NEED TO KNOW BOOK

Year 10
Spring Term 2024

ALL SAINTS
ACADEMY PLYMOUTH

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Week A

Period	Monday	Tuesday	Wednesday	Thursday	Friday
Tutor					
1					
2					
3					
4					
5					
6 or Extra Curricular					

Week B

Period	Monday	Tuesday	Wednesday	Thursday	Friday
Tutor					
1					
2					
3					
4					
5					
6 or Extra Curricular					

Homework Expectations

You are expected to compete up to 1hour and 30 minutes of Homework per night. This is split into 3 subjects at 30mins each.

	3 x 30 Minute Sessions		
	Subject 1 30 mins	Subject 2 30 mins	Subject 3 30 mins
Monday	Science	Science	
Tuesday	English	English	French
Wednesday	History/Geography/Travel & Tourism		Maths : Sparx
Thursday	Option A	Option A	Maths : Sparx
Friday	Option B	Option B	Maths : Sparx

Where is my homework?

Maths sparx

You maths homework is found at www.sparxmaths.uk.
You will complete your Compulsory Homework on a Monday.
If you have completed over 80% and are stuck on your last few questions, your teacher will help you on Tuesday.

Science Educake

Your Science homework can be found at www.educake.co.uk. You will answer a series of questions once a week. When it comes to revising, you will have the option of picking a topic, reading an overview, and taking a quiz.

Other Subjects:

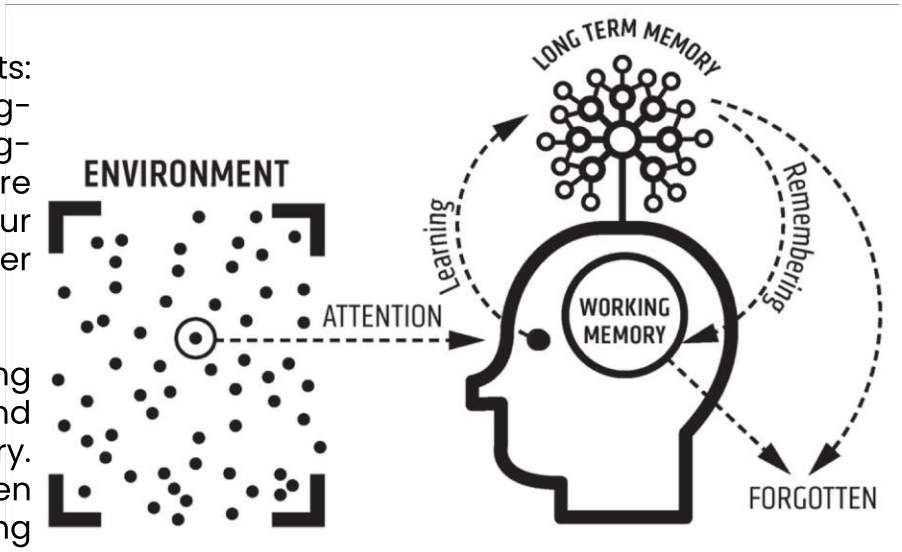
Homework for these subjects will be found in your Google Classroom in the form of a quiz. These quizzes are to test that you have learned the knowledge in your Need to Know booklet. We have high expectations of you and expect students to try their best and achieve the best possible marks. We will give rewards for excellent attainment and we will help everyone achieve by using after school interventions to make sure no one falls behind.

At All Saints, we are organised and don't make excuses for ourselves. If we know we have evening plans, we complete our homework the night before to make sure we are free to go to our planned event. We always want the best for ourselves and my teachers want the same.

Memory

Your memory is split into two parts: the working-memory and the long-term memory. Everybody's working-memory is limited, and can therefore become easily overwhelmed. Your long-term memory, on the other hand, is effectively limitless.

You can support your working memory by storing key facts and processes in long-term memory. These facts and processes can then be **retrieved** to stop your working memory becoming overloaded.

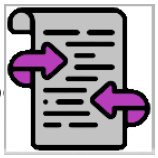


Need to know booklets are a key way to help you learn. Each booklet has the key information that needs to be memorised to help you master your subject and be successful in lessons.

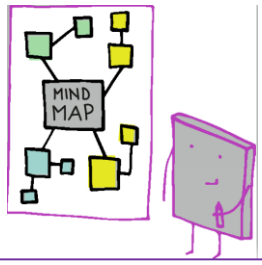
There is strong scientific evidence from cognitive psychology that shows the benefits of **self-quizzing** in promoting **retrieval strength**. This is your ability to quickly recall key facts related to your subject or topic

How should I self-quiz and how often?

There are lots of different ways to learn the material in your need to know b



You could:



Draw a mind map, jotting down everything that you can remember from the need to know booklet.

Cover up one section of the need to know booklet and try and write out as much as you can from memory.

Make flash cards based on the need to know booklet and ask someone to quiz you.

SENTENCES.
HAND
ARTICULATE.
PROJECT
Eye contact

Make up mnemonics to help you remember key facts, then write these out from memory.

Making revision notes and self-quizzing will help you be a more successful learner.

Visit our amazing careers section of the ASAP website or use your UNIfrog account to help you make those all important decisions for your future.

Post 16 pathways of Plymouth — Sixth forms — Apprenticeships — Employment — Resources

Support — Opportunities — Choosing a career — Parents guide —Writing a CV— Employability skills

Year 10: My Identity and Art

AQA Assessment Objective Checklist

AO1 Ideas & Artist Research

Develop ideas through investigations, demonstrating critical understanding of sources.

- I have researched **a wide range** of artists' craftsmen and designers.
- I have worked **in the style** of the artists using my own photographs.
- I have written about the artist and how they have informed and influenced my practice.

AO2 Experimenting with materials

Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.

- I have experimented with a wide range **of relevant media** and techniques.
- All my work has been refined.
- I have pushed ideas to their full limitations to show the process and development of my ideas.

AO3 Recordings and drawings

Record ideas, observations and insights relevant to intentions as work progresses.

- I have **drawn from observation** using a range of different media.
- I have worked from my **own photographs**.
- I have used **annotation to explain the development** of my research and ideas.

AO4 Personal response/final piece

Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

- I have produced **my own** imaginative outcomes.
- My work shows **a clear connection** and a journey throughout my project.
- I have thought carefully about the **selection and presentation** of my work.

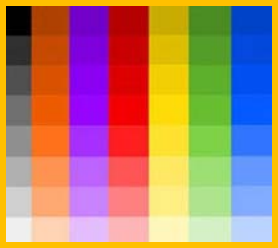
The Formal Elements: The Formal Elements of Art are the parts used to make a piece of art work. It is impossible to create a piece of art, even if it is only a doodle, without using some or all of them. The art elements are Line, shape, form, tone, texture, pattern, colour and composition. They are often used together and how they are organised in a piece of art determines what the finished piece

Line

A line is a path, left by a moving point. E.G. a pencil, or a paintbrush dipped in paint. A line can take on many forms. E.g. Horizontal, diagonal or curved. A line can be used

Tone

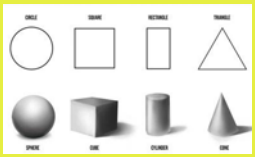
Tone means the lightness and darkness of something. This could be a shape and/or how dark or light a colour appears.



Shape & Form

A shape is an area enclosed by a line. It could be just an outline or it could be shaded in.

Form is a three dimensional shape such as a sphere, a cube or a cone.



Texture

Texture is the surface quality of something, the way something feels or looks like it feels. There are two types of texture, actual texture and visual texture.

Actual Texture: really exists so you can feel it or touch it.

Visual Texture: Created by using different marks to create the impression

Colour

There are three primary colours:

Red, Yellow, Blue

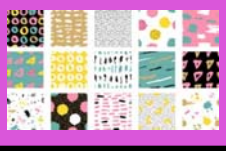
By mixing any two primary colours together, you get secondary colours.

Orange, Green and

Pattern

Pattern is a design that is create by repeating lines, shapes and tones or colours.

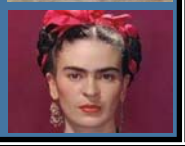
Patterns can be manmade such as a design on fabric or natural like the print on animal fur.



Art & Design

Frida Kahlo
6 July 1907 –– 13 July 1954

Frida Kahlo was a Mexican painter best known for her uncompromising and brilliantly coloured self-portraits that deal with such themes as identity, the human body, and death. Today, Kahlo is remembered for being a woman who broke all social conventions. Her defiance against needing to fit in is nothing less than admirable – both back then and even now.



Louis Jover
April 1967

Louis Jover is an Australian artist. He likes to work with used sheets of paper, which he assembles into a single, large canvas, on which he paints in inks, oils, and gouache. Sometimes, he uses pages from books in a fusion of text, painting, and collage. Jover also incorporates photography into his art, making it his own through his painting.

Gillian Wearing
10 December 1963

Gillian Wearing CBE, RA is an English conceptual artist, one of the Young British Artists, and winner of the 1997 Turner Prize. In 2007 Wearing was elected as lifetime member of the Royal Academy of Arts in London. Her statue of the suffragist Millicent Fawcett stands in London's Parliament Square.

Keywords & Vocabulary:

Composition	The position and layout of shapes on the paper
Line	Defines shape, the outer edges of something.
Tone	How dark or light a shape is.
Shape	The outline of objects.
Form	Appearing three-dimensional.
Pattern	A repeated shape or line.
Identity	Who a person is, or the qualities of a person or group that makes them different from others.
Mixed Media	Artwork in which more than one medium or material has been used.
Expressive	Effectively conveying thought or feeling.
Personality	The characteristic sets of behaviours, mental behaviours, and emotional patterns that evolve from biological and environmental factors.
Narrative	A narrative, story or tale is any account of a series of related events or experiences, whether non fictional or fictional.
Culture	The position and layout of shapes on the paper.
Symbolic	A mark, sign, or word that indicates, signifies, or is understood as representing an idea, object, or relationship.
Discrimination	Relating to bodily structure.
Conceptual Art	Artwork that is created in a public space, typically without official permission.
Adversity	A difficult or unpleasant situation.
Satire	The use of humour, irony, exaggeration, or ridicule to expose and criticize people's stupidity or vices

Equipment for bottle feeds:

- Feeding Bottles - Teats - Bottle caps - Bottle brushes - Steriliser
- Knife

The amount of milk given to babies depends on their weight. The calculation to see how much milk babies need is:

- Divide the amount of food needed each day by the number of feeds

Picture	Explanation of each step
	Wash hands with hot water and anti-bacterial soap. Clean the surface with anti-bacterial wipes.
	Fill the kettle and boil the required amount of water.
	Fill the bottle with the correct amount of boiling water and ensure that the bottle is placed on a flat surface to reduce the risk of spilling water or burning yourself.
	Measure the correct amount of formula powder and put into a sterilised bottle. Too little will mean lack of nutrients for the baby. Too much can lead to dehydration and too much salt causing kidney damage,
	Shake the bottle with the cap on to ensure the water and the formula are thoroughly mixed.
	Let the mixed feed cool. Test the temperature on your wrist to make sure it is cool enough to give to the baby.

List of safety procedures for preparing meals:

- Use knife blocks to store sharp knives safely
- Using different coloured chopping boards, one for meats, and one for other foods to avoid cross contamination
- Mopping up spillages as soon as they occur
- Using appliances that have curly flexes which make it difficult for an appliance to be pulled over
- Using a cooker guard
- Turning the handles of pots and pans inward to prevent burns scalds and spillages

List of safety procedures for preparing bottle feeds:

Effective hygiene practices are crucial to children's health and wellbeing because they prevent food poisoning. Hygiene falls in to three categories:

- Personal hygiene
- Environment/ equipment hygiene
- Sterilisation

Personal hygiene:

- Wash your hands with soap after handling food
- Never cough or sneeze on food
- Tie back long hair

Environment/ equipment hygiene:

- Surfaces (tables, worktops) should be wiped before and after food / bottle preparation
- All equipment should be kept clean and washed after use

Sterilisation:

- Choose the right sterilising method (steam or water)
- Wash the equipment to prepare it for the steriliser
- Follow instruction when sterilising equipment

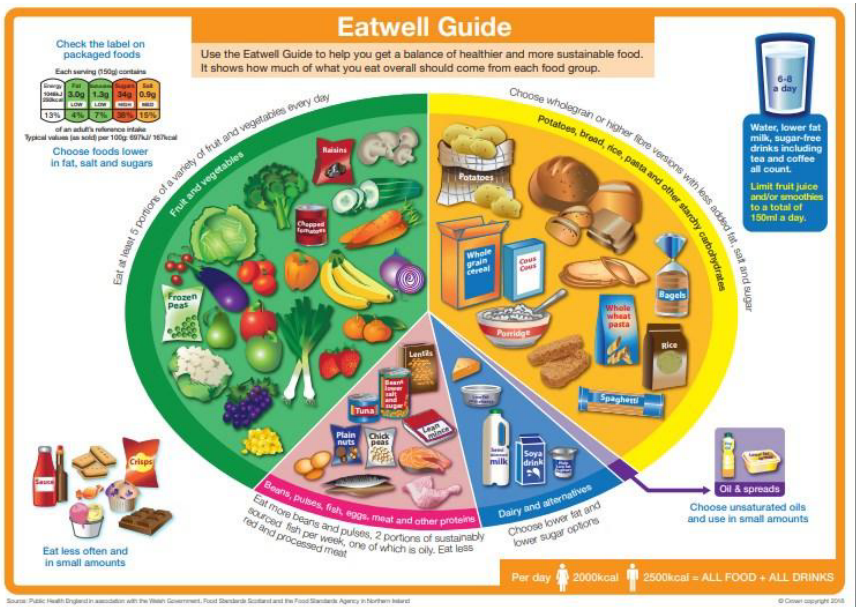
Eatwell Guide

The Government issues dietary guidelines to help people understand what is considered to be a healthy diet and develop their knowledge to make healthy choices for themselves and their children.

The Eatwell Guide gives a clear picture of the different food groups and the proportion that they should form in a persons diet. For example, people should eat more fruit and vegetables than sweets, chocolate or unhealthy snacks.

The Eatwell Guide does not apply to children under the age of 2 because they have different nutritional needs.

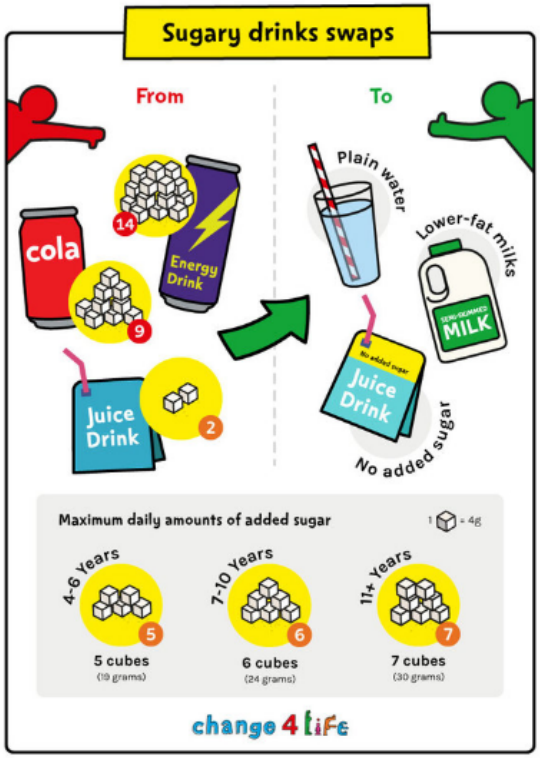
Between the ages of 2 and 5, children should gradually move to eating the same foods as the rest of the family in the proportions shown in the Eatwell Guide.



British Nutrition Foundation recommendations for a healthy diet:

- Balanced diet and portion control
- Limit processed foods/fats/snacks/sugar and fats— Children need high energy foods
- Encourage healthy foods/ snacks—increases healthy growth and their development

The British Nutrition Foundation guidance shows that children needs food that are high in nutrients which provide: protein, vitamins and minerals



Change4Life advises that children should limit their sugar intake to reduce risk of:

-Build up of harmful fat

- Weight gain
- Type 2 Diabetes
- Heart disease
- Some cancers
- Tooth decay

Change4Life gives advice on food and drink swaps for:

- Cereals
- Drinks
- Puddings/Desserts
- Snacks
- Yoghurts

Making healthy choices for children is very important for their health, growth and development. The government live well Healthy Eating advice recommends a diet should consist of:

- Meals based on starchy carbohydrates such as pasta, rice and potatoes
- Some lean protein such as meat, fish, eggs, beans, pulses and lentils
- At least five portions of fruit and vegetables
- Some milk and dairy, choosing reduced fat versions
- Drink water
- Cut down on sugary drinks (including fruit juices) and foods such as biscuits, cakes and fizzy drinks
- Cut down on salt in cooking and adding to food. Avoid processed or ready meals high in salt

TA3: LO3 3.2 The functions and sources of nutrients

Macro-nutrients- the structural and energy giving calorie component of food			
Type of nutrient	**Function**	**Food sources**	**RDA and Portions for 2-3 year olds**
Carbohydrates– broken down into glucose before they can be used by the body.	Provide energy and warmth. Complex Carbohydrates- provide energy slowly for a long period of time. Simple Carbohydrates– provide energy quickly for a short period of time.	Starches– Bread, pasta, potatoes, rice, cereals and beans Sugars– Fruit, honey, sweets, beet sugar and cane sugar	5 servings a day. At least one with each meal, plus snacks. Girls = 134g Boys = 145g
Proteins– made up of amino acids	Protein aids growth and repair of the body and muscular tissue. Also provides secondary source of energy.	Animal sources– Meat, poultry, fish, milk and eggs Vegetable sources– Soya, tofu, beans, pulses Other sources– Quorn and nuts	2-3 portions a day. 14.5g = 1 portion
Fats– some fats can be unhealthy and should be eaten in moderation.	Fats help to provide energy and warmth. Fats also protect internal organs and helps the body to absorb vitamin A, vitamin D and vitamin E. These vitamins are fat-soluble which means they can only be absorbed with the help of fats.	**Saturated fats**– Butter, milk, cheese, meat, palm oil, biscuits, ice-cream, chocolate **Unsaturated fats** (help to lower cholesterol) – Olive oil and olives, avocado and avocado oil, nuts and seeds (almonds, peanuts, cashew nuts and sesame seeds) **Polyunsaturated fats** (help to lower bad cholesterol)– Oily fish (sardines, salmon, mackerel, trout, herring) and Vegetable oils (corn oil, sunflower oi)	Less than 10% of fat of the diet a day

Micro-nutrients– includes vitamins and minerals that are essential for good health. They enable chemical reactions to occur in the body.			
Minerals	**Food source**	**Function**	**RDA and portions for 2-3 year olds**
Calcium	Milk, cheese, yoghurt, eggs, fish, pulses, wholegrain cereals, spinach and bread made with fortified flour.	Required for growth of bones and teeth. Important for nerve function to carry messages to the brain and muscles to move. Deficiency may lead to rickets and tooth decay.	350mg /day 0.35g /day
Iron	Liver, red meat, beans (kidney beans, edamame and chickpeas), eggs, dried fruit, fortified breakfast cereals and spinach.	Required to help form haemoglobin in the red blood cells, which transports oxygen around the body.	6.9mg/day
Sodium chloride	Salt, meat, fish, bread, processed food.	Important for water balance in the body and nerve function. Too much salt is bad for children, it should not be added to food for babies and young children during cooking or afterwards.	Sodium—0.8g/day Chloride—800mg/day

TA3: LO3 3.2 The functions and sources of nutrients

Micro-nutrients– includes vitamins and minerals that are essential for good health. They enable chemical reactions to occur in the body.

Vitamin	Food source	Function	Type	RDA and Portions for 2-3
A	Cheese, butter, eggs, oily fish, tomatoes and carrots	Promotes growth and development. Maintenance of good vision and healthy skin. Deficiency leads to: Skin conditions and impaired vision	Fat soluble	400ug/ a day
B	Meat, chicken, eggs, fish, green leafy vegetables, dates, pulses. Some breakfast cereals add Vitamin B to them.	Promotes healthy functioning of the nerves and muscles.	Water soluble (water intake needed)	Vitamin B6 =0.7 mg a day Vitamin B12 = 0.5 a day
C	Fruit– Oranges, strawberries and blackcurrants	Maintain health tissue and skin. Prevent disease. Deficiency leads to decreased resistance to infection and scurvy.	Water soluble	30mg /day
D	Oily fish and fish oil, egg yolk. Milk, margarine and some breakfast cereals. Sunlight on the skin helps to produce Vitamin D.	Maintain bones and teeth. Helps promote growth. Delay leads to bones which do not harden (rickets) and tooth decay.	Fat soluble	10mg /day
E	Cereals, egg yolk, seeds, nuts and oils	Promotes blood clotting and healing. Deficiency leads to delay in this.	Fat soluble	200mg
K	Whole grains (cereals, green vegetables, liver.	Promotes healing and needed for blood clotting.	Fat soluble	30mcg

Micro-nutrients– includes vitamins and minerals that are essential for good health. They enable chemical reactions to occur in the body.

