KPI: C14 (p36 - 37)

Describe the properties of the three states of matter

solid	liquid	gas
● rigid	● not rigid	● not rigid
● fixed shape	● no fixed shape	● no fixed shape
● fixed volume	● fixed volume	● no fixed volume
cannot be squashed	cannot be squashed	can be squashed

Chemistry 3: Quantitative Chemistry KNOWLEDGE ORGANISER (triple)

KPI:C16 (p43)

Describe the conservation of mass, explaining the mass changes involving gases and balance equations

Conservation of mass

Atoms are the smallest particles of an element that can take part in a chemical reaction. During any chemical reaction no particles are created or destroyed: the atoms are simply rearranged from the reactants to the products. The products may have different properties to the reactants.

Mass is never lost or gained in chemical reactions. We say that mass is always **conserved**. In other words, the total mass of products at the end of the reaction is equal to the total mass of the reactants at the beginning.

This fact allows you to work out the mass of one substance in a reaction if the masses of the other substances are known.

KPI:C17 (p41 - 42)

Calculate the formula mass of compounds and relate this to moles and Avogadro's constant

Chemists measure the amount of a substance in a unit called 'the **mole**'. This is a convenient way of counting atoms. It allows chemists to make predictions about the masses of different substances that are involved in reactions.

One mole is the **Avogadro number of particles** (atoms, molecules, ions or electrons) in a **substance**.

KPI:C18 (p44 - 45)

Calculate the masses of reactants or products, identifying which reactant is limiting or in excess

A reaction stops when all the particles of one of the reactants are used up. In a reaction involving two reactants:

The limiting reactant is the one that is all used up at the end of the reaction

The reactant in **excess** is still there at the end of the reaction (although in a smaller amount than at the start). For example, magnesium reacts with hydrochloric acid. When the reaction is over:

Magnesium is the limiting reactant if it is all gone at the end

Hydrochloric acid is the limiting reactant if some magnesium is left at the end

KPI:C19 (p44)

Use moles to calculate the balancing numbers in an equation

Calculate the number of moles of carbon dioxide molecules in 22 g of CO₂. A_r (relative atomic mass) of C = 12, A_r of O = 16. M_r (relative formula mass) of carbon dioxide = 12 + 16 + 16 = 44, so the number of moles = 22 ÷ 44 = **0.5 mol**

KPI:C20 (p46)

Calculate the concentrations of solution and use these in titration calculations

If you know the concentration of one of the reactants present in a titration, you can work out the concentration of the other reactant.

Worked example 1

25 cm³ of dilute hydrochloric acid is neutralised by 20 cm³ of 0.5 mol/dm³ sodium hydroxide. What is the concentration of the hydrochloric acid?

Step 1: Convert volumes to dm³

25 cm³ of HCl = 25 ÷ 1000 = 0.025 dm³

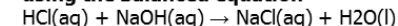
20 cm³ of NaOH = 20 ÷ 1000 = 0.020 dm³

Step 2: Determine the number of moles of sodium hydroxide

moles of NaOH = concentration × volume

moles of NaOH = 0.5 × 0.020 = 0.010 mol

Step 3: Work out the number of moles of acid using the balanced equation



In this reaction, one mole of HCl reacts with one mole of NaOH. This is a 1:1 ratio.

Therefore, in our titration, 0.010 mol of NaOH must neutralise 0.010 mol of HCl.

Step 4: Calculate the concentration of the acid

concentration of HCl = number of moles ÷ volume

concentration of HCl = 0.010 ÷ 0.025 = 0.4 mol/dm³

The concentration of the HCl is **0.4 mol/dm³**.

KPI:C21 (p49)

Calculate percentage yield and explain loss of yield in reactions

In a manufacturing process 12 tonnes of product are predicted but only 10 tonnes are obtained. What is the percentage yield?

Percentage yield = (actual yield × 100%) / predicted yield

percentage yield = (10 × 100) / 12

percentage yield = (1000) / 12 = **83.3%**

KPI:C22 (p48)

Calculate atom economy and describe its economic and environmental importance

$$\begin{aligned}\% \text{ Atom Economy} &= \frac{\text{Molar Mass of Product}}{\text{Molar Mass of All Reactants}} \times 100\% \\ &= \frac{206.29 \text{ g/mol}}{(134.22 + 102.09 + 2.02 + 28.01) \text{ g/mol}} \times 100\% \\ &= \frac{206.29 \text{ g/mol}}{266.34 \text{ g/mol}} \times 100\%\end{aligned}$$

% Atom Economy = 77%

KPI:C23 (p46)

Calculate the volume of gases

One mole of any gas has a volume of 24 dm³ or 24,000 cm³ at **rtp** (room temperature and pressure). This volume is called the **molar volume of a gas**.