Type of nutrient	Function	Food sources	RDA and Portions for 2 -3 year olds
Fibre	Encourages the body to remove waste products after it has been digested. Helps to prevent constipation, piles, irritable bowel syndrome and bowel cancer. Also improves digestive health.	Wholegrain breakfast cereals, whole wheat pasta, wholegrain bread and oats. Fruit such as berries, pears, melon and oranges. Vegetables such as broccoli, carrots and sweetcorn. Peas, beams and pulses. Potatoes with the skin on.	15g a day
Water	Helps to regulate body temperature and carry nutrients and oxygen to cells. Removes waste products from kidneys. Protects organs and tissues. Prevents constipation. Lubricates joints making them easier to move.	Water, fruit juice, milk and fruit. Also included in some vegeta-bles.	1300mg/day

Government Dietary Requirements for each nutrient

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/618167/government_dietary_recommendations.pdf

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1165724/SACN-Feeding-young-children-aged-1-to-5-years--Annex-1.pdf

TA 3: LO3 3.3 Nutritional requires for stages of feeding children

0 to 6 month olds

Milk only and NO solid foods. Milk can provide them with all of the nutrients they need. Options include:

- Breast milk

- Formula milk

- Soya milk (if babies are lactose intolerant)

- Combination feeding (breast milk and formula milk)

By the end of their first week, most will need around 150 to 200ml per kilo of their weight a day until they're 6 months old. This amount will vary from baby to baby.

Babies should be fed little and often and when they show signs of hunger.

6 to 12 month olds

Babies can be introduced to solid foods via weaning and reducing the amount of milk.

Weaning Stage 1– Babies are slowly introduced to small amounts (one tablespoon) of **soft, smooth or pureed** fruit and vegetables to get them used to new tastes and textures. Baby rice and bananas are good examples.

Foods need to be easy to swallow, to prevent risk of choking.

Weaning Stage 2- (7 to 9 months) Babies are introduced to **finger foods and mashed/blended food** with lumps. Move towards three meals a day. Finger foods allow a child to learn to chew.

Formula fed babies- 600ml of milk a day.

Weaning Stage 3- (10 to 12 months) A baby will now have three meals a day including solid foods either **mashed or chopped**. There should be a variety of fruit and vegetables,, bread, rice, pasta, potatoes, meat, fish, eggs, beans and other non-dairy sources.

Formula fed babies- 400ml of follow on milk a day.

At 12 months, a baby can drink whole cows' milk.

1 to 5 years

Children should have a varied and balanced diet. Children should be exposed to food from each main food group:

- Bread, other cereals and potatoes (e.g. rice, pasta, beans)

- Fruit and vegetables (e.g. oranges, apples, peas and carrots)

- Milk and dairy (e.g. cheese, yoghurt)

- Meat, fish and alternatives (e.g. poultry, eggs and Quorn)

Habits formed in these years are vital to avoid health problems including:

- Obesity - Diabetes - Heart disease

Snacks and drinks should be sugar free and low in salt

R093—Exam Content—Creative iMedia in the Media Industry

Studying this unit will enable you to learn about the different media sectors, products and the job roles within the media industry. You will learn that media products are designed for specific target audiences and that these audiences can be categorised.

Topic of Learning	I will need to know:	So that I can:
Media industry sectors	That there are two types of media –traditional media and new media. How has new media evolved? How has the Internet had an impact on how media products are created, viewed, used? Traditional media refers to media products such as film, television, radio and print publishing. New media refers to computer games, interactive media, the internet and digital publishing.	Explain in detail the different media sectors and how they have developed.
Media industry products	There are a vast range of media products that can be produced by and used in, different sectors. These media products can include– video, audio, music, animation, special effects (SFX, VFX) digital imaging and graphics, social media platforms and apps, digital games, comics and graphic novels, websites, multimedia, eBooks, augmented reality and virtual reality.	Explain using relevant examples the different media products and how they are used by different sectors.
Job roles in the media industry	The job roles within the media can fall into three categories—creative, technical and senior. How do these job roles work together to produce a media product? What are some of the responsibilities of each role? Some job roles are specific to pre-production, production and post-production. Depending on the size and scale of a product being produced, some job roles span multiple production phases. Creative: animator, graphic designer, illustrator, web designer. Technical: camera operator, web developer, sound editor, games developer. Senior: director, editor, creative director, production manager.	Identify the key job roles for a media design project and explain how their role contributes to the production of media products.
Purposes of media products	That media products are created for specific purposes. These include to advertise/promote, to educate, to entertain, to inform and to influence. The product style, content and layout are specifically planned to ensure that the final product meets the required purpose. That style, content and layout will include the use of colour, formal/informal language, positioning of elements, conventions of genre, tome of language, style of audio/visual representation.	Identify the different purposes of media products and explain how specific products meet their intended purpose.
Categories of audience segmentation	There are different categories of audience segmentation—these are age, gender, occupation, income, education, location, interests and lifestyle. How audience characteristics can influence the design and production of media products along with the reasons for and benefits of, audience segmentation.	Explain in detail the different audience categories and how a product would need to be designed to meet their requirements.

R093—Exam Content—Creative iMedia in the Media Industry

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Topic of Learning	I will need to know:	So that I can:
Client requirements and how they are defined	How to recognise keywords and information in client briefs. The requirements in client briefs that inform product planning eg type of product, purpose, target audience, content, genre, theme, timescales, client ethos, style. Why requirements in client briefs can constrain planning and production of digital products. How to interpret requirements in client briefs to generate ideas and plan. Know the different ways that client briefs are communicated such as; formal, commission, informal, meeting, written, negotiated.	Interpret a given client brief and understand all of the requirements in order to be able to effectively plan, design and create a digital product.
Planning documentation used to generate ideas	Concept sketches and visualisation diagrams can be used to develop ideas for a media product. Visualisation diagrams can be used to show design, layouts, colours, white space, placement of text and images and annotations can be included to further explain design ideas. Mind maps and mood boards. Both can be digital or hand drawn.	Sketch a detailed visualisation diagram which clearly shows the design of a media product that all members of a design team can follow.
Research methods, sources and types of data	The reasons for, and benefits of, conducting research. There are two types of research—primary and secondary research. Examples of primary research methods—focus groups, interviews, online surveys, questionnaires. Examples of secondary research methods—books, journals, internet sites, research, magazines, newspapers, television. Research data can be qualitative or quantitative information.	Identify the most appropriate method of research for a specific project and be able to explain the advantages/ disadvantages of each method of research.
Documents used to design and plan media products	The purpose of each planning document including, asset log, flow chart, script, storyboard and visualisation diagram, wire frames. The components and conventions of each document and the hardware and software used to create each one. What makes each document effective and selecting which document is appropriate for use. How to improve the effectiveness of documents for users in given contexts.	Identify the most appropriate document for the product being designed and to explain the key content required for each.
Components of work plans	The purpose of work planning and the components and role of a work plan. Components of a work plan include: tasks, activities, work flow, timescales, milestones, contingencies, resources such as hardware, software and people. The advantages of using work plans when planning a digital media product and how they can be used to manage time, tasks, activities and resources for individuals and large teams.	Create an effective work plan that includes all of the required content and can demonstrate how they can be used to

R093—Exam Content—Creative iMedia in the Media Industry

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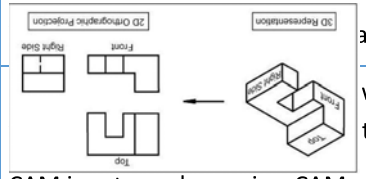
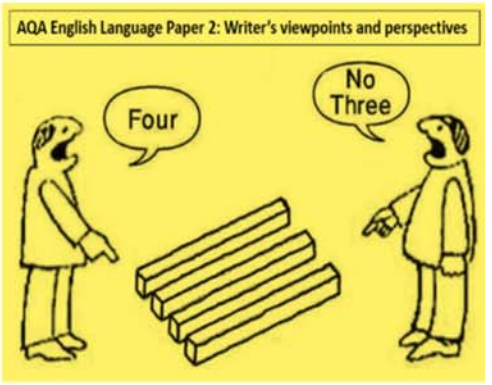
Topic of Learning	I will need to know:	So that I can:
Legal issues that affect media	The legislation that relates to the creation of media products including, intellectual property rights to protect copyright, ideas, patents and trademarks. The purpose of, and reasons for, legislation to protect intellectual property. Data protection to protect the rights of data subjects in the collection, use and storage of personal data. Defamation: libel and slander. Privacy and permissions relating to the rights for recording images/taking photos in public places and the commercial use of images and invasion of privacy. Using copyrighted material: watermarks, symbols and creative commons licences.	Explain the key legislation relating to the creation of media products using relevant examples.
Media codes used to convey meaning, create impact, engage audiences	Media codes can be technical, symbolic or written. Ways that meaning and/or engagement are created using animation, audio eg dialogue, music genre, silence, sound effects, vocal intonation. Use of camera techniques eg angles, shots and movement. The use of colour, graphics, interactivity, lighting, mise-en-scene, movement, transitions and typography to help convey meaning, create impact and engage audiences.	Explain how the combination of content and codes work together to convey meaning, create impact and engagement.
Health and safety issues when creating digital media products	The health and safety risks/hazards in all phases of production, risk assessments and location recces. The purpose of risk assessments and location recces. The common risks and hazards in media production and what media producers can do to reduce these risks and hazards.	Identify and explain the commons risks/hazards in media production and how these can be reduced.
Media distribution platforms to reach audiences	The different platforms used to distribute media to audiences. Online: apps, multimedia, web. Physical platforms: computer, interactive tv, kiosks, mobile devices. Physical media: CD/DVD, memory stick, paper based.	Explain the characteristics of the different platforms and the advantages/disadvantages of each along with how their characteristics affect the selection of final product file format.
Properties and formats of media files	Image files: DPI/PPI resolution, pixel dimension, raster, bitmap, vector, compressed and uncompressed. Audio files: bit depth, sample rate, compressed, uncompressed. Moving image files: frame rate, resolution, SD, HD, 4K, 8K, animation, video, uncompressed, compressed. File compression: lossy/lossless compression.	Explain the properties of each media format to determine the most appropriate format and their limitations.

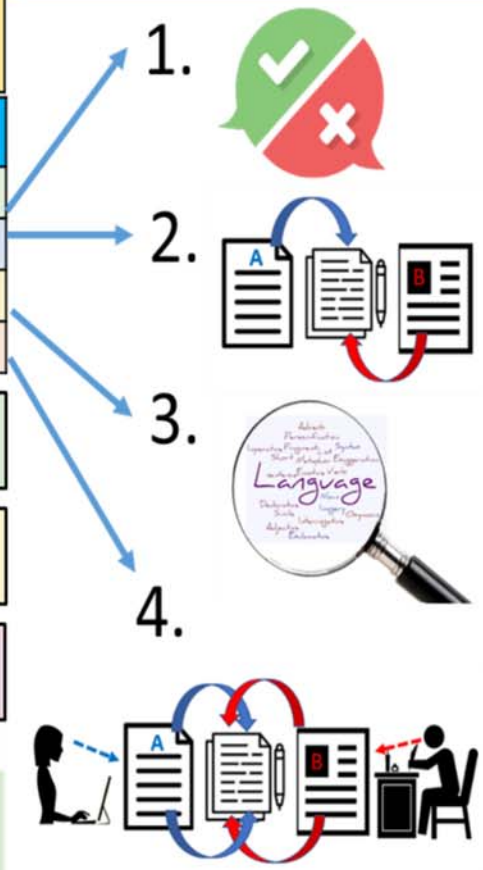
Week	I will need to know:	So that I can:
1-2 Computer Aided Design	Computeer Aided Design (CAD) is where designers use computer software to generate 2D or 3D representations of a design. Software includes 2D Design, AutoCAD, SketchUp, Fusion360, Onshape and many others. Advantages of CAD (over drawing by hand): Extremely precise, Easy to share with client, another designer or manufacturer electronically, easier to edit e.g. change a detail, change the material, colour or size.  angles. Bring other standardised component models int the model.	Know why CAD is used
3-4 Computer Aided Manufacture	where a CAD model can be uploaded to a CAM machine which could make it. For example a 2D to a laser cutter or vinyl cutter which could cut components out. The advantages of CAM: ise, CAM will create identical components, CAM can reduce the time required to produce the components.	Know when it is best to use CAM
5-6 Types of drawing used in engineering	used by design engineers to create ideas quickly, designers will create many ideas in order to decide which urther. Designers use other techniques to create design ideas and during design development, these ***iique*** and ***orthographic*** drawing. ***Isometric*** drawing is a type of 3D drawing, w 30-degree angles. Often a grid paper is used and drawn upon. This type of d account of perspective but has the advantage of being to scale so n taken off them by an engineer.	Understand how designs can be represented in formal methods that will improve communication.
7-8 Oblique projection drawings	C /here a drawing is created as a side view in scale and then lines making the drawing 3D project off at a given angle. This does not take account of perspective in a similar way to an isometric drawing.	Improve communication between designer and engineer / manufacturer.
9-10 Orthographic projection drawing	***3rd angle orthographic drawings*** are a method of representing a component or product in a way that an engineer will be able to manufacture with precision. The three views of the component allow the engineer to communicate all the key details. As it will ale be to scale, there should be less chance of a detail being missed or misunderstood.	Improve communication between designer and engineer / manufacturer.
11-12 Orthographic drawings and their features.	To ensure designers can communicate precisely with manufacturers (who may even be in a different country speaking a different language) it is vital that rules are followed when creating an engineering drawing. ***Orthographic drawings*** must include: A ***title block*** which will contain ***key info*** about the component, the designer and the ***materials***. The ***metric units of measurements***. The ***scale*** of the drawing. The ***tolerance*** of the drawing—this is the acceptable margin of error e.g. +/- 1mm.	Improve communication between designer and engineer / manufacturer.

AQA English Language Paper 2 Section A - key Information and guidance:

- 1 hour 45 minute exam.
- Section A = Reading which has 4 questions based upon your understanding of the texts.
- There are two non-fiction texts labelled Source A and Source B.
- The sources can be things like speeches, articles, letters, biographies, autobiographies, leaflets and travel writing.
- One of them will be from the 19th Century (Victorian era). The other one will be more modern.
- They might be in full or edited extracts (parts of).
- They will have a bit of text at the top in italics which explains where the text is from – read this carefully.
- Spend 10m reading through the questions and both texts.
- Identify the sections the questions ask you to focus on (Question 1 and Question 3).
- Write something for each question. Spend 1 hour on Section A.



Question	Timing	Mark	Assessment Objective	What you do
1	5m	4	AO1	Identify 4 true statements from a section in one source.
2	10m	8	AO1	Summarise and infer from both sources.
3	15m	12	AO2	Analyse language in a section from one source.
4	20m	16	AO3	Compare writer's perspectives from both sources.



What is the writer telling us?

How has the writer shown this? (what methods have they used?)

Why has the writer done this??

TOP TIPS

1. Complete the paper backwards (complete the questions with the most marks first!)
2. Always upgrade your answer to Q4 if you have spare time!

Q5.[Form feature: such as headline & subheading for an article, 'Dear Mr Smith,' for a letter]

<u>Adjective, adjective, adjective: [topic] + statement such as (is a disease spreading through our society).</u>

Presently, we are like mindless addicts; preferring the heady rush of flippant fools and funny failures. Today's society is so immersed in the blizzard of triviality that [link to topic].

Personally, my own children, Edward and Alice, have been sucked into this [link to topic]. It is easy to dismiss this as unimportant but the noxious influence of [topic] is as pervasive as it is dangerous.

Publically, they (like so many their age) have become plagued with anxiety. According to figures from Plymouth University, over 75% of young people report extreme [link to topic]. Professor Hill, who co-authored the report, stated: 'society's fixation upon [topic] is a different kind of epidemic; causing untold damage to young people's minds. It is arguably worse because there is no vaccine.'

We must stop this!

Predictably, some people will… [consider opposing view] but this only perpetuates the problem. We have two options: continue to infect our minds or move forward to a future where we [positive link to topic]. Which would you rather choose?

[Form feature: such as 'Yours sincerely' for a letter or 'Thank you for listening' for a speech]

Q4. (x3)[SOURCE A WRITER]'s perspectives/feelings/intentions about [topic] are…
This is shown in the phrase '[QUOTATION]'
The word choice/imagery/method suggests…
However/Similarly, [SOURCE B WRITER]'s perspectives/feelings/intentions about [topic] were also/more…
This is shown in the phrase '[QUOTATION]'
The word choice/imagery/method suggests…
This links/contrasts because…

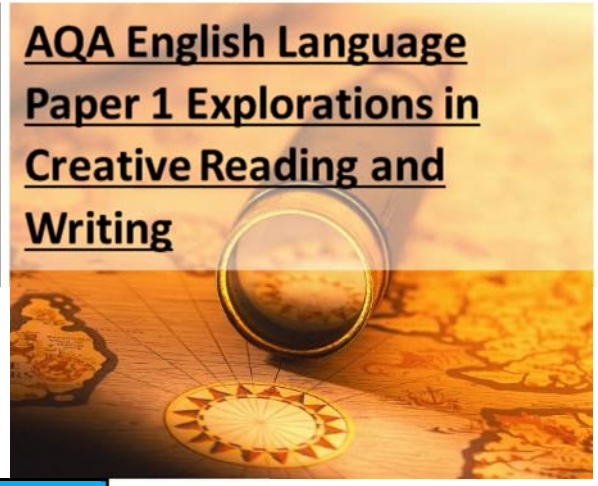
Q3. (x3)1. *The use of [method] suggests…*
2. Additionally, the word choice '…' implies…
3. Furthermore, the use of '…' creates a mood of…
4. The '…' is symbolic of…
5. The word choice '…' links to idea of…

Q2. Source A shows [TOPIC] in the phrase '…'.
The writer does this to make the reader feel…
However/ Similarly Source B shows [TOPIC] in the phrase '…'.
The writer does this to make the reader feel…

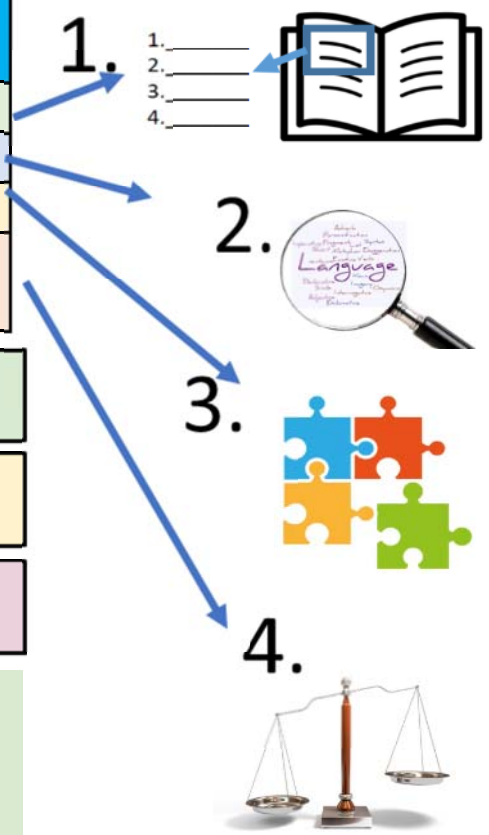
AQA English Language Paper 1 Explorations in Creative Reading and Writing

Section A - key Information and guidance:

•1 hour 45 minute exam. •Section A = Reading which has 4 questions based upon your understanding of the text. •There is one fiction text which is an extract from either a novel or a short story. •There is a bit of text at the top in italics which explains where the text is from – read this carefully. •Spend 5m reading through the questions and the extract. •Identify the sections the questions ask you to focus on (Question 1 and Question 3). •Write something for each question. Spend 1 hour on Section A.



Question	Timing	Mark	Assessment Objective	What you do
1	5m	4	AO1	List 4 things from the text.
2	10m	8	AO2	Analyse language in a section.
3	10m	8	AO2	Analyse structure across whole source.
4	30m	20	AO4	Evaluate – to what extent do you agree with a statement.



What is the writer telling us?

How has the writer shown this? (what methods have they used?)

Why has the writer done this??

TOP TIPS

1. Complete the paper backwards (complete the questions with the most marks first!)
2. Always upgrade your answer to Q4 if you have spare time!

Q5. Nobody dies anymore.

[link to task]

I am isolated in the waiting room of this squat grey clinic. There is a poster – to distract us or something. It is a strange choice… [describe picture].

How did we get here? Scientists plucked at the strands of DNA that played the chords of eternal life. Strung up the troublesome aging gene and (for the lucky few) silenced it. So now in this symphony there was just one minor note: children.

These places used to be crowded but now children are an indulgence. Not everyone has the marker that enables aging to be suspended so they brought in a test for all pregnancies. Makes sense; no-one wants to live knowing that they are the only one who is going to die. Makes sense until it is your child.

So here I am… No, here we are. Alone. Awaiting the results of the genome sequencing test for you.

Will you live forever or will you be discarded before you even have a chance? Why am I even talking to you? You barely exist yet.

[Link to task/picture]

They are calling me in.

Nobody dies anymore but will they let you live?

Q4. (x3)I agree that [STATEMENT]. It is clearly shown by [QUOTATION 1]. The imagery/word choice/method suggests… Additionally, the phrase [QUOTATION 2] reinforces…
Throughout, the idea that [STATEMENT] is shown by phrases such as [QUOTATION 3]. The imagery/word choice/method suggests… Also, the phrase [QUOTATION 4] adds to this because…
Towards the end, the argument that [STATEMENT] is illustrated by the phrase [QUOTATION 5]. The imagery/word choice/method suggests… Linking with this, the phrase [QUOTATION 6] contributes to this as…

Q3. At the beginning the writer focuses on… The phrase '…' is used at this point to interest the reader in…

Throughout the middle, the writer develops the focus to… The phrase '…' is used at this point to interest the reader in…

Towards the end, the writer focuses on… The phrase '…' is used at this point to interest the reader in…

The 1st person perspective makes the text seem more personal. /OR/ The 3rd person perspective makes the text seem more detached.

Q2. (x3)1. *The use of [method] suggests…*
2. Additionally, the word choice '…' implies…
3. Furthermore, the use of '…' creates a mood of…
4. The '…' is symbolic of…
5. The word choice '…' links to idea of…

A Christmas Carol

Prepared Introduction:

Dickens presents [focus] to criticise misanthropy in Victorian London. As a philanthropist, Dickens uses his didactic allegorical novella to show the need for social reform. Dickens crafts this through Scrooge's redemption arc as he progresses from a 'covetous old sinner' to being 'quite a baby' symbolising his rebirth.

Key Quotations:

1	'**solitary** as an **oyster**'	'his own **heart** laughed'
2	'I wear the **chain** I **forged** in life'	'light as a **feather**'
3	'decrease the **surplus** population'	'If these **shadows** remain unaltered by the Future, the child will **die**.'
4	'Another **idol** has displaced me … a **golden** one'	'as good as **gold**'
5	'biting weather' 'freezing fog'	'**Golden** sunlight; **Heavenly** sky'
6	'**gruff** old bell was always peeping **slily** down at Scrooge'	'**merry** bells'
7	'are there no **prisons**?'	**'Ignorance'** & **'Want'** 'Beware … on his brow … **Doom'**
8	'**Father** is so much kinder than he used to be, that home's like **Heaven**!'	'to Tiny Tim, who did not die, he was a second **father**'
9	**'edge** his way along the **crowded** paths of life'	'open their shut-up **hearts** freely … as if they really were fellow-passengers to the **grave'**

'a strange figure—like a **child**: yet not so like a child as like an **old man**'	'a **jolly Giant**, glorious to see; who bore a glowing torch…Girded round its middle was an antique scabbard; but no sword was in it'	'a solemn **Phantom**, draped and hooded, coming, like a mist along the ground, towards him.'

A Christmas Carol

Philanthropy: the desire to help others.
Malthusian: reflecting Thomas Malthus' theories.
Exploit: make use of someone in an unfair way.
Avarice: extreme greed for wealth/material gain.
Ignorance: lacking knowledge, often deliberately.
Misanthropic: showing a dislike of other people.
Didactic: a story with a moral instruction or message.
Redemption: being saved from sin or wrongdoing.
Miser: someone who hoards wealth and spends little.
Foil – a character create to be another's opposite, with the purpose of exaggerating viewpoints through contrast.
Idol: something that is admired in a godlike fashion.
Solitary: existing alone.
Melancholy: sadness without having a particular cause.

Context: Victorian England
The Victorian Era of Britain saw a lot of changes in society. Industry took over and with it came a **wider class divide than before.** There was a **huge divide between rich and poor.**

Context: The role of the church
Religion was important during the Victorian era. Most people believed in **heaven as a reward for good behaviour and hell (or purgatory) as a punishment.**

Context: Ghost Stories
Ghost stories were hugely popular during the Victorian era. **Dickens wrote a ghost story, aimed at upper class readers, as he knew it would sell well.**

Context: Thomas Malthus and Malthusian economics
Malthus was an economist who believed that **if the population grew too large, there would be a crisis around food supply**. Malthus believed that to **help society and the population, some had to die.** Malthus' theory implied that this should be those least important to society (the working class!)

Context: Poor Law
In Victorian times, those is poverty were not viewed kindly. If someone was poor or in debt, they were sent to debtors jail or a workhouse. **This meant that poverty was seen as a crime and the working class, criminals.**

Key Themes:

Redemption	Supernatural
Social justice	Kindness
Exploitation	Greed

An Inspector Calls

Prepared Introduction

Priestley presents **[THEME]** to **criticise capitalist culture** within Edwardian England. As a socialist, Priestley wanted his audience to 'learn [the] lesson' that 'we are all responsible for each other'. Priestley crafts the cyclical structure to subvert the murder mystery genre so that we gradually realise that everyone must 'share our guilt'.

	Key Quotations	
1.	'**Burnt** her inside out'	'**Fire** and blood and anguish'
2.	'**unsinkable**, absolutely **unsinkable**'	'we're all in it – up to the **neck**'
3.	'obscene fat **carcass**'	'We are members of one **body**'
4.	'A **chain** of events'	'He's giving us the **rope** - so that we'll hang ourselves'
5.	'I'd give **thousands** - yes, **thousands**'	'**Millions** and **millions** and **millions** of Eva Smiths'
6.	'**Mummy**'	'**Mother** - stop - stop!'
7.	'(with sharp **sarcasm**)...You were the **wonderful Fairy Prince**.'	'young and **fresh** and charming''
8.	'Girls of that **class**-'	'You mustn't try to build up a kind of **wall** between us and that girl'
9.	'she was **pretty** and a good **sport**'	'Just **used** her...as if she was an **animal**, a **thing**, not a person'
10.	'Lower **costs** and higher prices'	'A man has to mind his own business and **look after his own.**'

Stage Directions:

'The lighting should be pink and intimate until the Inspector arrives and then it should be brighter and harder.'
' Arthur Birling.... Rather provincial in his speech. His wife is.... Her husband's social superior.'
'The general effect is substantial and heavily comfortable but not cosy and homelike.'

An Inspector Calls

Hindsight – to understand a situation only after it has happened.
Mouthpiece – a dramatic device where a character speaks for the author, communicating their point of view within the play.
Dramatic irony – when the audience has knowledge of the significance of some information that the characters lack.
Naïve – lacking in wisdom or judgement.
Remorseless – without regret or guilt.
Nomenclature – the selection process of naming things.
Microcosm/microsociety – literally 'small world'. A system that represents the larger word,
Callous – cold-hearted and uncaring
Materialistic – excessively concerned by what one owns or money.
Omniscient - all knowing.
Allegory - a story with a hidden meaning
Cyclical structure - a story that begins and ends in the same way (In AIC, the doorbell being rung)
Objectification - referring to something as an object, rather than a human being.

Context: Priestley and Socialism
Priestley was born in **Bradford, Yorkshire.** He believed in the political idea of **Socialism.** A **Socialist society** would be one that shared wealth and created less of a divide between the rich and poor.

Context: Capitalism
A political idea whereby people keep as much as they earn. This creates a **divide in society** between those who are rich and those who are poor. **Priestley disagreed with Capitalism.**

Context: Hindsight
The play was written in 1947 but set in 1912. This means, as a writer, Priestley had experienced two world wars and the suffragette movement but this had yet to happen in the play.

Context: Suffragette Movement
The **suffragette movement began in the 1920's and gave women a voice** to create change in society. Sheila, as a character, is presented as a future suffragette. Before this, **women were seen as housewives and their value was mostly based on their appearance. This is seen thr9ugh the repeated use of the word 'pretty' to describe Eva Smith throughout the play.**

Context: Play Form
An Inspector Calls is a play which is designed to be performed on stage. A director of a play considers**: props, setting, costumes, lighting and staging.**

Key Themes:

Responsibility	Role of women
Social Justice	Greed
Equality	Reform

Macbeth

Prepared Introduction:

Shakespeare presents [focus] to criticise Machiavellian immorality in the Jacobean era. As a humanist, Shakespeare wanted to explore the extent to which Macbeth's hamartia or supernatural forces dictate his downfall. Shakespeare crafts this through the tragic arc of Macbeth from the almost deified start as 'Bellona's bridegroom' to the ignominious and hellish end of this 'dead butcher and his fiend-like queen'.

Key Quotations:

1	**'Fair** is **foul**, and **foul** is **fair'**	'the **equivocation** of the fiend That **lies** like **truth'**
2	**'Stars**, hide your **fires**, Let not **light** see my **black** and deep **desires**.'	**'Vaulting ambition'**
3	'look like the innocent **flower**, But be the **serpent** under't.'	'We have scotch'd the **snake**, not kill'd it: She'll close and be herself'
4	**'unsex** me here'	**'dash'd** the brains out'
5	'A **dagger** of the mind, a false creation'	'O, full of **scorpions** is my mind, dear wife!'
6	'Macbeth does murder **sleep''**	'To **bed**, to **bed**, to **bed**!'
7	'mine eternal **jewel** Given to the common enemy of man,'	**'Seyton**!--I am sick at heart'
8	'I shame to wear a heart so **white'**	'Out, damned **spot**!'
9	'**Neptune's ocean**'	'gash'd stabs look'd like a **breach in nature**'
10	'What **beast** was't then … When you durst do it, then you were a **man'**	'Too full o'the milk of human kindness''

Prophecies:

beware **Macduff**	none of **woman born** Shall harm Macbeth.	Macbeth shall never vanquish'd be until Great **Birnam wood** to high Dunsinane hill Shall come against him.

Macbeth

Hamartia – tragic flaw
Ambition – desire to achieve success
Tragic hero – from Greek tragic theatre
Treachery – betraying trust
Regicide - the crime of killing the king
Divinely appointed – chosen by God
Paranoia – suspicion without true cause
Masculinity - typical behaviours associated with men and boys (such as violent, powerful etc)
Supernatural – things that cannot be explained (such as visions, hallucinations of ghosts)
Tyrant - to rule through fear and violence
Fate - decisions and futures predetermined
Free will - making our own choices to determine our future
Insanity -- to no longer think clearly/ the brain loses its ability

Context: Jacobean Era
Shakespeare wrote Macbeth during the Jacobean era. The king was King James I. King James was obsessed and terrified of witches. He wrote a book called Daemonologie to help identify witches. During his reign, witchcraft became illegal causing thousands to die.

Context: Shakespeare and money
In order to be successful and make money, Shakespeare needed King James to like his plays. As such, Shakespeare wrote Macbeth to impress King James by vilifying witches and traitors.

Context: Chain of Being
The Chain of Being was a belief of the Jacobean people there was a natural hierarchy (decided by God) in society. God and the king were at the top and most powerful, with dirt at the bottom. **If the Chain was broken this was considered a sin and an act against God, disrupting nature.**

Context: Divine Right of Kings
The belief that God chooses the king. If anything were to happen to the king, this would be an act against God and a sin.

Context: Gunpowder Plot
James was an unpopular king having brought his Protestant views from Scotland into England. A group of Catholic men, including Guy Fawkes, attempted to blow up the House of Parliament and murder him. They failed – but the country, and James, was shaken by this political turmoil.

Context: Women
Women were expected to be housewives and mothers.

Key Themes:

Violence	Insanity
Masculinity	Leadership
Supernatural	Relationships

Commodities: Fruits and vegetables

Organic foods

Organic: production of food without fertilisers, herbicides or pesticides. The foods are free from trans-fats, GM food and most additives. Advantages: less ethical concerns, lower environmental impact, more sustainable & many people feel the food tastes better and is higher quality.
Disadvantages: that it has a lower yield and higher labour and so is more expensive to buy.

Growth & Process

Processed fruit and vegetables are useful alternatives to fresh. They can be; pre-prepared, canned, frozen, dried or juiced. This could be for convenience, to increase shelf life or allow availability all year round. All fruits and Vegetables need to be washed to remove insecticides, dirt, soil or insects before cooking or eating. This needs to be done in cold water. Any peeling needed should be done as thinly as possible.

Nutrient Value

Fruits and Vegetables contain a wide variety of nutrients including; carbohydrate (energy), Vitamins A (for vision) C (antioxidant, healing tissues, and iron absorption), B, E & K, Calcium, Folate (healthy blood cells & nervous system), Potassium (blood pressure and nervous function), Magnesium (teeth and bone health) Iron as well as fibre (gut health).

Classification

Fruit and Vegetables are classified according to the part of the plant they come from. Fruits are the part of the plant that carries the seeds, they can be; stoned, citrus, hard, soft berry or currants. Vegetables in the soil are; roots, tubers & bulbs. Vegetables above ground are; leaves, flowerheads, stems, fungi, seeds and pods. Vegetables in water are sea vegetables.

Storage

Ideally they should be consumed within a few days of purchase as this is when they will be at their most flavoursome and nutritious. All vegetables should be stored in a cool dry and dark place. Leaves such as spinach, cabbage, spring greens and broccoli should be kept in the salad drawer in a fridge. Root vegetables, bulbs and tubers will keep for several months in a dark dry place.

Commodities: Cereals

GM crops

Genetically modified foods (GMF) are developed to produce a product at a lower price and have greater benefit (durability and/or nutritional value). GM foods currently available have passed safety assessments and are not likely to pose a threat to human health. Future developments may alter nutrient content, reduce allergic potential or improve efficiency of production.

Growth & Process

Wheat is one of the main cereal crops grown in the UK. It will grow in a variety of soils. Tractors and ploughs are used to turn the soil in a field before seeds are planted in the Autumn or Spring. Crops are harvested in the Autumn. Wheat undergoes a primary processing of milling to grind wheat into flour. Flour can then be bleached (made white) and fortified with Vitamins and minerals.

Classification

Cereals are edible grasses which are grown and harvested for their grain. The endosperm, the germ and the bran are of particular importance.
The most popular cereals are; wheat, rice, oats, maize and barley. Cereals are described as a staple food are starchy foods which can be consumed all year.

Nutrient Value

When cereal is in its natural form (whole grain) it is a rich source of nutrients, mainly starchy carbohydrates and protein. Fat is also found in the whole grain, as are Vitamins B and E. Fibre is also in the bran. Nutritional content of cereals may change as the grain is processed.

Diet

Carbohydrates should make up 1/3 of your daily diet, to supply energy, essential vitamins and minerals and dietary fibre. Grains are an essential element of a healthy diet and eating high fibre whole grains may help reduce the risk of heart disease and type 2 diabetes and control blood cholesterol.
Secondary processing of wheat turns it into items such as pizza, cake, bread and pies.

Food science

Coagulation; heat causes the protein present to set.
Gelatinisation; mixing starch and water forms a suspension, adding heat causes the starch granules to absorb the moisture and swell. This thickens the liquid making a gel.
Dextrinisation; exposing starch to dry heat colours it brown.
Retrogradation; chilling and freezing can cause wheat thickened sauces to 'weep'.

Storage

Cereal crops should be stored in a cool dry environment to reduce the likelihood of yeasts, moulds and fungi contaminating the crop. They should also be kept clean and free from rodents, birds and insects or pests. Fungi can produce mycotoxins, birds and rodents can transfer disease, mites can carry fungal spores and bacteria.

Scenario prep

As the body ages, metabolism slows down and their may be a tendency to loose muscle mass and gain weight. Older people tend to eat less food, but still need to eat a balanced diet with all the essential vitamins and minerals. Especially Vitamin D and Calcium to maintain bone health.
Coeliac disease is triggered by gluten and causes the body's own immune system to attack its tissues. Gluten free products carry a symbol.

Commodities: Dairy

Food wastage

Food sustainability looks at the impact of food production on the worlds economy.
Sustainable food should be produced, processed, bought, sold and eaten with consideration to; being waste free, buying locally and seasonally, eating healthily, choosing fair-trade, fishing sustainably, balancing diet and growing own produce. It is estimated that food production will need to increase by 60% by 2050 to feed the global population.

Growth & Process

The source of all dairy foods is milk which comes from female mammals for feeding their young. Milk is a 'complete food' as it contains all the indispensable amino acids and many of the essential nutrients needed for bone health. Dairy cows need to of given birth before they produce milk. They are milked twice a day. Cows tend to be productive for 3 years. Milk is collected and held in storage tanks before processing. This is primary processing.

Classification

All milk in the UK must be heat treated @75°C for 25 secs to destroy pathogenic bacteria (pasteurisation). Milk can then be; **Homogenised** (using a fine mesh under pressure to evenly distribute fat), **Sterilised** (heat treated at 50°C, homogenised, bottled and then steamed @110°C for 10-30 mins**), Ultra heat treated** (UHT- heated to 135°C for 1 sec) **Evaporated** (50% of water removed), **Condensed** (heated @110°C and sweetened) or **Dried**.

Nutrient Value

Cows are the primary source of milk in the UK. Its flavour and fat content are determined by; the breed of cow, season its produced, type of feed, the age and health of the cow. Milk is 85% water, the rest is made up of HBV protein (3.5%) , Fat (3.5-5%), Carbohydrate (4.8%), Vits B, A, D,C. Minerals; Phosphorous, Sodium, Iron, Calcium.

Diet

Lactose intolerance is when a person cannot digest lactose (natural sugar) in cows milk. Bacteria in the gut then feed on this sugar and produce abdominal symptoms. There are alternative milks such as sheep, goat or nut milks. A small number of people can be allergic to milk proteins, and will need to avoid dairy products. This is called CMPA- Cows milk protein allergy. Foods containing milk must have milk listed as an allergen on the packaging.

Food science

Milk is a emulsion meaning it has tiny globules of fat floating in water. Emulsions are colloides. The fat content of milk determines the type of milk (whole- 3.9%, Semi skimmed-1.7%, Skimmed-0.5%). The fat component of cheese melts at 65°C making it spreadable/stringy or dissolved in hot foods. Too high a heat causes the protein (caseinogen) and fat to burn.

Food science

Yoghurts is made from different types of milk. A bacterial starter culture is added to ferment the lactose into lactic acid this allows the proteins to coagulate and produce a sharp, tangy natural yoghurt. Sugar/ sweetener can be added as well as fruit. Yoghurt can be 'live' (harmless bacteria present), Probiotic (beneficial gut bacteria present) or Bio.

making cheese

A starter culture is added to pasteurised milk. The culture ripens the milk by fermenting the lactose into lactic acid. Once enough Lactic acid is produced rennet is added to coagulate into curds and whey. The Whey is drained from the curds. Curds are then 'scalded' to encourage 'syneresis'. It is then pressed to remove more whey and shaped.

Storage

Fresh milk should be stored at 5°C with a tight fitting lid away from strong smelling foods. Sterilised and UHT milk can be stored unopened at room temperature. Evaporated and condensed milk have long shelf lives and an be kept in a cupboard. Evaporated should be stored in the fridge once opened.