This equation shows how the volume of gas in dm³ at rtp is related to the number of moles:

volume of gas at rtp = number of moles × 24

SPANISH YEAR 9 MODULE 4 : INTERESES E INFLUENCIAS – MO 1 – 9 Know the key vocabulary for the module

La paga Mis padres me dan... Mi madre / padre me da... ...euros a la semana / al mes Gasto mi paga en... También compro...	Pocket money My parents give me... My mum / dad gives me... ...euros a week / a month I spend my pocket money on... I also buy...	saldo para el móvil ropa / joyas / maquillaje zapatillas de marca videojuegos / revistas	credit for my phone clothes / jewellery / make-up designer trainers computer games / magazines
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Mis ratos libres las actividades de ocio Tengo muchos pasatiempos. A la hora de comer... Cuando tengo tiempo... Después del insti... Los fines de semana... Mientras desayuno / como... juego al billar / fútbolin monto en bici / monopatín quedo con mis amigos voy de compras mi pasión es la música / la lectura Suelo... descansar escuchar música / la radio	My free time leisure activities I have lots of hobbies. At lunchtime... When I have time... After school... At weekends... Whilst I have breakfast / lunch... I play billiards / table football I ride my bike / I skateboard I meet up with friends I go shopping my passion is music / reading I tend to / I usually ... rest listen to music / the radio	hacer deporte ir al cine leer libros / revistas / periódicos salir con amigos usar el ordenador ver la tele Es divertido / relajante / sano Soy creativo/a / perezoso/a / sociable Soy adicto/a a... me ayuda a relajarme me ayuda a olvidarme de todo me hace reír necesito comunicarme / relacionarme con otra gente	do sport go to the cinema read books / magazines / newspapers go out with friends use the computer watch TV It's fun / relaxing / healthy I'm creative / lazy / sociable I'm addicted to... it helps me to relax it helps me to forget everything it makes me laugh I need to have contact with other people
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La música Me gusta el soul / el rap / el dance / el hip-hop / el pop / el rock / el jazz / la música clásica / electrónica asistir a un concierto cantar (una canción) tocar el teclado / el piano /	Music I like soul / rap / dance/ hip-hop / pop / rock / jazz / classical / electronic music to attend a concert to sing (a song) to play the keyboard / the piano /	la batería / la flauta / la guitarra / la trompeta mi cantante preferido/a es... un espectáculo una gira (mundial)	the drums / the flute / the guitar / the trumpet my favourite singer is... a show a (world) tour
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El deporte Soy / Era... (bastante / muy) deportista miembro de un club / un equipo aficionado/a / hincha de... un(a) fanático/a de... juego al... jugué al... jugaba al... bádminton / baloncesto béisbol / balonmano críquet / fútbol hockey / ping-pong rugby / tenis / voleibol hago... hice... hacia... baile / boxeo / ciclismo deportes acuáticos equitación / escalada gimnasia / judo kárate / natación patinaje sobre hielo piragüismo / remo	Sport I am / I used to be... (quite / very) sporty a member of a club / a team a fan of... a ... fanatic I play... I played... I used to play... badminton / basketball baseball / handball cricket / football hockey / table tennis rugby / tennis / volleyball I do... I did... I used to do... dancing / boxing / cycling water sports horseriding / climbing gymnastics / judo karate / swimming ice skating canoeing / rowing	submarinismo tiro con arco voy... fui... iba... a clases de... de pesca ya no (juego)... todavía (hago)... batir un récord correr entrenar jugar un partido contra... marcar un gol montar a caballo participar en un torneo patinar mi jugador(a) preferido/a es... su punto culminante fue cuando... el campeón / la campeona la temporada	diving archery I go... I went... I used to go... to ... classes fishing (I) no longer (play)... (I) still (do)... to break a record to run to train to play a match against... to score a goal to go horseriding to participate in a tournament to skate my favourite player is... the highlight (of his/her career) was when... the champion the season
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La tele

(No) Soy teleadicto/a.

Mi programa favorito es...

un concurso

un programa de deportes

un reality

un documental

un culebrón / una telenovela

una comedia

una serie policiaca

el telediario / las noticias

Me gustan las comedias.

TV

I'm (not) a TV addict.

My favourite programme is...

a game / quiz show

a sports programme

a reality TV show

a documentary

a soap

a comedy

a crime series

the news

I like comedies.

Es / Son...

aburrido/a/os/as

adictivo/a/os/as

divertido/a/os/as

entretenido/a/os/as

tonto/a/os/as

informativo/a/os/as

malo/a/os/as

emocionante(s)

interesante(s)

It is / They are...

boring

addictive

fun

entertaining

silly

informative

bad

exciting

interesting

Las películas

un misterio

una película de amor

una película de terror

una película de acción

una película de aventuras

Films

a mystery

a love film

a horror film

an action film

an adventure film

una película de animación

una película de ciencia ficción

una película de fantasía

una película extranjera

an animated film

a sci-fi film

a fantasy film

a foreign film

Nacionalidades

americano/a

argentino/a

británico/a

chino/a

griego/a

italiano/a

mexicano/a

sueco/a

Nationalities

American

Argentinian

British

Chinese

Greek

Italian

Mexican

Swedish

alemán/alemana

danés/danesa

español(a)

francés/francesa

holandés/holandesa

inglés/inglesa

irlandés/irlandesa

japonés/japonesa

German

Danish

Spanish

French

Dutch

English

Irish

Japanese

Temas del momento

he compartido...

he comprado...

he jugado...

he leído...

he oído...

he roto...

he subido...

¿Has probado...?

mi hermano ha descargado...

se ha estrenado...

la nueva canción

el último libro

Ya lo/la/los/las he visto.

No lo/la/los/las he visto todavía.

acabo de ver / jugar a...

Trending topics

I have shared...

I have bought...

I have played...

I have read...

I have heard...

I have broken...

I have uploaded...

Have you tried...?

my brother has downloaded...

...has been released.

the new song

the latest book

I have already seen it/them.

I haven't seen it/them yet.

I have just seen / played...

cuenta la historia de...

trata de...

combina el misterio con la acción

el argumento es fuerte / débil

la banda sonora es buena / mala

los actores...

los efectos especiales...

los gráficos...

los personajes...

las animaciones...

las canciones...

son guapos/as / guay

son estupendos/as / impresionantes

son originales / repetitivos/as

it tells the story of...

it's about...

it combines mystery with action

the plot is strong / weak

the soundtrack is good / bad

the actors...

the special effects...

the graphics...

the characters...

the animations...

the songs...

are good looking / cool

are great / impressive

are original / repetitive

Ir al cine, al teatro, etc.	Going to the cinema, theatre, etc.		
¿Qué vamos a hacer... esta tarde? esta noche? mañana / el viernes?	<i>What are we going to do... this afternoon / evening? tonight? tomorrow / on Friday?</i>	Es una película / obra de... ¿A qué hora empieza / termina? Empieza / Termina a las... Dos entradas para..., por favor. para la sesión de las... No quedan entradas. ¿Hay un descuento para estudiantes? Aquí tiene mi carné de estudiante.	<i>It's a ... film / play What time does it start / finish? It starts / finishes at... Two tickets for ..., please. for the ... showing / performance There are no tickets left. Is there a discount for students? Here is my student card.</i>
¿Tienes ganas de ir... a un concierto / un festival? a un espectáculo de baile? al cine / al teatro / al circo? ¿Qué ponen?	<i>Do you fancy going... to a concert / a festival? to a dance show? to the cinema / theatre / circus? What's on?</i>		

¿En el cine o en casa?	At the cinema or at home?		
(No) Me gusta ir al cine porque...	<i>I (don't) like going to the cinema because...</i>	las palomitas están ricas los asientos no son cómodos los otros espectadores me molestan ponen trailers para las nuevas pelis si vas al baño te pierdes una parte	<i>the popcorn is tasty the seats aren't comfortable the other spectators annoy me they show trailers for new films if you go to the toilet you miss part of it</i>
Prefiero ver las pelis en casa porque... el ambiente es mejor hay demasiadas personas la imagen es mejor en la gran pantalla las entradas son muy caras	<i>I prefer watching films at home because... the atmosphere is better there are too many people the picture is better on the big screen the tickets are very expensive</i>	tienes que hacer cola una corrida de toros en directo	<i>you have to queue a bull fight live</i>

Los modelos a seguir	Role models		
Admiro a...	<i>I admire...</i>	la pobreza / la homofobia los derechos de la mujer los derechos de los refugiados los niños desfavorecidos la justicia social	<i>poverty / homophobia women's rights the rights of refugees underprivileged children social justice</i>
Mi inspiración / idolo es...	<i>My inspiration / idol is...</i>	a pesar de sus problemas...	<i>despite his/her problems...</i>
...es un buen / mal modelo a seguir	<i>...is a good / bad role model</i>	ha batido varios récords	<i>he/she has broken several records</i>
Un buen modelo a seguir es alguien que...	<i>A good role model is someone who...</i>	ha creado...	<i>he/she has created...</i>
apoya a organizaciones benéficas	<i>supports charities</i>	ha ganado ... medallas / premios	<i>he/she has won ... medals / awards</i>
recauda fondos para...	<i>raises money for...</i>	ha sufrido varias enfermedades	<i>he/she has suffered several illnesses</i>
tiene mucho talento / éxito	<i>is very talented / successful</i>	ha superado sus problemas	<i>he/she has overcome his/her problems</i>
trabaja en defensa de los animales	<i>works in defence of animals</i>	ha tenido mucho éxito como...	<i>he/she has had lots of success as...</i>
usa su fama para ayudar a los demás	<i>uses his / her fame to help others</i>	siempre sonríe	<i>he/she always smiles</i>
se emborrachan	<i>they get drunk</i>	solo piensa en los demás	<i>he/she only thinks of other people</i>
se comportan mal	<i>they behave badly</i>		
se meten en problemas con la policía	<i>they get into trouble with the police</i>		
es amable / cariñoso/a / fuerte	<i>he/she is nice / affectionate / strong</i>		
lucha por / contra...	<i>he/she fights for / against...</i>		

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.