Customs and Festivals Knowledge Organiser

(Theme 1: Unit 4)

Festivals	
la fête	festival/ celebration/ party
la fête des mères	Mothers' day
la fête des rois	Twelfth night/ Epiphany
la fête du travail	May day
le Jour de l'An	New Year's day
la Saint-Sylvestre	New Year's Eve
Pâques	Easter
Noël	Christmas
le réveillon de Noël/ la veille de Noël	Christmas Eve
la Chandeleur	Pancake day
Aïd el-Fitr	Eïd al-Fitr
le Ramadan	Ramadan
le jeûne	fast
le jour férié	public holiday
la Saint Valentin	Valentine's day
la Toussaint	All Saints' day
la Pentecôte	Pentecost
poisson d'avril	April Fools' day

Adjectives	
annulé(e)	cancelled
célèbre	famous
contemporain(e)	contemporary
déçu(e)	disappointed
gratuit(e)	free (of charge)
hilarant(e)	hilarious
rigolo(te)	funny
informatif/ve	informative
traditionnel(le)	traditional
passionnant(e)	exciting
populaire	popular
tard	late
tôt	early

Food	
l'agneau	lamb
la crêpe	pancake
la dinde	turkey
l'huître	oyster
la pâte	dough
le fois-gras	foie gras
la bûche de Noël	Yule log
la farce	stuffing
les saucisses	sausages
les pommes de terre	potatoes
les légumes	vegetables
les œufs en chocolat	chocolate eggs
les œufs de Pâques	Easter eggs
le chocolat	chocolate
les bonbons	sweets

Religion	
religieux/se	religious
chrétien(ne)	Christian
une église	a church
une messe	a mass
musulman(e)	Muslim
une mosquée	a mosque
juif/juive	Jewish
une synagogue	a synagogue

Imperfect tense	
J'étais	I was
C'était	It was
J'avais	I had
Il y avait	There was/were
Il faisait chaud	It was hot
Il faisait froid	It was cold

Traditions	
un char	a float
un défilé	procession /parade
un sapin	a Christmas tree
un muguet	a lily of the valley
une blague	a joke

Family traditions	
chez...	at ....'s house
chez mes grandparents	at my grandparents' house
chez moi	at my house
un cadeau	a present
un repas	a meal
avec ma famille	with my family

avoir (to have)	
j'ai	I have
tu as	you have
il/elle a	he/she has
nous avons	we have
vous avez	you have
ils/elles ont	they have

être (to be)	
je suis	I am
tu es	you are
il/elle est	he/she is
nous sommes	we are
vous êtes	you are
ils/elles sont	they are

Past tense using avoir

To form the past tense, use 'avoir' + past participle for the majority of verbs

e.g. j'ai regardé (I watched) J'ai joué (I played)

Avoir past participles	
'er' verbs	Remove the 'er' and add 'é' e.g. regarder = regardé
'ir' verbs	Remove the 'ir' and add 'i' e.g. j'ai fini mon livre
're' verbs	Remove the 're' and add 'u' e.g. j'ai vendu mon livre
Common irregular verbs	
Faire	Fait
Voir	Vu
Lire	Lu

Verbs	
apporter	to bring
célébrer	to celebrate
chercher	to look for
se déguiser	to dress up
accrocher	to hang
s'arrêter	to stop
se dépêcher	to hurry
se reposer	to relax
se retrouver	to meet
récolter	to collect
rire	to laugh
assister	to attend
coûter	to cost
dormir	to sleep
durer	to last
se passer	to take place
sensibiliser	to increase awareness
voyager	to travel

Past tense using être

- 16 key verbs in French use 'être' instead of 'avoir' to form the perfect tense. An easy way to remember them is using the mnemonic DR & MRS VANDERTRAMP. Remember that when you use être to form the perfect tense, you must make the past participle agree with the subject. Reflexive verbs also use être to form the past tense

Infinitive (fr)	Infinitive (en)	Past Participle (fr)
Devenir	To become	Devenu(e)(s)
Revenir	To come back	Revenu(e)(s)
&		&
Monter	To go up/climb	Monté(e)(s)
Rentrer	To come back in	Rentré(e)(s)
Sortir	To go out	Sorti(e)(s)
Venir	To come	Venu(e)(s)
Arriver	To arrive	Arrivé(e)(s)
Naître	To be born	Né(e)(s)
Descendre	To go down	Descendu(e)(s)
Entrer	To enter	Entré(e)(s)
Retourner	To return	Retourné(e)(s)
Tomber	To fall	Tombé(e)(s)
Rester	To stay	Resté(e)(s)
Aller	To go	Allé(e)(s)
Mourir	To die	Mort(e)(s)
Partir	To leave	Parti(e)(s)

TOPIC 4: Customs and festivals in the French-speaking world

À mon avis **les fêtes** et *les jours fériés*	In my opinion **festivals** and *bank holidays*
sont importants pour **passer du bon temps**	are important for **having a good time**
Mais **en ce qui concerne** la Saint Valentin	But **as far as** Valentine's day **is concerned**
C'est **une perte d'argent**	It's **a waste of money**
Ma fête religieuse préférée est **Pâques**	My favourite religious holiday is **Easter**
Le chocolat, c'est **mon péché mignon**!	Chocolate is **my guilty pleasure**!
Nous **la** célébrons avec *toute la famille*	We celebrate **it** with *all the family*
Nous cherchons les œufs dans le jardin	**We look for** eggs in the garden
La fête de la musique *a lieu* en France	**World Music Day** *takes place* in France
pour célébrer **le début de l'été** le 21 juin	to celebrate **the start of summer** on 21st June
L'année dernière **j'y** ai participé	Last year I took part **in it**
et **tout le monde** jouait dans les rues	and **everyone** was playing in the streets
Quand **j'avais** quinze **ans**	When **I was** fifteen **years old**
J'ai fêté mon anniversaire avec mes amis	**I celebrated** my birthday with my friends
Nous sommes allés regarder un film	**We went** to watch a film
et quand **je suis rentrée** à la maison	and when **I got back** home
j'ai reçu **de nombreux** cadeaux	I received **a lot of** presents
Ce sera différent l'année prochaine	**It will be** different next year
J'aurai **une** grande **boum**	I will have **a** big **party**
Et toute ma famille **sera** là	And all my family **will be** there
Je serai traitée comme une princesse	**I will be treated** like a princess
Mon cadeau idéal serait un portable	**My ideal present** would be a phone
et **je pourrais** télécharger des applis	and **I would be able to** download apps
Je voudrais **aussi** des nouveaux vêtements	I'd **also** like some new clothes
pour porter à **ma fête d'anniversaire**	to wear to **my birthday party**

Home, Town, Neighbourhood and Region Knowledge Organiser

(Theme 2: Unit 5)

Furniture	
l'armoire	wardrobe
la bibliothèque	bookcase
le bureau	desk
le canapé	sofa
la chaise	chair
la commode	chest of drawers
l'étagère	shelf
le fauteuil	armchair
la fenêtre	window
le lit	bed
les meubles	furniture
le miroir	mirror
la peinture	painting
la porte	door
le tapis	rug

Places in town	
un château	a castle
un centre de loisirs	a leisure centre
un centre commercial	a shopping centre
un marché	a market
un stade	a stadium
une église	a church
une piscine	a swimming pool
une patinoire	an ice rink
des magasins	shops
des musées	museums

le/la voisin(e) = neighbour

Material	
en bois	made of wood
en métal	made of metal
en tissu	made of fabric
en velours	made of velvet

à la campagne	in the countryside
au bord de la mer	by the sea
à la montagne	in the mountains
au centre-ville	in the city centre
en banlieu	in the suburbs

Types of homes	
une maison	house
une maison individuelle	detached house
une maison jumelée	semi-detached
une maison mitoyenne	terraced house
un appartement	flat

Time phrases	
toujours	always
souvent	often
généralement	generally
normalement	normally
quelquefois	sometimes
rarement	rarely

Adjectives placed before the noun	
vieux/vieille	old
nouveau/nouvelle	new
beau/belle	beautiful
grand(e)	big
petit(e)	small
joli(e)	pretty

Help at home		
j'aide à la maison	aider à la maison	to help at home
je cuisine	cuisiner	to cook
je fais la cuisine	faire la cuisine	
je fais le jardinage	faire du jardinage	to do the gardening
je lave la voiture	laver la voiture	to wash the car
je nettoie	nettoyer	to clean
je range	ranger	to tidy
je travaille	travailler	to work
je fais le bricolage	faire le bricolage	to do DIY
je fais la vaisselle	faire la vaisselle	to do the washing-up
je fais le ménage	faire le ménage	to do the cleaning
je fais les lits	faire les lits	to make the beds
je mets la table	mettre la table	to lay the table
je passe l'aspirateur	passer l'aspirateur	to vacuum

près de = near

loin de = far from

Rooms of the house	
le bureau	office
la cave	cellar
la chambre	bedroom
la cuisine	kitchen
le grenier	attic
le jardin	garden
la pièce	room
la salle à manger	dining room
la salle de bains	bathroom
la salle d'eau	wet room
le salon	living room
le séjour	
le sous-sol	basement
le rez-de-chaussée	ground floor

Compass points	
le nord	north
l'est	east
le sud	south
l'ouest	west
le nord-est	north east
le nord-ouest	north west
le sud-est	south west
le sud-ouest	south west

There is/there are	
il y a	there is/are
After 'il y a' remember to write 'un/une/des' e.g. il y a des musées il y a une église	
il n'y a pas de	there isn't/aren't
After 'il n'y a pas de' remember we do not write 'un/une/des''! We replace them with 'de' e.g. il n'y a pas de stade il n'y a pas de château	

Colours (after noun)	
rouge(s)	red
jaune(s)	yellow
bleu(e)(s)	blue
orange	orange
vert(e)(s)	green
violet(te)(s)	purple
rose(s)	pink
blan(che)(s)	white
noir(e)(s)	black
marron	brown
gris(e)(s)	grey

habiter (to live)	
j'habite	I live
tu habites	you live
il/elle habite	he/she lives
nous habitons	we live
vous habitez	you live
ils/elles habitent	they live

faire (to do/make)	
je fais	I do
tu fais	you do
il/elle fait	he/she does
nous faisons	we do
vous faites	you do
ils/elles font	they do

'in' (à, en, au, aux, dans)	
à	towns/cities e.g. à Paris
en	feminine countries e.g. en France
au	masculine countries e.g. au Portugal
aux	plural countries e.g. aux états unis
dans	in general e.g. dans ma maison, dans le nord, dans mon village, etc

Adjectives placed after the noun	
chèr(e)	expensive
dur(e)	hard
propre	clean
agaçant(e)	annoying
douillet(te)	cosy
sombre	dark
animé(e)	lively
calme	quiet
historique	historic
touristique	touristic
artisanal(e)	hand-made
bon marché	cheap
fermé(e)	closed
gratuit(e)	free
ouvert(e)	open
pratique	practical
de taille moyenne	medium-sized
tard	late
tôt	early
bruyant(e)	noisy
sale	dirty

French

TOPIC 5: Home, town, neighbourhood and region

J'habite **à** Highbridge, une petite ville	I live **in** Highbridge, a small town
dans **le sud-ouest** de l'Angleterre	in **the south-west** of England
J'y habite avec ma famille *depuis* un an	**I have lived there** *for* a year
C'est situé au bord de la mer	**It's situated** by the seaside
Il n'y a grand-chose à faire **pour les jeunes**	There's not a lot **for young people** to do
Mais il y a **des magasins** et *un jardin public*	But there are **some shops** and *a park*
J'aime **habiter** à la campagne	I like **living** in the countryside
parce que c'est **plus tranquille qu'**en ville	because it's **quieter than** in town
Selon moi, ma région est très jolie	**According to me**, my region is very pretty
et en été il y a beaucoup de touristes	**and in summer** there are a lot of tourists
Ma région **est connue pour** le cidre	My region **is known for** its cider
et le fameux fromage de Cheddar	and the famous Cheddar cheese
C'est une région historique aussi	It's a historic region too
La semaine dernière **j'ai visité** le musée	Last week **I visited** the museum
et **j'y ai appris** beaucoup	and **I learned** a lot **there**
J'ai aussi **fait des courses** *en ville*	**I** also did some shopping *in town*
J'ai rencontré mes amies au ciné	I met my friends at the cinema
et **on a regardé** un film d'horreur	and **we watched** a horror film
Ça m'a donné la chair de poule!	**It gave me goosebumps!**
À l'avenir je voudrais habiter *en ville*	**In the future** I would like to live *in town*
À Londres **ou même** Bristol *c'est plus animé*	In London **or even** Bristol *it's livelier*
J'achèterais un appartement spacieux	**I would buy** a spacious apartment
Je sortirais tous les soirs	**I would go out** every evening
J'irais à toutes les boîtes de nuit	**I would go** to all the nightclubs
Je m'amuserais bien	I would have a lot of fun

Social Issues Knowledge Organiser

(Theme 2: Unit 6)

Use 'je veux', 'je peux', 'je dois', 'je voudrais' & 'je vais' + full verb

Verbs	
combattre	to combat
créer	to create
donner	to give
être fondé(e)	to be founded
faire du bénévolat	to do voluntary work
fonder	to found
lutter	to fight
protéger	to protect
accueillir	to welcome
apporter	to bring
comprendre	to understand
essayer de	to try
propager	to spread
soigner	to treat/care for
travailler	to work
voyager	to travel
boire	to drink
consolider	to consolidate
contenir	to contain
devoir	to have to (must)
éviter	to avoid
garder la forme	to keep in shape
manger	to eat
mener à	to lead to
rester en bonne santé	to stay healthy
se détendre	to relax
devenir	to become
dormir	to sleep
se droguer	to take drugs
s'entraîner	to train
être à l'aise	to be comfortable
faire attention à	to be careful of
fumer	to smoke
perdre du poids	to lose weight
plaire	to please
se relaxer	to relax
faire un régime	to be on a diet

Charities	
l'association caritative	charity
à l'abri	in a safe place
le don	donation
l'égalité	equality
l'inégalité	inequality
l'exclusion	exclusion
la faim	hunger
les gens	people
tout le monde	everyone
l'injustice	injustice
la misère	misery/poverty
la nourriture	food
la pauvreté	poverty
le test de dépistage	screening test
l'eau potable	drinking water
les sans-abris	homeless people

Drink, drugs & smoking	
les drogues	drugs
l'alcool	alcohol
le tabac	tobacco
les cigarettes	cigarettes
l'odeur	smell
une habitude	a habit

Expressions using avoir	
avoir les moyens	to be able to afford
avoir de la chance	to be lucky
avoir confiance en soi	to be confident
avoir peur de	to be scared of

Adjectives	
équilibré(e)	balanced
fatigué(e)	tired
gras(se)	fatty
malade	ill
malsain(e)	unhealthy
sain(e)	healthy
sucré(e)	sugary
varié(e)	varied
alimentaire	dietary
démuni(e)	in need
dur(e)	hard
pauvre	poor
en bonne forme	fit
accro/dependant(e)	addicted
stressé(e)	stressed

Meals	
le repas	meal
le petit déjeuner	breakfast
le déjeuner	lunch
le dîner	dinner
l'entrée	starter
le dessert	dessert
le plat	dish
le plat principal	main course
la boisson	drink

Health	
la maladie	illness
le médecin	doctor
les medicaments	medicine
le sang	blood
le SIDA	AIDS
le test de dépistage	screening test
le coeur	heart
la dent	teeth
l'obésité	obesity
la santé	health
le poumon	lung
la respiration	breething
l'os	bone

The partitive article
Used to talk about indefinite quantities (some/any)

de+le= du (some/any)	du lait (some milk)
de+la= de la (some/any)	de la farine (some flour)
de+l'= de l' (some/any)	de l'eau (some water)
de+les = des (some/any)	des pommes (some apples)

Manger (to eat)

Past		Present		Future	
J'ai mangé	I ate	Je mange	I eat	Je vais manger	I'm going to eat
Il/elle a mangé	He/she ate	Il/elle mange	He/she eats	Il/elle va manger	He/she is going to eat
Nous avons mangé	We ate	Nous mangeons	We eat	Nous allons manger	We are going to eat

Boire (to drink)

Past		Present		Future	
J'ai bu	I drank	Je bois	I drink	Je vais boire	I'm going to drink
Il/elle a bu	he/she drank	Il/elle boit	He/she drinks	Il/elle va boire	He/she is going to drink
Nous avons bu	We drank	Nous buvons	We drink	Nous allons boire	We are going to drink

French

TOPIC 6: Social issues

Pour aider les SDF/les démunis	To help the homeless/those in need
je travaille comme **bénévole** pendant l'été	I work as a **volunteer** during the summer
Je pense que **les associations caritatives**	I think that **charities**
jouent un rôle important dans **la société**	play an important role in **society**
en aidant ceux qui *ont besoin* d'eux	**by helping** those who *need* them
Bien que ne j'aie pas *trop* le temps	**Although** I don't have *too much* time
je voudrais **créer** une association caritative	I would like **to create** a charity
pour aider les mères *célibataires*	**to help** *single* mums
et **leurs enfants** car **ça m'inquiète** le plus	and their children because that worries me the most
Je vais collecter des choses nécessaires	**I'm going to collect** essential things
comme des produits d'hygiène	**such as** hygiene products
Je vais essayer de faire *mon mieux*	**I'm going to try** to do *my best*
pour que ces femmes *ne manquent de rien*	**so that** these women *don't lack anything*
Si j'avais plus de temps et d'argent	**If I had** more time and money
j'aiderais **le monde** entier	I would help **the** entire **world**
J'ai le cœur sur la main	**I am all heart**
Les jeunes font face à la pression des paires	Young people **face** peer pressure
En étant connectés *en ligne* tout le temps	**By being** connected *online* all the time
les jeunes **peuvent** *être* intimidés	young people **can** *be* intimidated
ce qui peut avoir un impact	**which** can have an impact
sur leur **santé mentale** et *travail scolaire*	on their **mental health** and *schoolwork*
Ils peuvent avoir **d'autres** problèmes	They can have **other** problems
comme **l'anorexie**, *les drogues* ou l'alcool	such as **anorexia**, *drugs* or alcohol
Il est important de parler de *ses* problèmes	**It's important** to talk about *one's* problems
pour *les* résoudre	**in order to** resolve *them*

YEAR 10 CYCLE 2 GEOGRAPHY – Changing Economic World (Paper 2) Knowledge Organiser

WEEK 1

Development is an improvement in living standards through better use of resources.

Economic: This is progress in economic growth through levels of industrialisation and use of technology.

Social: This is an improvement in people's standard of living, for example, clean water and electricity.

Environmental: This involves advances in the management and protection of the environment.

Measuring development

Employment type: The proportion of the population working in primary, secondary, tertiary and quaternary industries.

Gross Domestic Product (GDP) per capita: The total value of goods and services produced by a country in a year divided by its population.

Literacy rate: The percentage of the population over the age of 15 who can read and write.

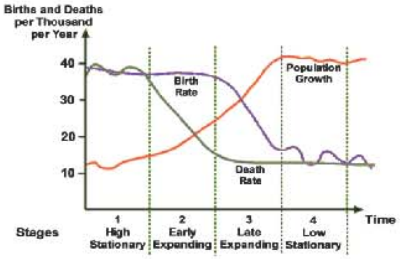
Human Development Index (HDI): A number that uses life expectancy, education level and income per person.

WEEK 2

LICs: Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living

NEEs: Countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.

HICs: These countries are wealthy with a high GNI per capita and high standards of living. These countries spend money on services.



Stage 1: High birth and death rates, low population growth

Stage 2: Birth rate remains high, death rate falls, population rising.

Stage 3: Low death rate, falling birth rate, increasing population.

Stage 4: Low birth and death rate, population steadies.

Stage 5: Falling death rate and low birth rate leading to natural decrease of the population.

WEEK 3

Human factors affecting uneven development

Aid: Helps countries develop key projects for infrastructure faster. Improve services such as schools and hospitals. Too much reliance on aid hinders development though.

Trade: Countries that export more than the import have a trade surplus. Trading goods and services is more profitable than raw materials.

Education: Creates a skilled workforce, meaning people earn more money and can pay more taxes which helps to develop the country.

Politics: Corruption in local and national governments. Stability of the government can affect their ability to trade and to invest in services and infrastructure.

History: Colonialism has helped Europe develop but slowed the development of other countries. Countries which have already industrialised benefit economically today.

Health: Lack of clean water and poor healthcare means a large number of people suffer diseases. People who are ill cannot work so make little contribution to the economy.

WEEK 4

Physical factors affecting uneven development

Natural resources: Fuel sources such as oil. Minerals and metals. Availability of timber. Access to safe water.

Natural hazards: Frequent hazards undermines development. Benefits from volcanic material and floodwater.

Climate: Reliability of rainfall to benefit farming. Extreme climates limit industry and affects health. Climate can attract tourists.

Location/terrain: Landlocked countries may find trade difficult. Mountainous terrain makes farming more challenging.

Consequences of uneven development

Wealth: People in HICs have higher incomes than those in LICs/NEEs

Health: Better healthcare means that people in HICs live longer.

Migration: If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.

WEEK 5

Reducing the development gap

Microfinance loans: Involves people in LICs receiving small loans from traditional banks. Loans enable them to start their own businesses. Might not be effective at a large scale.

Aid: Given from one country to another as money or resources. Improve literacy rates, building dams, improving agriculture. Can be wasted by corrupt governments.

Fair trade: Movement where farmers get paid a fair price for the goods produced. Paid fairly so they can improve healthcare and schools. In reality, only a small proportion of extra money reaches the producers.

Foreign-direct investment: when one country buys property or infrastructure in another country. Leads to better access to finance, technology and expertise. Investment can come with ties that countries need to meet.

Debt relief: When a county's debt is cancelled or interest rates are lowered. Means more money can be spent on development. Locals might not always get a say. There might be ties from the donor country.

Technology: Includes tools, machines and affordable equipment. Renewable energy is less expensive and polluting. Requires investment in skills to operate machinery.

YEAR 10 CYCLE 2 GEOGRAPHY – Changing Economic World (Paper 2) Knowledge Organiser

WEEK 6

CASE STUDY: Reducing the development gap in Jamaica

Jamaica is a LIC island nation in the Caribbean. Location makes Jamaica an attractive place for visitors to explore the tropical blue seas, skies and palm filled sandy beaches.

Tourist economy: In 2015, 2.12 million visited. Tourism contributes 27% of GDP and will increase to 38% by 2025. 130,000 jobs rely on tourism. Global recession in 2008 caused a decline in tourism.

Multiplier effect: Jobs from tourism have meant that more money has been spent in shops and other businesses. Government invested in infrastructure to support tourism. New sewage treatment plants reduced pollution.

Development problems: Tourists do not always spend very much money outside of their resorts. Infrastructure improvements have not spread to the whole island. Many people still live in poor quality housing and lack basic services such as healthcare.

WEEK 7

CASE STUDY: Economic development in Nigeria

Nigeria is a NEE in West Africa, north of the equator. Most populous and economically powerful country in Africa. Economic growth has been based on oil exports.

Influences upon Nigeria's development

Political: Suffered instability with a civil war between 1967 and 1970. From 1999, more stable with free and fair elections. Stability encouraged investment from USA and China.

Social: Multi-cultural, multi-faith society. Mostly a strength, but diversity has caused regional conflicts from groups such as Boko Haram terrorists.

Cultural: Diversity has created rich and varied artistic culture as well as literacy and film (Nollywood). Successful football team.

WEEK 8

CASE STUDY: Economic development in Nigeria

Industrial structures: Once based on agriculture, 50% of its economy is now manufacturing and services. A thriving manufacturing industry is increasing foreign investment and employment.

The role of TNCs: played an important role on Nigeria's economy (e.g. Shell). Profits often go to HICs. Oil spills have damaged fragile environments.

Changing relationships: Role with the African Union and UN. Growing links with China with huge investment in infrastructure. Main import includes petrol (EU), cars (Brazil) and phones (China).

Environmental impacts: 2008-2009 oil spill devastated swamps and ecosystems. Industry caused toxic chemicals to be discharged in open sewers risking human health. 80% of forest have been cut down increasing CO_2 emissions.

Aid and debt relief: Receives $5 billion per year in aid. Aid groups have improved health centres, mosquito nets and protect against HIV/Aids

Life expectancy increased from 46 to 53 years.

WEEK 9

CASE STUDY: Economic change in the UK

One of the largest economies in the world. Huge political, economic and cultural influences. UK has global transport links e.g. Heathrow and Eurostar.

Causes of economic change: Deindustrialisation. Globalisation which has meant that many industries have moved overseas, where labour costs are lower.

Towards post-industrial: the quaternary industry has increased whilst secondary decreased. Primary & tertiary stayed steady. Big increase in professional and technical jobs.

Science parks: groups of scientific and technical knowledge-based businesses on a single site. Access to transport routes. Educated workers. Attractive working environment. Clusters of high-tech businesses.

WEEK 10

CASE STUDY: Economic change in the UK

UK car industry: Every year the UK makes 1.5 million cars. Factories owned by large TNCs e.g. Nissan. 7% of energy used in their factories is from wind energy. New cars more energy efficient and lighter. Nissan produces electric and hybrid cars.

Change to the rural landscape

Social: Rising house prices caused tension in villages. Unpopulated during the day causing loss of identity. Resentment towards migrant communities.

Economic: lack of affordable housing for local first time buyers. Sale of farmland increased rural unemployment.

Improvements to transport: £15 billion 'Road Improvement Strategy'. This will involve 10 new roads and 1600 extra lanes. £50 billion HS2 railways to improve connections between cities. £18 billion on Heathrow's controversial third runway.

UK North/South divide: wages lower and education worse in the north. Health better in south. Northern Powerhouse project to resolve regional differences.

Week 14 & 15- The common Hair & beauty services & treatments

Shampooing & Conditioning- Shampoo specifically formulated for the hair type, and hair or scalp condition Surface conditioner specifically formulated for the hair type, Scalp treatments specifically formulated for the scalp condition, Penetrating treatments specifically formulated for dry and damaged hair.

Conditioner helps to close the cuticle of the hair, allowing the hair to shine and be more manageable.

Cutting- Club cutting – creates a blunt end, precision cut.

Texturising – Softens edges, removes bulk and breaks up any hard lines

Razoring – removes length and bulk, creates soft edges and provides texture, removes weight and increases curl

Thinning – removes hair bulk

Restyling – changing the length and shape

Colouring- Temporary colour- hair mascara, coloured mousse, colour shampoos, these last for 1 shampoo

Semi-permanent colour – these last 6-8 shampoos

Quasi-permanent colour – these last 12 to 24 shampoos

Permanent colour – these are permanent and grow out

Styling- Styling, dressing and finishing techniques are used to create a variety of finished looks, this can be as the end treatment following a colour or cutting service or as a standalone service for a special occasion.
Blow-drying ,Finger-drying, Finger waving, Pin curling and Scalp plaiting

Perming-
Small even sections of hair are wound around a curling rod and perm lotion is applied to hair. A neutralising agent is then applied which sets the hair in its new permanently changed shape

Barbering Club cutting – creates a blunt end, precision cut.

Texturising – Softens edges, removes bulk and breaks up any hard lines

Razoring – removes length and bulk, creates soft edges and provides texture, removes weight and increases curl

Thinning – removes hair bulk

Restyling – changing the length and shape

Scissor/clipper over comb – Cuts hair into the nape and head shape for short styles

Beauty Therapy facials- Maintain and improve facial skin condition. **Eye treatments**- **Eye cream** – Specialist product designed to minimise the appearance of fine lines **Eye gel** – Cools the under-eye area and minimises the appearance of dark circles and puffiness.

Waxing- **Hot wax** is most suitable for strong hairs, such as the bikini line.
It is applied using a wooden spatula to the area being waxed, it is allowed to cool and set, the set wax is then removed by flicking up one edge and quickly removing the wax in one piece.
Warm wax is suitable for all hair growth areas, it is applied using a wooden spatula to the area being waxed, a paper or fabric wax strip is then applied over the top of the wax to capture the wax and the hairs, the wax strip is then quickly removed pulling the hairs away onto the wax strip.

Week 16- Business links & interdependencies within the hair & beauty sector

Interrelated industries: Leisure & tourism, fashion, health & fitness, fashion design & buying, education & training, theatre & media, retail, product manufacturing & distribution, aesthetic nursing.

Week 17 & 18- The hair & beauty sector's contribution to the

UK economy

The hair and beauty sector contributes to **Gross Domestic Product (GDP).** The sector helps to provide **employment opportunities** & it helps to increase **spending**. The hair & beauty sector allows greater consumer choice of products & services, and it also gives support to other sectors & industries.

Key words are highlighted in red.

Week 19 & 20 Legislation & Working practices influencing Businesses

Key Legislation & Regulations

Health & Safety at Work Act- Adhere to all health and safety legislation within the salon, nail bar, barbershop or spa.
Work hygienically with the use of clean and non-contaminated products, fresh clean towels, sterilised tools and equipment.

Follow workplace and suppliers' or manufacturers' instructions for the safe use of equipment, materials and products.

Prepare and protect self, client and service area in accordance with salon, nail bar, barbershop or spa requirements
Use appropriate personal protective equipment (PPE) for self (gloves, apron, visor/mask) and client (gown, towels, robes)

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)-
RIDDOR is the law that requires employers, and other people in charge of work premises, to report and keep records of: work-related accidents which cause deaths, work-related accidents which cause certain serious injuries (reportable injuries) and diagnosed cases of certain industrial diseases; and certain 'dangerous occurrences' (incidents with the potential to cause harm)

GDPR– Data Protection Act 2018 - The Data Protection Act 2018 controls how your personal information is used by organisations, businesses or the government.

Health, Safety & Hygiene

Sanitisation– – reduces the number of pathogens on the clean surface to safe levels. Sanitisation simply means cleaning first by physically removing all visible debris, and then washing with liquid soap, detergents or antiseptics.

Sterilisation- – the killing of organisms such as bacteria, fungi and parasites. Sterilisation can be achieved by applying chemicals, high pressure, heat, irradiation, filtration or a combination.

Cross-infection- the transfer of microorganisms, usually viruses and bacteria, between people, through direct physical contact, indirect contact or through the air when a person coughs or sneezes

Disinfection- the elimination of the most harmful microorganisms (not including their spores) from surfaces or objects. Disinfectants should not be used directly on the skin, nails or any part of the body.

Personal Protective Equipment- For the hair and beauty industry, recommendations from the Health and Safety Executive (HSE) recommends that face coverings, gloves, aprons and – for some treatments – eye protection should be worn.

Week 21 & 22- Environmental influences on hair &

beauty businesses

Sustainability

Sustainability within the hair and beauty sector is very important. Social, ecological & economical effects must be considered. Short and long term environmental effects have an impact. Social costs, **renewable & non-renewable sources**, **ethical businesses** & **environmental laws** must also be considered.

Week 23 & 24 The Historical Development of Hair & Beauty Industries over the last 50 Years

The evolution & Development of the industry from general

hairdressers/ beauty salons/ barbershops & specialised salons

History of hairdressing timeline- 500 B.C. – Hairstyling becomes a highly developed art form in ancient Greece. The word "Cosmetology" comes from the Greek word "kosmetikos", meaning "skilled in the use of cosmetics." through to the present day.

The origins of the beauty industry–

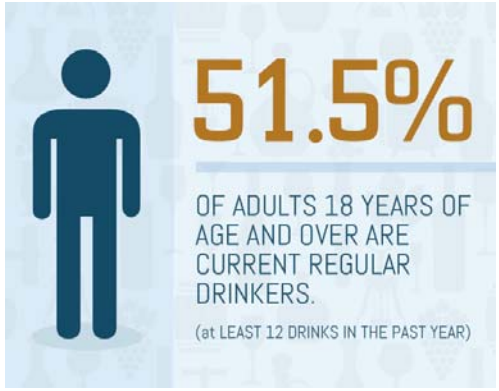
From
the 1990s and the 2000s more ingredients were discovered to have useful properties and there was a noticeable shift away from using animal products to using more synthetic and man made ingredients.

Technological advances in the hair and beauty sector—Hair replacement systems , Nail enhancement systems , Eyelash and eyebrow treatments , Airbrush make-up Spray tanning , Laser treatments , Non-medical and clinical aesthetic treatments .

Key words are highlighted in red.

R035- Health Promotion Campaigns

Alcohol Consumption



Cambridge National Health and Social Care - Year 11

Task 1a- Choose a public health challenge

- Statistics regarding alcohol consumption in the UK
- Importance to society
- Bigger picture in regard to society
- Current health promotion campaigns
- Why you have chosen the issue
- The impact of an improvement in the issue

Task 1b

- Target audience for your health campaign
- Factors that could influence the target audience
- Barriers to leading a healthy lifestyle
- Benefits of following the health campaign (PIES)

Task 2- Plan your health promotion campaign

- Aims of the campaign
- Timescales
- Resources needed
- Safety considerations
- Communication
- Methods to engage target audience
- How you will gather feedback

Task 3- Deliver your health promotion campaign

- Introduce the health promotion campaign
- Deliver the health promotion campaign
- Collect feedback from your audience
- Use correct/appropriate communication skills

Task 4- Evaluate your own performance

Strengths/weaknesses of:

- Planning
- Communication skills
- Engagement of individuals
- What you would improve on next time

HISTORY OF MEDICINE

INDUSTRIAL 1700-1900

Cause of disease (what they believed made people sick)

In 1700 people still believed in the old ideas of the Four Humours and miasma as the cause of disease, but scientists now had better microscopes and could see microbes and so they came up with the theory of spontaneous generation – that decay created microbes. In 1861 that all changed when Pasteur published his Germ Theory that said microbes caused decay. Later, in 1875, Koch linked microbes to disease and called them "pathogens". Once identified, these pathogens could be targeted. They didn't know why some babies were born with diseases or how conditions were passed from parent to offspring, but they did now know that microbes caused disease, and thanks to Lister in 1867, also caused infection too. Some individuals such as Dr. Bastion argued against Germ Theory as they believed microbes must be harmless as they were found inside the body of healthy people too; especially in the gut.

Treatment of disease (how they tried to cure people and make them better)

Between 1700 and 1900 surgical treatments made a lot of progress. Thanks to Simpson's work in 1847, British surgeons had an effective anaesthetic called chloroform that knocked patients out. With the added safety of Snow's inhaler, this meant surgery could be done on areas of the body such as the stomach and the head without any pain. Surgery was safer still after 1867 when Lister introduced the first antiseptic called carbolic acid, that prevented infection during and after surgery. By 1890 most surgery was being done in antiseptic conditions. Blood loss during surgery was still a problem however and there were still no proven cures for illnesses despite Germ Theory. Many herbal remedies continued to be used right up to 1900. These improvements in treatments were helped by improvements in hospital care and nursing thanks to the work of Florence Nightingale. Nightingale published two books on nursing and hospitals in 1859 and set up a nursing training school in 1860. Nursing became more professional, and hospitals were made more hygienic.

Prevention of disease (stopping people getting sick in the first place)

The best way to stay alive was to avoid diseases in the first place and that became much more effective by 1900. Firstly, the British government started look after their population's health. The fear of cholera, the work of Snow and Chadwick and finally Germ Theory proved the connection between dirt and disease – the government had to provide clean water and sewage systems and stop their laissez faire attitudes. Jenner's work on smallpox created the world's first vaccination, but only in the 1870s was the science behind immunisation understood by Pasteur and Koch. In the 1880s and 1890s vaccinations were developed but only the smallpox vaccine was supported by a government campaign in the 1870s.

KEYWORDS

Anaesthetic= a chemical that removes pain

Immune system= the body's defence against diseases

Laissez-faire= leave people to look after themselves

Pathogens= microbes that cause disease

IMPORTANT DATES

1798 = Jenner discovers vaccination

1861 = Pasteur links germs to decay

1875 = Koch links germs to disease

MODERN 1900-NOW

Cause of disease (what they believed made people sick)

Pathogens (microbes) are believed to be the main cause of disease and research continues to identify new vaccinations for any dangerous outbreaks of disease (such as Ebola). This work has become easier thanks to the growth of the pharmaceutical industry which funds research grants for universities. More powerful microscopes and electron microscopes as well as the pioneering work of Watson and Crick in 1953 allowed the discovery of DNA. The Human Genome Project mapped the entire DNA sequence for humans by the year 2000. Conditions such as haemophilia that are passed from parent to child are now understood to be genetic disorders rather than pathogen based. The work on genetics has also explained how viruses work and how people can be more vulnerable to heart disease and cancer.

Treatment of disease (how they tried to cure people and make them better)

The first chemical cure was developed by Ehrlich in 1909 to treat syphilis and this began research into a host of medicines that target specific microbes and cells in the human body; the modern version of which is chemotherapy for cancer sufferers. The discovery of penicillin in 1928 and its production as a drug in the 1940s introduced antibiotics to the world and defeated most bacterial infections. Viruses and cancers still remain difficult to cure but genetic and stem cell research continues to develop new treatments all the time. Surgery has become aseptic (germ-free) and blood loss is no longer a problem since blood groups were discovered in 1901 by Landsteiner and transfusions were developed during the First World War. Technology has improved diagnosis of diseases to improve treatments – machines such as the MRI scanner, blood tests and ultrasounds allow doctors to identify exactly what is wrong in order to target a cure.

Prevention of disease (stopping people getting sick in the first place)

Vaccination campaigns have been introduced and enforced by the national government ever since the first national campaign against diphtheria in 1942. People still have the right to refuse the vaccination (due to a lack of trust in the medical services) but diseases such as polio and Rubella are almost wiped out in Britain thanks to vaccination campaigns. The government also prevents illnesses by maintaining healthy living conditions such as the Clean Air Acts of 1956 and 1968, the ban on smoking in public areas and food standards. Healthy lifestyles are also promoted by national campaigns such as the "Five a Day" message and "Sugar Smart" adverts. The government also prevents advertising of negative lifestyle choices such as smoking and drinking alcohol, whilst also taxing these products to deter customers and maintaining a tax income to fund the NHS which deals with the consequences of such products.

KEYWORDS

Carcinogenic= something that causes cancer cells to form

Genetic= anything to do with DNA

Lifestyle= how someone lives (diet, hobbies, fitness, habits)

Welfare State= free services for tax payers e.g. education

IMPORTANT DATES

1909 = Salvarsan 606 discovered by Ehrlich

1944 = Penicillin made by Fleming, Florey & Chain

1960 = Lung cancer linked to smoking

MEDICINE IN BRITAIN: THE HISTORIC ENVIRONMENT
The British Sector of the Western Front

CONTEMPORARY SOURCES: Army statistics, Government reports on aspects of the war, Hospital records

Medical articles by doctors and nurses in the war, National army records for individual soldiers, National newspaper reports, Personal accounts of medical treatments by the people involved, and Photographs

Evacuation route:

1. Stretcher bearers

16 per battalion of a 1000 soldiers. Their job was to carry the wounded (often while being shot at) to where they could receive medical attention.

2. Regimental Aid Post (RAP)

At the RAP was a medical officer who decided if a patient was seriously injured (and sent to get treatment elsewhere) or was lightly injured (and could be bandaged quickly and sent back into the fighting).

3. Field Ambulance and Dressing Stations

These were about a quarter of a mile away from the front line, they had a staff of nurses and medical officers, and they checked and re-dressed patients' wounds.

4. Casualty Clearing Station (CCS) These were well-equipped medical centres often in tents or huts, staffed with approximately 7 doctors. Patients could receive X rays and surgery at the CCS. They were at least 7 miles from the frontline trenches.

5. Base Hospital

These were well equipped hospitals that were in original hospital buildings from before the war, or in refitted buildings e.g. schools. They were far away from the fighting and some specialised in certain types of injuries e.g. head wounds. If soldiers were too badly injured to be sent back to the frontline, they were sent back to Britain from the base hospital.

Timeline of events:

August 1914 =	The Great War begins
August-September 1914 =	Trenches dug along the front
October-November 1914 =	First Battle of Ypres
April-May 1915 =	Second Battle of Ypres
August 1915 =	Gallipoli Landings
February-December 1916 =	Battle of Verdun
July-November 1916 =	Battle of the Somme
April-May 1917 =	Battle of Arras
April 1917 =	USA enters the war
July-November 1917 =	Third Battle of Ypres
November-December 1917 =	Battle of Cambrai
October 1917 =	Russia leaves the war
March1918 =	German Spring Offensive
Summer and Autumn 1918 =	Allied attacks, Germany gives up

New methods:

* Blood banks - for transfusions (for the Battle of Cambrai in 1917)
* Brain surgery developed - for head wounds
* Carrel-Dakin solution - clean out wounds to prevent infection
* Mobile x-ray machines - to find metal in wounds (Britain had 6)
* Plastic surgery - to rebuild faces (a specialist hospital at Sidcup)
* Psychiatric medicine - to treat shell shock
* Thomas splint - to hold shattered bones in place

1.Create an evacuation route diagram and label it using the information on the left hand side.

2.Create a timeline for the First World War

3.Explain the strengths and weaknesses of each of the contemporary sources at the top of the page.

Early Elizabethan England,

TIMELINE OF EVENTS

1558 = Elizabeth becomes queen

1559 = the Religious Settlement

1566 = Dutch Revolt begins

1568 = MQS arrives in England

1569 = Revolt of the Northern Earls

1570 = Papal Bull

1571 = Ridolfi Plot

1576 = "Spanish Fury" in the Netherlands

1576 = First playhouse opens in London

1580 = Drake circumnavigates the globe

1583 = Throckmorton Plot

1584 = Treaty of Joinville

1585 = Treaty of Nonsuch

1585 = First American colony set up

1586 = Babington Plot

1587 = MQS executed

1587 = Drake's raid in Cadiz

1588 = Spanish Armada

ELIZABETH'S CHALLENGES

Elizabeth faced many challenges during her reign.

Sexism: Men were very sexist in the 16th century. Elizabeth's lords didn't like the idea of her ruling them as a single woman; they wanted her to marry a powerful man.

Legitimacy: Elizabeth's mother (Anne Boleyn) was Henry VIII's second wife and a Protestant. Anne was executed for adultery. Catholics didn't view the marriage as "official"; this made Elizabeth illegitimate (a bastard) and unable to inherit.

Religion: Christianity (and England) was split during the "Reformation" into Protestantism and Catholicism. Mary I had been a Catholic, Elizabeth was a Protestant.

Mary Queen of Scots: Elizabeth's cousin had a claim to the English throne and she was a Catholic. Elizabeth's enemies wanted to replace her with Mary Queen of Scots.

Foreign Countries: England was weak compared to Spain and France. Both countries were mainly Catholic.

Money: England had a national debt of £300,000 in 1558.

Poverty: Population increase was raising prices (inflation).

Trade: Spain dominated American trade. England's main export was wool and cloth. England's main trading partner was the Netherlands and they were ruled by Spain.

What challenges faced Elizabeth when she became Queen?

ELIZABETHAN SOCIETY

Elizabethan society was divided into classes and groups. There was very little movement between them (one exception was Sir Francis Drake), if you were born a poor farmer you would probably die a poor farmer.

90% of the population lived in the countryside and the social order was:

Nobility (large estates) ›››› gentry (small estates) ›››› yeomen farmers (small farms) ›››› tenant (renting) farmers ›››› labouring poor ›››› homeless vagrants

10% of the population lived in towns and the social order was:

Merchants ›››› professionals (e.g. lawyers) ›››› business owners ›››› craftspeople ›››› unemployed .

Draw a diagram showing the structure of Elizabethan society and label it.

THE RELIGIOUS SETTLEMENT

Elizabeth was a Protestant but she wanted to set up a Church of England that would keep the people of England happy and not to anger Puritans, Catholics or the Pope. In 1559 she introduced her "Religious Settlement". It was made up of three parts:

Act of Supremacy - Elizabeth was made the "Supreme Governor" of the church in England and everyone had to go to church on a Sunday or pay a shilling as a fine

Act of Uniformity - This set out what churches in England should look like and what the services should be like.

Royal Injunctions - These were a set of instructions to the clergy (people that worked in the Church) telling them what to wear and what to say.

The settlement angered Catholics as it removed Latin, the saints, and pilgrimages; and Puritans were annoyed that images were still allowed on church walls and that priests still wore vestments.

Explain Elizabeth's Religious Settlement of 1559.

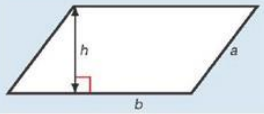
EXAM STYLE QUESTIONS

- **Describe two features of the Religious Settlement.**
- **Describe two features of Elizabethan society.**
- **Explain why Elizabeth faced so many challenges between 1558 and 1588.**
- **Explain why some people didn't like Elizabeth's Religious Settlement.**
- **'Elizabeth's greatest challenge was religion.' How far do you agree? Explain your answer.**

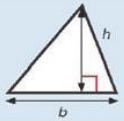
Areas

Rectangle = $l \times w$

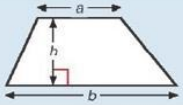
Parallelogram = $b \times h$



Triangle = $\frac{1}{2} \times b \times h$



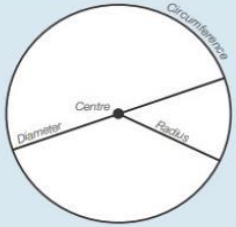
Trapezium = $\frac{1}{2}(a+b)h$



Circles

Circumference = $\pi \times diameter = \pi d$ or $2 \times \pi \times radius = 2\pi r$

Area of a circle = $\pi \times radius\ squared = \pi r^2$

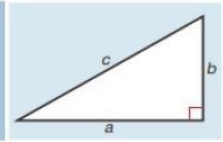


Right-angled triangles

Pythagoras' Theorem

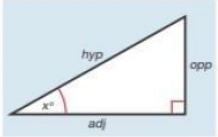
For a right-angled triangle,

$a^2 + b^2 = c^2$



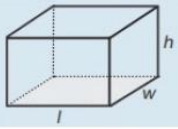
Trigonometric ratios (*new to F*)

$\sin x^\circ = \frac{opp}{hyp}$, $\cos x^\circ = \frac{adj}{hyp}$, $\tan x^\circ = \frac{opp}{adj}$

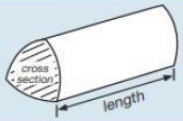


Volumes

Cuboid = $l \times w \times h$



Prism = $area\ of\ cross\ section \times length$

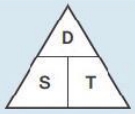


Cylinder = $\pi r^2 h$

Compound measures

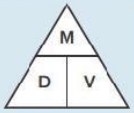
Speed

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



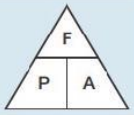
Density

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

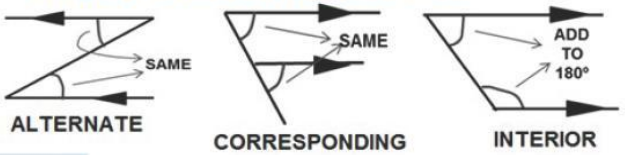


Pressure

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



Angles formed by parallel lines



Constructing Pie Charts

The angle to draw for each sector is

$$\text{Angle} = \frac{\text{frequency}}{\text{total}} \times 360°$$

Angles in Polygons

Sum of Interior Angles $= (n-2) \times 180°$

Where n is the number of sides of the shape

Exterior Angles add up to 360°

One exterior angle in a REGULAR polygon $= \frac{360°}{n}$

$Interior + Exterior = 180°$

Other useful formulae

$gradient = \frac{change\ in\ y}{change\ in\ x}$

$\%\ change = \frac{difference}{original} \times 100$

Types of numbers

SQUARE NUMBERS

→ 1, 4, 9, 16, 25, 36, 49, 64, 81, 100 etc

(1x1) (2x2) (3x3) (4x4) (5x5) (6x6) (7x7) (8x8) (9x9) (10x10)

CUBE NUMBERS

→ 1, 8, 27, 64, 125 etc

(1x1x1) (2x2x2) (3x3x3) (4x4x4) (5x5x5)

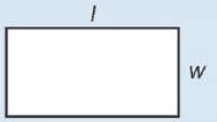
PRIME NUMBERS

→ 2, 3, 5, 7, 11, 13, 17, 19, 23, 29 etc

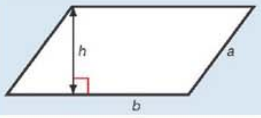
Foundation Formula Quiz

Areas

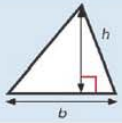
Rectangle =



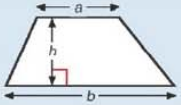
Parallelogram =



Triangle =



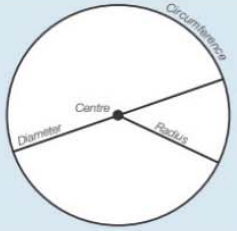
Trapezium =



Circles

Circumference =

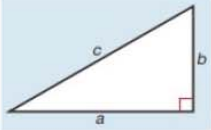
Area of a circle =



Right-angled triangles

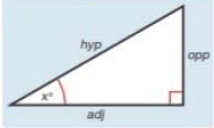
Pythagoras' Theorem

For a right-angled triangle,



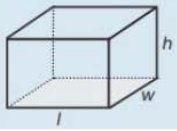
Trigonometric ratios (*new to F*)

$\sin x^o =$ $\cos x^o =$ $\tan x^o =$

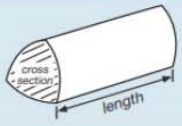


Volumes

Cuboid =



Prism =



Cylinder =

Compound measures

Speed

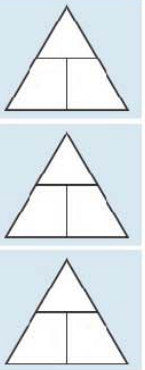
speed =

Density

density =

Pressure

pressure =



Angles formed by parallel lines

Constructing Pie Charts

The angle to draw for each sector is

Angle =

Angles in Polygons

Sum of Interior Angles =

Where *n* is the number of sides of the shape

Exterior Angles add up to

One exterior angle in a REGULAR polygon =

$Interior + Exterior =$

Other useful formu-

$gradient =$

$\%\ change =$

Types of numbers

SQUARE NUMBERS

CUBE NUMBERS

PRIME NUMBERS

Foundation Formula Quiz

1.Christian Worship

Worship: is the way in which Christians show their deep love, respect for God and forgiveness of sin or to seek Gods help for themselves or others who may be suffering.

Christians may worship alone or with others, in a special building like a Church, In people's homes or any appropriate place. Worship may involve; Bible readings, singing hymns, preaching, sharing food, pilgrimage, festivals, art, music or drama.

Christians can worship any time but Christians weekly public worship takes place on Sunday.

Types of worship:

⇒ Liturgical: a church service that follows a set structure or ritual

⇒ Non-Liturgical: a service that does not follow a set text or ritual.

Enquiry Task: Explain two types of worship [4]

2. Prayer

Prayer is how Christians communicate with God, through both talking and listening and being open to the guidance of the Holy Spirit. It is a two-way method of communication that gives Christians comfort as they feel that God is listening and may send messages back.

Jesus spoke often about the importance of prayer, as he felt it deepened a person's relationship with God. Similarly, many Christians believe that prayer can bring them closer to God.

Christians often use formal written prayers, which are often memorised in order to be recited both publicly and privately.
An example of this is the Lord's Prayer, which was the prayer that Jesus taught his followers when they asked him to pray. This can be found in the Anglican Book of Common Prayer.

Enquiry Task: Copy out the Lords Prayer and annotate what it tells Christians about the God.

3. Sacraments- Baptism

Is the ritual through which a person becomes a member of the Church and their sins are forgiven and he or she enters a new life with Jesus. As Christians believe everyone is a descendent from Adam and Eve who committed the first sin.

Rites vary but the priest or minister will say; 'I baptise you in the name of the father and of the son and the Holy Spirit' while pouring blessed water over the head of the baby. God parents and parents promise to raise the baby in the Christian faith. The child will be dressed in white and a Paschal candle.

A believer's baptism involves full immersion in a pool, symbolising the cleansing from sin and the rising up to new life with Christ. Each person will read a Bible passage and give a brief testimony of their faith. A key difference being the person has chosen to be part of the faith, they have made that decision.

Enquiry Task: Why do some people favor a believers baptism over an infant baptism?

4. Sacraments - Eucharist Pt 1

⇒ Is the sacrament that uses bread and wine to celebrate the sacrifice of Jesus and his resurrection.

⇒ Many Christians consider it to be the most important act of worship as it recalls the Last Supper of Jesus. **(Matthew 26:17-30)**

⇒ When they celebrate Communion they give thanks to God for his great love in sending Jesus to save people from sin.

Holy Communion is at the centre of their lives and worship. It reminds Christians that whilst they break bread together there are many in the world who are starving. It encourages them to work for equality and justice for all people.

They collect money during the service to support work being done in developing countries, the elderly, prisoners and the homeless.

Enquiry Task: Give two reasons why Christians celebrate the Holy Communion.

5. Sacraments Eucharist Pt2

A communion service in the Church of England is almost identical to that of the Catholic Church. One small difference is that the 'Peace' sign is shared at different points in theservice.

Catholics do this after the Lords Prayer, Anglicans do it before the offerings of bread and wine are brought to the altar.

Some Anglicans share the Catholic and Orthodox view that the bread and wine are transformed into Christs body and blood, but many believe that Jesus is present in the bread and wine in a spiritual way and only while it is being eaten.

In comparison in a non-conformist church there is an open table so anyone who wishes to take communion may receive the bread and wine.

The main emphasis is on this community meal being shared equally with all.

6. Pilgrimage to Lourdes

Pilgrimage is a journey made for religious reasons, alone or with other Christians, to a sacred place. They make a physical journey and a spiritual journey towards God.

Importance of pilgrimage: Grow closer to God and strengthen faith; Expresses sorrow for sin and be forgiven; Reflect on their lives; Pray for something special or thank God for a blessing

Lourdes:

In the south-west of France. Dedicated to Mary, the mother of Jesus. In 1858 a young girl had visions of Mary in a cave near the river. Mary told the girl to dig for a spring of water, which was discovered to have healing properties it has been recorded for example that people have returned cancer free.

Enquiry Task: Do you think miracles really can happen? How else can they be explained.

7. Pilgrimage to Iona

An island off the west coast of Scotland.

In the 6th century and Irish missionary who brought Christianity to Scotland established a small monastic community there. It is the home of the Iona Community and a place of Christian pilgrimage dedicated to the Virgin Mary.
Christians go there to study the Bible and pray, which may lead to spiritual growth. People often feel that they benefit from having their lives redirected or feel that they learn something about themselves while in Iona. This can allow Christians to face the challenges of life back at home in a different way.

It is also believed to be a place on earth where the veil between the spiritual place and physical place is at its thinnest.

Criticism of pilgrimage: Pilgrimages are often criticized as some Christians believe that the money spent could be better used helping those in need rather than paying for travel. Lourdes is often crowded with visitors and many people say the site has become too commercialised, with shops selling souvenirs. Some Christians feel that the benefits of the pilgrimage, like those felt at Iona can be felt at home when praying.

Enquiry Task: Why might some Christians choose not to go on pilgrimage?

8. Festivals-Christmas

Christmas celebrates the birth of Jesus, as described in the gospels of Matthew and Luke. The exact date of Jesus' birth is unknown, but the Western Church celebrates Christmas on 25 December and the Eastern Church celebrates it on 6 January.

Advent is the season leading up to Christmas. In Western Christianity, Advent includes the four Sundays before Christmas Day. In Eastern Christianity, Advent begins in mid-November. The word comes from the Latin 'adventus', which means 'arrival'. During this period, Christians prepare to celebrate Christ's birth or 'arrival' at Christmas.

Christmas is seen as a time for generosity and for thinking about the needs of others. Churches run events to provide food and temporary shelter to people in need. In the UK, Christmas is celebrated in both a religious and a secular way. There are church services with carols on Christmas Eve, and Christmas Day is a national holiday on which many Christians attend church services to thank God for his gift of Jesus.

9. Festivals-Easter

During Holy Week Christians remember the last week of Jesus' life. It includes several events:

Palm Sunday, this is the Sunday before Easter Sunday. It is the first day of Holy Week and celebrates Jesus' arrival in Jerusalem riding on a colt, often referred to as a donkey. Crowds of people greeted him, throwing palm branches on the road.

Maundy Thursday, is the Thursday before Easter Day. Christians remember when Jesus shared the Passover meal with his disciples, breaking bread and drinking wine, now known as the Last Supper.

Good Friday is the Friday before Easter Sunday when Christians remember Jesus' crucifixion. During Good Friday services, they reflect on the meaning of the crucifixion and the central message of Christianity.

Easter Sunday marks Jesus' resurrection.

Enquiry Task: Which festival is more important Christmas or Easter? Give reasons why.

11. Persecution and the WWC

The international society for human rights, claims that 80 percent of all acts of religious discrimination in the world today are directed at Christians.

The persecution ranges from forcing Christians to pay an extra tax, not allowing them to have good jobs or build churches, attacks on their homes and family and sometimes murder.

It 2015 it was reported that the ten countries where the most serious persecution was taking place are: North Korea, Somalia, Iraq, Syria, Afghanistan, Sudan, Iran, Pakistan, Eritrea and Nigeria.

'Do not be overcome by evil, but overcome evil with good'. Romans 12:21

If someone slaps you on the right cheek, turn to them the other cheek also'. Matthew 5:39

Enquiry Task: Why do you think Christian persecution is highest in the countries listed?

10. The local church in action

Food banks and street pastors

Christians believe that it is part of their duty to act in a moral way and this involves helping others around them.

The Church can play a vital role in Christians helping others as they provide: food banks a place where people living in poverty can go and collect some food.

Some Christians volunteer as street pastors, going out onto the streets at night to care for those in need.

They patrol in teams of men and women, usually from 10 p.m. to 4 a.m. on a Friday and Saturday night, to care for, listen to and help people who are out on the streets.

A street pastor is someone who is…

⇒ a Christian and is part of a local church;
⇒ concerned for society/ local community;
⇒ willing to engage with people, whatever their perspective on life and wherever they hang out;

"Faith Without Works Is Dead".

Enquiry Task: Interpret the meaning of the quote

12. Church growth

The Church has a mission to spread the good news to non-believers that Jesus is the Son of God and came to the world to be its saviour. Christians are called not only to know Jesus in their lives but also to make him known to others as Jesus instructed.

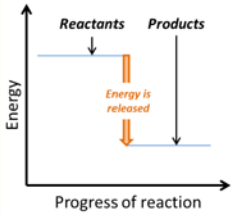
Christians have the responsibility to tell others of their faith. This may be spreading the word to people they meet in everyday life or, for some, through organised events or preaching.

Others feel called to go to other countries and become **missionaries,** which involves evangelism and in some cases humanitarian work. The main aim is to persuade people to accept Jesus as their Saviour and to extend the Church to every nation of the world.

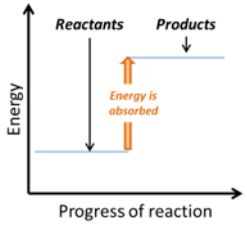
'Therefore go and make disciples of all nations' Matthew 28:1

Enquiry Task: What does humanitarian work involve?

Energy is conserved in chemical reactions. The amount of energy in the universe at the end of a chemical reaction is the same as before the reaction takes place. If a reaction transfers energy to the surroundings the product molecules must have less energy than the reactants, by the amount transferred.



An **exothermic** reaction is one that transfers energy to the surroundings so the temperature of the surroundings increases. Exothermic reactions include **combustion**, many **oxidation** reactions and **neutralisation**. Everyday uses of exothermic reactions include self-heating cans and hand warmers. All warm blooded animals rely on exothermic reactions to keep their body warm. The energy for this comes from **respiration**.



An **endothermic** reaction is one that takes in energy from the surroundings so the temperature of the surroundings decreases. Endothermic reactions include **thermal decompositions** and the reaction of citric acid and sodium hydrogencarbonate. Some **sports injury packs** are based on endothermic reactions. A nice endothermic reaction is **sherbet**. As the sherbet dissolves in water in your mouth it takes away energy so it has a cooling effect.

You can use very simple apparatus to measure the energy changes in reactions involving at least one solution. You can simply use a polystyrene cup and a thermometer to complete a **calorimetry investigation**. What kind of **variables** could you have? Why do you need at least one of the reactants to be a solution? Why use a polystyrene cup and not a beaker? How could you **improve** this method? These are just a few of the things you may be asked to consider.

Enquiry Task

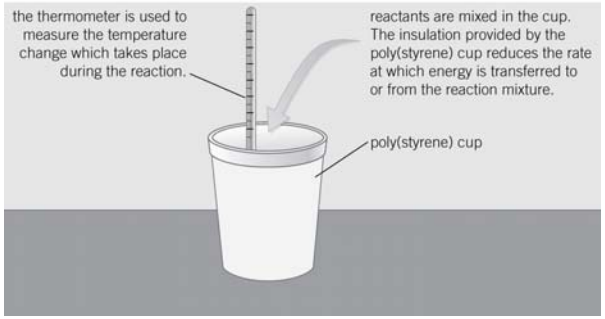
1. When nitric acid reacts with potassium hydroxide, a salt and water are made.

   a. Write the balanced chemical equation, with state symbols, for the reaction between nitric acid and potassium hydroxide.
   b. Write the ionic equation for the reaction between nitric acid and potassium hydroxide.
   c. Explain whether you think the reaction was exothermic or endothermic and relate this to energy transfer in the chemical reaction.

2. Polystyrene cup calorimetry can be used to monitor chemical reactions which happen in solution. React nitric acid with potassium hydroxide (Question 3). Take the starting temperature. Measure the temperature every 30 seconds. Add the potassium hydroxide at 2 minutes.

   a. Justify the use of a polystyrene cup rather than a 250 cm^3 beaker as a calorimeter.
   b. Explain why there is no temperature measurement at 2 minutes.
   c. Suggest how the equipment could be improved to reduce the main error in this experiment.

Required Practical - Calorimetry



Method

1. Use the first measuring cylinder to measure 25 cm^3 of the sodium hydroxide solution and pour this into the polystyrene cup.
2. Stand the polystyrene cup in the 250 cm^3 beaker.
3. In the second measuring cylinder, measure 25 cm^3 of hydrochloric acid.
4. Using the thermometer, measure the temperature of the sodium hydroxide every 30 seconds whilst gently stirring.
5. After exactly 2 minutes add the hydrochloric acid and continue to stir and to record the temperature of the solution every 30 seconds for 10 minutes.
6. Repeat this experiment twice:
7. with 25 cm^3 of copper (II) sulfate and iron filings
8. with 25 cm^3 potassium hydroxide and nitric acid.

Remember

You may be asked about a calorimetry experiment in your exams. What apparatus should you use and what are the variables? What do you expect to happen and what can go wrong?
Make a list of all of the things that you need to think about or take into consideration. Use diagrams to help.

Enquiry Task

Complete the gaps using the words in the box below. They may be used more than once, they may be singular or plural.

3

In an _____ reaction, the _____ increases. Heat _____ is released to the _____.

The reactants at the start of the _____ have _____ _____ than the _____ at the end of the end of the reaction.

In an _____ reaction, the _____ decreases. Heat _____ is taken in from the _____.

The reactants at the start of the _____ have _____ _____ than the _____ at the end of the end of the reaction.

energy, more, temperature, products, exothermic, reaction, surroundings, less, endothermic

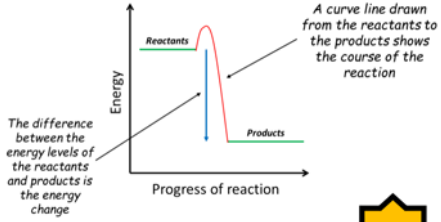
Chemical reactions can occur only when reacting particles **collide** with each other and with **sufficient energy**. The minimum amount of energy that particles must have to react is called the **activation energy**.

On the last page you saw the simple energy changes diagram to identify if a reaction was endothermic or exothermic.

Reaction profiles are more detailed and can be used to show the relative energies of reactants and products, the activation energy and the overall energy change of a reaction. The activation energy is the difference between the reactants and the top of the curved line.

Just like the simplified version there are the lines for the energy of the reactants and the products. There is also a vertical arrow showing the overall energy change of the reaction. On a reaction profile diagram there is also the addition of the curved line showing the progress of the reaction. Notice that the curve starts at the reactants line and goes upwards before dropping down to the products.

The reaction profile shown here is for an exothermic reaction. The products are at lower energy level than the reactants so energy has been transferred to the environment. As a result the environment gets hotter and the temperature rises.



Enquiry Task

3

1. Draw and label both an endothermic and exothermic reaction profile?

Worked example

Sketch a reaction profile for the following reaction:

$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

Overall energy change –816 kJ/mol

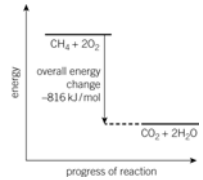
Label:

a the overall energy change for the reaction

b the activation energy.

Step 1

First, sketch out the axes for the reaction profile.

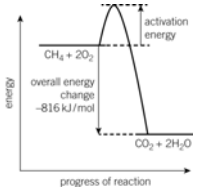


Step 2

Next, identify the reactants and products in the reaction.

Reactants = $CH_4 + 2O_2$

Products = $CO_2 + 2H_2O$



Step 3

Then draw horizontal lines on the reaction profile to represent the relative energies of the reactants and products. Label the overall energy change with a vertical arrow between the reactants and products. If the overall energy change for the reaction is positive, the products are higher in energy than the reactants (energy has been absorbed). If the overall energy change for the reaction is negative, the products are lower in energy that the reactants (energy has been released).

Step 4

Show the course of the reaction with a curved line from reactants to products. Indicate the activation energy with a vertical arrow from the energy of the reactants to the peak of the curve.

Enquiry Task

4

1. Draw labelled energy level diagrams for the following reactions:

a. $H_2 + Cl_2 \rightarrow 2HCl$; energy released to the surroundings = 184 kJ/mol

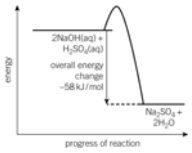
b. $ZnCO_3 \rightarrow ZnO + CO_2$; energy required from the surroundings = 71 kJ/mol

c. $C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$; energy released to the surroundings = 2200 kJ/mol

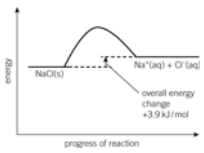
d. $HCl + NaOH \rightarrow NaCl + H_2O$; energy released to the surroundings = 57 kJ/mol

2. State if the following processes are endothermic or exothermic based on their energy level diagrams. In each case explain your choice based on the relative energies of the reactants and products.

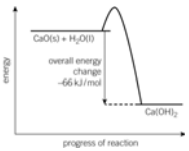
a)



b)



c)



During a chemical reaction, bonds are broken and bonds are formed. Energy must be supplied to break bonds in reactants (**bond breaking** is an **endothermic** process). Energy is transferred to the surroundings when bonds in products are formed (**bond making** is an **exothermic** process). The difference between the sum of the energy needed to break bonds in reactants and the sum of the energy released when bonds in products are formed is the overall energy change for a reaction. This can be shown in an equation by:

5

B reaking bonds
E
N
D
O
M aking bonds
E
X

overall energy change = total energy needed to break bonds - total energy transferred to the surroundings when bonds are formed

If the overall process is **endothermic**, the energy released when new bonds are formed is less than the energy absorbed when bonds are broken. The **overall energy change is positive**. If the overall process is **exothermic**, the energy released when new bonds are formed is greater than the energy absorbed when bonds are broken. The **overall energy change is negative**.

The energy needed to break a bond between two atoms is called the **bond energy** for that bond. The amount of energy released when that bond is formed is the same. Bond energies are measured in units of **kilojoules per mole (kJ/mol)**. You **do not need to learn** the actual values of different bond energies. They will always be provided in a question.

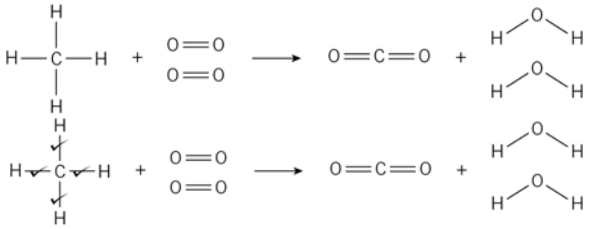
Worked example

Bond	Bond energy in kJ/mol
C–H	413
O=O	498
C=O	804
H–O	464

Use the bond energies provided in the table to calculate the energy change for the complete combustion of methane: $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

Step 1
First, draw out the molecules involved in the equation. Show all the bonds and include the correct numbers of each molecule from the balanced symbol equation.

Step 2
Next, draw tables to show the type and number of bonds broken to turn the reactants into individual atoms, and the type and number of bonds made to form the products. **Tip** – to make sure you don't miss any bonds, it is good practice to tick off the bonds as you make or break them, as shown below:



Step 3
Add up the energy required to break the bonds, and the energy released when the bonds are made, using the values from your tables.

Step 4
Calculate the total energy needed to break the bonds in the reactants and the total energy released when the products are formed.

Bond broken	Number	Energy needed in kJ/mol
C–H	4	4 × 413
O=O	2	2 × 498

Bond made	Number	Energy released in kJ/mol
C=O	2	2 × 804
H–O	4	4 × 464

Step 5
Calculate the overall energy change for the reaction using the equation:

overall energy change = total energy needed to break bonds – total energy released when bonds are formed

overall energy change = 2648 – 3464

= **– 816 kJ/mol**

Bond broken	Number	Energy needed in kJ/mol
C–H	4	4 × 413
O=O	2	2 × 498
Total energy needed		(4 × 413) + (2 × 498) = **2648**

Bond made	Number	Energy released in kJ/mol
C=O	2	2 × 804
H–O	4	4 × 464
Total energy released		(2 × 804) + (4 × 464) = **3464**

The overall energy change is negative so the reaction is exothermic. This fits with what we know in practice, as the combustion of any fuel is an exothermic process.

Enquiry Task 6

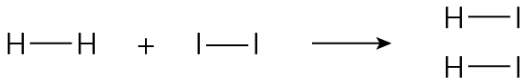
1. Calculate the overall energy change for each of the following reactions, given the total energy needed to break the bonds in the reactants and the total energy released when the bonds in the products are formed. State if each reaction is an endothermic or an exothermic process.

a. $C_2H_4 + H_2O \rightarrow CH_3CH_2OH$
Total energy needed to break the bonds in the reactants = 3192 kJ/mol
Total energy released when the bonds in the products are made = 3234 kJ/mol
(*2 marks*)

b. $2HBr \rightarrow H_2 + Br_2$
Total energy needed to break the bonds in the reactants = 732 kJ/mol
Total energy released when the bonds in the products are made = 628 kJ/mol
(*2 marks*)

c. $C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$
Total energy needed to break the bonds in the reactants = 6488 kJ/mol
Total energy released when the bonds in the products are made = 8542 kJ/mol
(*2 marks*)

2. Hydrogen, H_2, reacts with iodine, I_2, to form HI.



Bond	Bond energy in kJ/mol
H–H	436
I–I	148
H–I	295

a. State the number and type of bonds broken to turn an H_2 and an I_2 molecule into 2 x H atoms and 2 x I atoms.
(*1 mark*)

b. Calculate the energy needed to break the bonds in part **a**.
(*1 mark*)

c. State the number and type of bonds made when 2 x H atoms and 2 x I atoms are converted into 2 x HI molecules.
(*1 mark*)

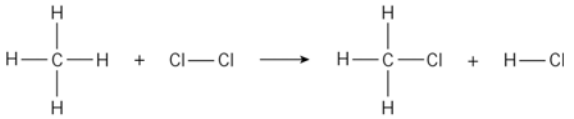
d. Calculate the energy released when the bonds in part **c** are formed.
(*1 mark*)

e. Calculate the overall energy change for the reaction using your answers to part **b** and **d**.
(*1 mark*)

f. State if the reaction is endothermic or exothermic.
(*1 mark*)

Enquiry Task 6

3. Methane, CH_4, reacts with chlorine, Cl_2, to form chloromethane, CH_3Cl, and hydrogen chloride, HCl.



Bond	Bond energy in kJ/mol
C–H	413
Cl–Cl	243
C–Cl	346
H–Cl	432

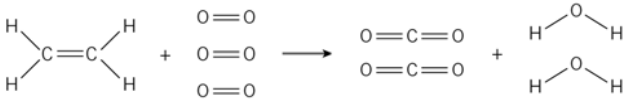
a. Complete the tables below to calculate the total energy needed to turn reactants into atoms and the total energy released to form the products for this reaction.
(*2 marks*)

Bond broken	Number	Energy needed in kJ/mol
Total energy needed		

Bond made	Number	Energy released in kJ/mol
Total energy released		

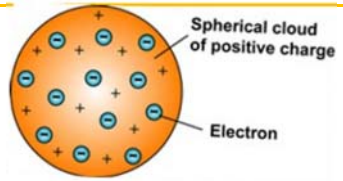
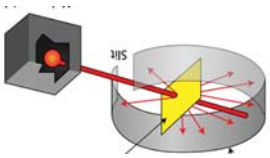
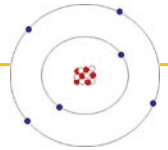
b. Calculate the overall energy change for the reaction with units. State if it is an endothermic or an exothermic process.
(*2 marks*)

4. Use the bond energies given in the table below to calculate the energy change for the complete combustion of **one mole** of ethene.
(*3 marks*)



Bond	Bond energy in kJ/mol
C–H	413
C=C	612
O=O	498
C=O	804
O–H	464

Developing the Model of the Atom

Scientist	Contribution
John Dalton	Atoms were first described as solid spheres.
JJ Thompson ***1897***	Thompson suggested the **Plumb Pudding** model—the atom is a ball of charge with electrons scattered within it. 
Ernest Rutherford ***1909***	 **Alpha scattering experiment —** Rutherford discovered that the mass is concentrated at the centre of the nucleus and the nucleus is charged. Most of the mass is in the nucleus. Most of the atom is. empty space
Niels Bohr ***1911***	Bohr theorised that the **electrons** were in shells orbiting the nucleus. 
James Chadwick ***1940***	Chadwick discovered **neutrons** in the nucleus.

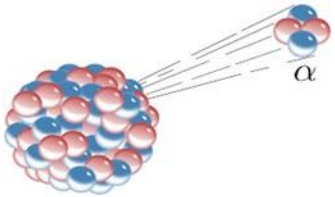
Isotopes

An **isotope** is an element with the same number of **protons** but a different number of **neutrons.** They have the same atomic number, but different mass numbers.

Some isotopes are unstable, as a result, decay and give out radiation. Ionising radiation is radiation that can knock electrons off atoms. Just how ionising this radiation is depends on how readily it can do this.

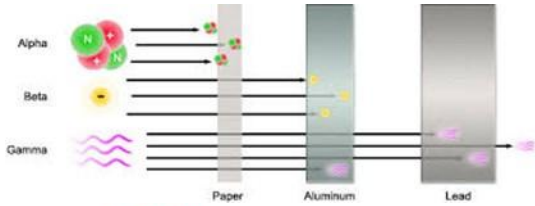
Alpha

Alpha radiation is an alpha particle emitted from the nucleus of a radioactive nuclei. It is made from **two protons** and **two neutrons.** They can't travel too far, only a few cm and are the least penetrating as they can get stopped by skin and paper. However, they are highly ionising because of their size



Beta

Beta radiation is a fast moving electron that can travel a few meters. It can be stopped by thin aluminium and is weakly ionising. Beta radiation is emitted by an atom when a neutron splits into a proton and an electron.



Gamma

A gamma wave is a wave of radiation and is the most penetrating and can only be stopped by thick lead. It can travel an infinite distance and is the least ionising.

Enquiry Task

Emma investigates the radiation from a radioactive source. Look at the table of her results.

Absorber	Count rate in counts per min (cpm)
No absorber	6750
Paper	6752
3mm aluminium	3200
5mm lead	400

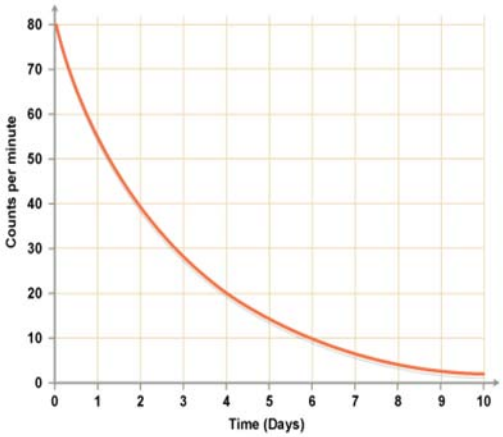
1. Use the information in the table to identify the type(s) of radiation given out by the radiation sources and explain your answer.

_____
_____
_____
_____
_____
_____

2. Nuclear radiation produces ionisation. What is ionisation?

_____
_____

Half Life



The half life is the time taken for the number of un-decayed radioactive nuclei to halve. Radioactivity is a random process and is measured in Becquerel's *Bq*. 1 Bq is one decay per second.

A graph of radioactive decay can be used to calculate the half life of a material.

Judging from the graph, the radioactive material has a half life of 2 days.

Alpha Decay Equations

An alpha particle is made of two protons and two neutrons. The atomic number goes down by two and its mass number decreases by four.

$$^{235}_{92}U \xrightarrow{\text{decay by releasing an alpha particle}} {}^{4}_{2}\alpha + {}^{231}_{90}Th$$

Beta Decay equations

A neutron turns into a proton and releases an electron. The mass of the nucleus stays the same but the proton number increases by one.

$$^{14}_{6}C \xrightarrow{\text{decay by releasing an beta particle}} {}^{0}_{-1}\beta + {}^{14}_{7}N$$

Gamma Rays

There is no change to the nucleus when a radioactive source emits gamma radiation. It is the nucleus getting rid of the excess radiation.

Contamination

When unwanted radioactive atoms get onto an object, it is said to be contaminated. If you touch a radioactive source without wearing gloves it is possible for the radioactive particles to get inside the body. This is why some industrial workers wear protective suits.

Irradiation

Objects near a radioactive source are irradiated by it. This simply means they are exposed to the radiation. Irradiating something does not mean they are radioactive . This is why some workers like radiographers work behind barriers.

Enquiry Task

1..Define the term half-life.

_____

_____

2. Cobalt 60 has an activity rate of 1000Bq and a half-life of 5 years. What will the activity be after 10 years?

_____

_____

3. What affect does alpha and beta decay have on the mass of the nucleus?

_____

_____

_____

4. Complete the following equation for alpha decay.

$$^{222}_{88}RA \longrightarrow {}^{4}_{2}He + {}^{218}_{86}Rn$$

5. Complete the following equation for a beta decay.

$$^{14}_{6}C \longrightarrow {}^{14}_{7}N + {}^{0}_{-1}e$$

6. State the difference between irradiation and commination using the following **keywords:** exposed, radioactive, contaminated, harmful.

_____

_____

_____

_____

_____

1

Homeostasis is the regulation of a **constant internal environment**. The conditions are maintained to ensure optimum conditions for metabolism and changes in response to both internal and external fluctuations.

In humans, homeostasis regulates the **blood glucose** (sugar) levels, the body **temperature, CO_2** levels and **water** levels.

The levels are monitored and regulated by automatic control systems which can be either nervous responses (coordinated by the **nervous system**) or chemical responses (coordinated by the **endocrine system**).

Information about the environment is called a **stimulus** and is detected by a **receptor**. The information is processed by a **central coordination** system and a response is initiated by an **effector**.

The nervous pathway:

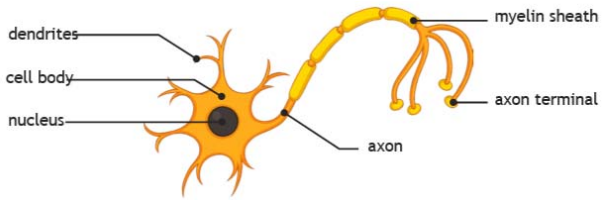
A stimulus is a change in the environment (internally or externally). In a typical response to stimuli, this information is received by the receptor and sent as an electrical impulse along a sensory neuron towards the central nervous system (CNS). The CNS is comprised of the brain and spinal cord. Here, the impulse is passed through relay neurons and a response to the stimulus is coordinated. This could be consciously or subconsciously. The CNS sends information about the response along a motor neuron as an electrical impulse. The effector receives the impulse and carries out the response.

[stimulus] receptor —>sensory neuron —>CNS—> motor neuron —. effector [response]

Examples of **receptors** include rod and cone cells within the eye which respond to light and allow us to see. Or it could be the cells in the skin which respond to pressure or temperature changes allowing us to feel. An **effector** could be a muscle or a gland. In response, a muscle might contract to make a movement or a gland releases a chemical into the body.

2

The Human Nervous System: The nervous system allows a fast, short-lived response to a stimulus in the surroundings. The information is received by a receptor, passed along the neurons (nerve cells) as an electrical impulse and results in a response.



The **axon** is the main part of the nerve cell. It is a long, stretched-out fibre of cytoplasm which the electrical impulse will travel along.
Some axons are surrounded in a layer of fatty cells called the **myelin sheath** and it helps to insulate the electrical impulse.
The branched endings, **dendrites**, connect the neurons together to create a network.

A **synapse** is the gap where the ends of two neurons meet. The information needs to be passed from one neuron to the next. The message is transmitted by chemical neurotransmitters. When the electrical impulse arrives at the terminal of the first neuron, it causes a release of neurotransmitter chemicals into the synapse. They travel across the gap and bind to receptor sites on the terminal of the next neuron. The receptor sites are specific for each type of neurotransmitter. A nerve impulse will only be created in the second neuron when a complimentary chemical binds.
A **reflex** is a fast and automatic response to a stimulus which may be harmful to the organism. They are an **involuntary** action. The pathway which carries the information about a reflex action is called a **reflex arc**.

Humans use the nervous system to react to changes in the environment.

1

(a) (i) Which word means a change in the environment?

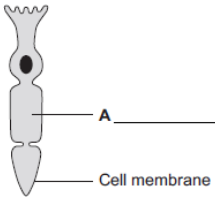
neurone	reflex	stimulus

(1)

(ii) **Figure 1** shows a light receptor cell. Use the correct answer from the box to label part **A** on **Figure 1**.

chloroplast	cytoplasm	vacuole

Figure 1



(ii) **A** boy is riding a bicycle on a sunny day. The boy's response to danger is to pull on the bicycle brakes. Which type of effector causes this response?

Tick **one** box. (1)

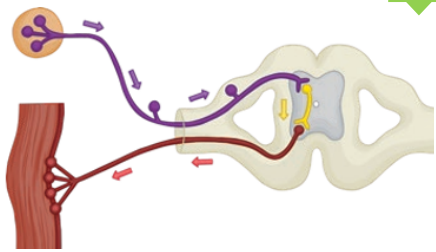
A gland	☐
A muscle	☐
A synapse	☐

Draw the answer to Question i_____i2)

TASK

2

Read the 4 steps to the reflex arc and order them from the first to the last step.



1-

2-

3-

4-

A-The stimulus is detected by the **receptor** cells and electrical **impulse** is transmitted along the **sensory neuron**.

an

B– A **reflex arc** begins with the **stimulus** e.g. a bee sting or a hot objecton the skin.

C- The response is coordinated **automatically** and sent along the **motor** neuron to the **effector** cells.

D-The impulse is passed through **relay neurons** in the spinal cord or the **unconscious** areas of the brain.

Copy and label the reflex arc, showing where each of the steps happen.

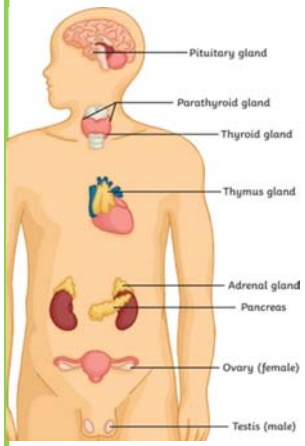
3 The endocrine system

The endocrine system is the collection of gland that produce and release hormones.

Hormones are chemical messengers transported in the bloodstream to and effector where they can activate a response. Hormones do a similar job to neurons in the nervous system but there are some differences.

The hormones travel in the blood plasma to their target cells and affect only these target cells.

	neurons	hormones
speed	fast	slow
duration	short	long
target area	specific	general



EXAMPLES:

The pituitary gland produces FSH and LH to regulate the menstrual cycle. It acts as a master gland as many of the hormones it releases control and coordinate the release of other hormones from other glands in the body.

The ovaries produce oestrogen. During puberty, it increases and stimulates and egg to be released on average every 28 days.

The testes produce testosterone, which stimulates the production of sperm.

4 Task

(ai) Name glands **A** and **B**. _____**(2)**

(aii) Gland **A** produces the hormone Follicle

Stimulating Hormone (FSH). FSH controls changes in gland **B**.

How does FSH move from gland **A** to gland **B**?_____**(1)**

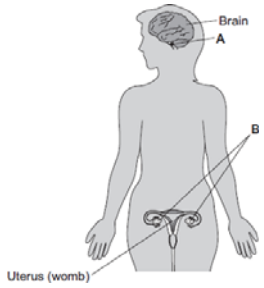
(b) A woman is not able to become pregnant. The woman does not produce mature eggs. The woman decides to have In Vitro Fertilisation (IVF) treatment.

Which **two** hormones will help the woman produce and release mature eggs?

Tick **one** box. (1)

- ☐ FSH and Luteinising Hormone (LH)
- ☐ FSH and oestrogen
- ☐ Luteinising Hormone (LH) and oestrogen

The diagram shows the position of two glands, **A** and **B**, in a woman



3 Task

A–Give 3 examples of glands together with the hormones they produce

_____(3)

B- Compare the endocrine and nervous system by giving a similarity between them and two differences

_____(3)

C-Explain why the nervous system is better suited for reflex action than the endocrine system

_____(2)

4

The menstrual cycle: occurs in females, approximately every **28 days**. It is a cyclical process of the building of the lining of the **uterus** and **ovulation**. If the **egg** become fertilised by a sperm, then **pregnancy** follows.

If the egg is not fertilised, then the lining of the uterus is shed away and leaves the body as the **menstruation** (or period).

Fertility can be controlled by a variety of hormonal and non-hormonal methods of contraception. These include:

- oral contraceptives that contain hormones to inhibit FSH production so that no eggs mature
- injection, implant or skin patch of slow release progesterone to inhibit the maturation and release of eggs for a number of months or years
- barrier methods such as condoms and diaphragms which prevent the sperm reaching an egg
- intrauterine devices which prevent the implantation of an embryo or release a hormone•
- spermicidal agents which kill or disable sperm
- abstaining from intercourse when an egg may be in the oviduct
- surgical methods of male and female sterilisation.

Hormone	Where It Is Produced	Response Caused	Interaction with Other Hormones (HT only)
FSH	pituitary gland	An egg to develop in one of the ovaries.	Stimulates the production of oestrogen.
oestrogen	ovaries	The lining of the uterus builds up and thickens.	Stimulates the production of LH. Inhibits the production of FSH.
LH	pituitary gland	Ovulation (at around day 14 of the cycle).	Indirectly stimulates the production of progesterone.
progesterone	ovaries	The uterus lining to maintain.	Inhibits the production of LH.

Hormones can be used to treat infertility: (HT)

Giving FSH and LH in a 'fertility drug' to a woman.

In Vitro Fertilisation (IVF) treatment. IVF involves giving a mother FSH and LH to stimulate the maturation of several eggs. The eggs are collected from the mother and fertilised by sperm from the father in the laboratory. The fertilised eggs develop into embryos. At the stage when they are tiny balls of cells, one or two embryos are inserted into the mother's uterus (womb).

5

Task

The concentration of glucose in the blood is controlled by homeostasis.

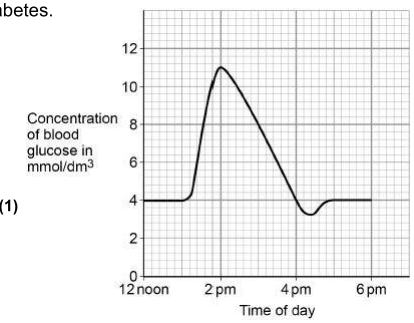
(a) Give **one** other example of an internal condition controlled by homeostasis._____**(1)**

(b) Calculate the increase in blood glucose concentration between 1 pm and 2 pm._____

Increase in blood glucose = _____ mmol/dm**(1)**

(c) Suggest at what time the person ate lunch. Use the graph —>
_____**(1)**

The graph below shows the change in glucose concentration in the blood of a person with Type 1 diabetes.



(d) Name the hormone the person injected that caused the blood glucose concentration to decrease._____**(1)**

5

Diabetes: There are two types of diabetes: type 1 and type 2.

Type 1 diabetes is a disorder affecting the pancreas. In type 1 diabetes, the pancreas does not produce enough insulin to control the blood sugar level and so the levels become higher than normal. Type 1 diabetes is usually treated by injections of insulin.

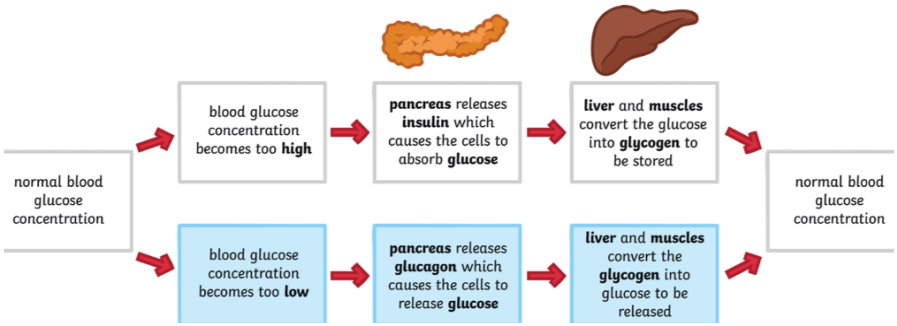
Type 2 diabetes is a disorder of effector cells which no longer respond to the hormones released from the pancreas. Type 2 diabetes can usually be managed through lifestyle choices such as maintaining a carbohydrate-controlled diet and regular exercise .The risk of developing type 2 diabetes is higher in people who are obese (BMI>30)

Control of blood glucose

The pancreas is the organ and gland which monitors and regulates the blood glucose concentration.

(HT only)*If the blood glucose concentration becomes too low ,a negative feedback loop is triggered and the pan-creas releases another hormone ,* ***glucagon****, which acts on the liver and muscles to cause the*

stored ***glycogen*** *to be converted back into* ***glucose*** *and released into the bloodstream.*



6

Investigation to see if reaction times can be reduced with practice.

In this experiment you are working with a partner and you are always using the opposite hand to your writing hand.

1. One of the pair sits upright on a chair and places their forearm on the table so that their hand is hanging over the edge of the table.
2. The other partner places a ruler vertically between the person sitting down's thumb and first finger. The thumb and first finger should be as far apart as possible.
3. Ensure the 0cm end of the ruler is pointing downwards.
4. Place the 0cm mark level with the top of the thumb and drop without telling your partner you are going to do it. Do tell them that the aim is for them to catch the ruler as quickly as possible.
5. Reading from the top of the thumb, record how many centimetres it took to catch.
6. Repeat nine more times.
7. Swap roles with your partner.
8. Using the reaction time conversion tables, convert your results from centimetres to reaction times (s).

The independent variable is the method for improvement e.g. amount of practice, use of caffeine.

The dependent variable is the reaction time in seconds (from the cm to catch the ruler)

Task

6

Students investigated the effect of lack of sleep on reaction time. This is the method used.

1. Each student sleeps for a different amount of time.
2. Each student then completes a reaction time test on the computer five times.

The computer program asks the students to press a key on the keyboard when they hear a sound played at random. The table below shows the results of the investigation.

Student	Number of hours of sleep	Reaction time in milliseconds			
		Test 1	Test 2	Test 3	Mean
A	8	229.6	253.3	233.4	238.8
B	6	298.3	308.7	269.1	292.0
C	4	211.2	218.9	206.5	212.2
D	2	449.3	445.2	441.9	445.5
E	1	712.0	717.9	715.3	715.1

1- Calculate the percentage decrease in mean reaction time when the number of hours of sleep increases from 1 hour to 8 hours._____

Percentage decrease in reaction time = _____**(2)**

2- Apart from using a computer program, describe one other method of measuring reaction time._____
_____**(4)**

3.1 Key considerations when planning an outdoor activity in a specified location When planning an outdoor activity, focus on the precise activity that you wish to do. The table below can support you with planning.				
Target client	Activity idea	Aims and objectives	Location	Numbers
Who is the activity for?	What do you want to do?	Why do you want to do it?	Where do you want to do it?	What is the ideal size of the group?

STEP 1: Identify potential hazards	**STEP 2:** Who is at risk?	**STEP 3– EXISTING CONTROL MEASURES-** List what could be done to reduce the risk of hazard and any actions needed.	**STEP 4- RISK RATING** Severity x Probability	**STEP 5– PREVENTATIVE MEASURES and RESPONSIBILITIES**
Falling off bike	Instructors and students	Check the route prior to setting off. Check the ability levels of the group in warm up. Correct introduction of activities.	Minor x Likely	Carefully monitor group in open areas (e.g. trees, shrubs and potholes). Spotting of group when riding technical sections. Insist group ride at appropriate pace. Carry first aid kit. **LEADERS**

3.1.1 Key considerations to include	
Health and safety	Needed to protect the group from risk and allow them to learn the activity. The leader needs to consider whether the activity is suitable for the group concerned, whether all risks have been identified and if there is a requirement for a first aider.
Personnel	An appropriate staffing ratio to supervise the activity. National Governing Bodies give guidelines to the appropriate ratio. The qualifications of the instructor should be appropriate and up to date. The instructor should have a knowledge of the local environment which is being used.
Unstable terrain	Leaders should plan to take into account changes in terrain (e.g. rock falls) with a simple 'what to do if' plan.
Inappropriate equipment	The organiser and leader should make sure the correct equipment is available, as poor or inappropriate equipment is hazardous. The equipment should be cleaned and checked before setting out on the activity.
Inappropriate clothing	Participants should be made aware of what is required for them to wear. They should ensure they have appropriate footwear and waterproof or warm clothing where required.
Unforeseen weather conditions	Most OAA activities take place outdoors. The organisers should be prepared for changed in weather conditions and the risks that these present. For example, unexpected rain leading to hypothermia if the temperature drops.
Poor organisation	Failure to check for weather. Losing track of time. Lack of contingency planning in the event of difficult or unforeseen circumstances.
Getting lost	Presence of animals or insect bites

3.3 Emergency Procedure Plan	
An emergency procedure is needed as circumstances can change at any time. The people involved must be prepared and ready to implement the emergency procedure plan if required, in the event of injury or illness which may require first aid or communication/contact in the event of rescue being required. An alternative escape route must be in place.	
First Aid Kit	There must be a first aider available and there must be a suitable first aid kit containing basic items such as plasters, blister dressing, small wound dressings, bandages and painkillers.
Rescue	Mobile phones are useful for calling for help, but signal may be limited. Radios can be useful in these areas. If neither are practical then a usual practice is for the main group to remain with the casualty where two people set off for help to the nearest habitation or road to call for help.

3.4 Demonstrate appropriate skills in outdoor activities	
Safe practice	You should ensure that you are listening carefully to instructions. Make sue you have the correct clothing and equipment . Be aware of emergency procedures.
Communication skills	Demonstrate verbal communication appropriate for the situation. Use non-verbal communication when needed. Use appropriate language and ensure that specific terminology is understood.
Decision making skills	Make decisions which maintain safety of all participants. Consider any solutions to maximise efficiency. Weigh up the strengths and weaknesses of ideas.
Problem solving skills	Prioritise problems and aim to solve them. Consider previous experiences.
Identify and clarify issues	There will be situations where you need to identify problems.
Teamworking skills	Demonstrate a number of key skills such as reliability, active listening, active participation, working well with others.

4.1 Evaluate participation in an outdoor activity	
What aspects went well?	What was successful? What did you enjoy? Would you like to do the activity again? Why?
What aspects could be improved?	What did not go so well? What aspects did you not enjoy? If you were completing the activity again, what would you change? Why?

4.2 Evaluate the value of participating in OAA			
Physical Benefits	**Social Benefits**	**Emotional Benefits**	**Intellectual Benefits**
Increased fitness. Burningcalories. Improve muscle tone, strength. Reduce risk of obesity, diabetes, cancer and heart attacks.	Working with others. Socialising. Trusting others.	Improving confidence and self-esteem. Making new friends. Fresh air and exercise stimulate oxygen intake and releasing chemicals from the brain.	Development of decision making and problem solving skills. Planning and organisation skills.

Need to Know Dictionary: English –Poetry and Language Paper 1

Word	Definition
Rhyme	The repetition of syllables, typically at the end of a verse line.
Rhythm	The beat and pace of a poem.
Stanza	Stanzas separate poems into groups of lines.
Juxtaposition	A literary technique in which two or more ideas, places, characters and their actions are placed side by side in a narrative or a poem for the purpose of developing comparisons and contrasts.
Metaphor	A metaphor is a word or a phrase used to describe something as if it were something else.
Atmosphere	The pervading tone or mood of a place, situation, or creative work.
Intentions	The writer's intentions are the ideas he/she wants to convey/express to the reader.
Imaginative	Having or showing creativity or inventiveness.
Interpretation	How you, as a reader, respond to a text.
Implies	To imply is to indicate or suggest something without actually stating it.

Need to Know Dictionary: Maths – Transformations and Vectors

Word	Definition
Translation	Moving a shape left, right, up or down without rotating, enlarging or reflecting.
Rotation	Turning around a centre.
Reflection	A shape or image as it would be seen in a mirror.
Enlarge	Changing the size of a shape by a scale factor.
Scale factor	A ratio between corresponding measurements of an object and a representation of that object.
Invariant	A property that does not change after a transformation.
Vector	An object that has both magnitude and direction.
Magnitude	The size of something.
Scalar	A single number used to multiply vectors.
Multiplier	A number use to multiply another number.

Need to Know Dictionary: Science – Infection & Response, Electrolysis & Atomic Structure

Word	Definition
Pathogen	Microorganisms that cause disease.
Engulf	Engulf is a verb that means being completely surrounded, soaked, or covered. In science we refer to engulfing when discussing phagocytosis, the process by which certain living cells called phagocytes ingest or engulf other cells or particles.
Antibiotic	An antibiotic is a type of antimicrobial substance active against bacteria. It is the most important type of antibacterial agent for fighting bacterial infections, and antibiotic medications are widely used in the treatment and prevention of such infections. They may either kill or inhibit the growth of bacteria.
Electrode	An electrode is a rod where current enters and leaves an electrolyte. When the current leaves the electrodes it is known as the cathode (negative) and when the current enters it is known as the anode (positive). Electrodes are vital components of electrochemical cells.
Electrolyte	A liquid, containing free moving ions, which is broken down by electricity in the process of electrolysis.
Ionic	Ionic things have something to do with ions, or charged molecules. An ion is a charged particle. An ionic bond is the attraction that occurs between ions with opposite charges. When you see the adjective ionic, you'll know the topic is science. There are ionic compounds, which are two or more atoms held together with ionic bonding.
Alpha	Alpha radiation particles each composed of two protons and two neutrons, emitted by an unstable nucleus. Commonly described as a Helium nucleus.
Beta	Beta particles that are high energy electrons created in, and emitted from, unstable nuclei.
Gamma	Electromagnetic radiation emitted from unstable nuclei in radioactive substances, such as the Sun, the Earth core, etc.
Radiation	The emission of energy as electromagnetic waves or as moving subatomic particles, especially high-energy particles which cause ionisation.

Need to Know Dictionary: French

Word	Definition
Verb	A word that shows an action, such as 'jouer', or a state of being such as 'être or 'avoir'.
Adjective	A word that describes a noun.
Adjectival agreement	In French, adjectives must agree with their noun, which means that they have to show whether they are masculine or feminine and singular or plural to match the noun.
First person singular	The pronoun 'Je' is first person singular.
Second person singular	The pronoun 'Tu' is second person singular.
Third person singular	The pronouns 'Il/Elle/On' are third person singular.
Masculine and Feminine	•All French nouns have a grammatical gender - they are either masculine or feminine. EG: - 'le père', •'la mère'.
Present tense	Use the present tense to describe what happens regularly and what is happening now.
Pronoun	Pronouns replace nouns in a sentence.
Liaison	When a word ends in s, x, t or n and the next word starts with a vowel or an h, the s and x will sound like z, and the t and the n will be pronounced. This is called a 'liaison', as the words are linked together. EG: -'C'est très ennuyeux'.
Silent final consonant	•In French, some letters are silent, either at the start or at the end of a word, e.g. 'hôtel, 'chat'.
Phonics	The sounds that make up words.
Accent	Accents placed on words change the sound of a letter, e.g. é as in 'café'.
Question	Questions in French can be formed using 'Est-ce que', or by switching the verb and subject, 'Faites-vous vos devoirs ce soir?'
Modal verbs	EG: - pouvoir (be able to) devoir (have to, must, should) vouloir (want to).
Infinitive	An infinitive is a verb that has not been changed and is in its original form, e.g. ending in –er, -ir, -re meaning 'to...'.

Need to Know Dictionary: Geography – UK Landscapes

Word	Definition
Abrasion	Rocks carried along by the river, wear down the river bed and banks.
Attrition	Rocks being carried by the river smash together and break into smaller, smoother and rounder particles.
Cross profile	The side to side cross-section of a river channel and/or valley.
Dam and reservoir	A barrier (made on earth, concrete or stone) built across a valley to interrupt river flow and create a man-made lake (reservoir) which stores water and controls the discharge of the river.
Discharge	The quantity of water that passes a given point on a stream or river-bank within a given period of time.
Embankments	Raised banks constructed along the river; they effectively make the river deeper so it can hold more water. They are expensive and do not look natural but they do protect the land around them.
Estuary	The tidal mouth of a river where it meets the sea; wide banks of deposited mud are exposed at low tide.
Flood	Occurs when river discharge exceeds river channel capacity and water spills out of the channel onto the floodplain and other areas.
Flood plain	The relatively flat area forming the valley floor on either side of a river channel, which is sometimes flooded.
Flood plain zoning	This attempts to organise the flood defences in such a way that land that is near the river and often floods is not built on. This could be used for pastoral farming, playing fields etc. The areas that rarely get flooded would therefore be used for houses, transport and industry.
Gorge	A narrow, steep sided valley, often formed as a waterfall retreats upstream.
Hard engineering	Involves the building of entirely artificial structures using various materials such as rock, concrete and steel to reduce, disrupt or stop the impact of river processes.

Need to Know Dictionary: History - Medicine

Word	Definition
Because	A useful conjunction used to explain how or why something is the case.
Disease	Illness affecting plants and animals.
Humours	These were four liquids in your body – blood, yellow bile, black bile and phlegm (pronounced 'flem') – which needed to be in balance for you to be healthy. Each liquid gave off vapours, which entered the brain and altered the person.
Inoculation	Putting a low dose of a disease into the body to help it fight against a more serious attack of the disease.
Meant	The past tense of the verb 'to mean' is 'meant' not 'ment'.
Prevention	An action taken to decrease the chance of getting a disease or condition.
Remedy	A medicine, application, or treatment that relieves or cures a disease.
Therefore	An adverb that means 'as a consequence', 'as a result',' or 'hence'.
Treatment	Medical care given to a patient for an illness or injury.
Vaccination	Vaccines allow a dead or altered form of the disease causing pathogens to be introduced into the body, which contain a specific antigen. This causes the immune system, specifically the white blood cells, to produce complementary antibodies, which target and attach to the antigen.

Need to Know Dictionary: Engineering Design

Word	Definition
Prototype	A prototype is a model of a product used to explore design alternatives, test theories, confirm performance and ensure the product is safe and user-friendly. Engineers use prototypes to figure out specific unknowns still present in the design.
Functionality	The quality of being suited to serve a purpose well; practicality.
Injection Moulding	The shaping of rubber or plastic articles by injecting heated material into a mould.
Identify	This phase is about articulating customer needs. The customer's main communication point and desire is identified. Teams and team charters are developed. Roles are designated for team members. milestones and benchmarks are planned.
Design	This phase defines the functional requirements of the process or product, as well as alternate processes that may be required. Concept designs are created, simulations are run and risks assessed. The plans for procurement and manufacturing are made.
Optimise	In this phase, tolerances are assessed, performance is predicted and alternate designs and design elements are tested.
Validate	In this phase, performance is compared to predictions based on previous simulations. Prototypes are tested, assessed and validated. Changes to business processes can be made here.
Ergonomic	Ergonomics is a consideration that leads to a product being designed in a way to make it easy to use.
Anthropometric	Anthropometrics is the practice of taking measurements of the human body and provides categorised data that can be used by designers.
Sustainable	Sustainable engineering is the process of designing or operating systems so that they use energy and resources sustainably, i.e. at a rate that does not damage the natural environment, or the ability of future generations to meet their own needs.

Need to Know Dictionary: Art

Word	Definition
Formal elements	The formal elements are the parts used to make a piece of artwork. The art elements are line, shape, space, form, tone, texture, pattern, colour and composition.
Line	A line is a mark made on a surface that joins different points
Shape	A shape is a two-dimensional area. Shapes have height and width but not depth. A shape might be defined by an outline or through contrast with its surroundings, such as through colour or tone.
Form	Form refers to three dimensional objects. While shapes have two dimensions (height and width), forms have three dimensions (height, width and depth).
Tone	Tone means how light or dark something is. The tones artists and designers use and the contrast between them can create very different moods and visual effects.
Composition	Composition is the arrangement of different elements within an artwork or design.
Popular Culture	In everything from film to food labels, popular culture includes the cultural activities, products, images, and ideas embraced by the broader public, particularly as seen in mass media.
Contrasting	Emphasis through contrast is when artists and designers draw attention to part of a composition by making it different from its surroundings.
Identity	Identity is the way we perceive and express ourselves. Many artists use their work to express, explore, and question ideas about identity.
Anatomical (adjective)	Referring to the structure of an animal or plant, or of any of its parts.
Refine	Refinement is the improvement of the idea. It does not involve radical changes, but is about making small changes which improve the idea in some way.

Need to Know Dictionary: Drama

Word	Definition
Clarity	Projective your voice so that every word can be heard with enough strength and resonance to fill a theatre auditorium.
Articulation	The ability to make every sound and consonant clear, so that individual letters are not lost within words and they are sounded correctly.
Remembering lines	There are different methods of learning lines to make them easier to remember such as line run, listening to a script and drawing pictures.
Movement memory	The body gets used to doing a movement after it has done it any number of times. This helps the mind adapt so that it has to think less in order to perform that function.
Spatial awareness	Spatial awareness is a well-thought-out awareness of things in the space around us, including the awareness of our body's position in space.
Focus	Focus, as an element of drama, refers to the exploration of ways the attention of an audience can be drawn to certain elements of what is happening in a performance space.
Presentation	The appearance of a performance to the audience based on a combination of form and style.
Intention	A consideration of the effect you hope to have on the audience.
Stage presence	A magnetic power to ultimately hold a stage. This could be a combination of self-confidence, spatial awareness and ability.
Commitment	Commitment means learning your lines, showing up on time, sharing generously your work with your cast members, doing your character homework and treating yours and cast members work seriously.

Need to Know Dictionary: Music

Word	Definition
Self-discipline	The ability or will-power to work to improve on whatever it is you are doing.
Development	In music, development is a process by which a musical idea is communicated in the course of a composition.
Composition	Making up your own music is called composition.
Performance	Performance is when all the elements of musical preparation come together to be played for an audience.
Melody	A melody is a linear sequence of notes. It is a combination of pitch and rhythm.
Accompaniment	The musical part which provides the rhythmic and/or harmonic support for the melody or main themes of a song or instrumental piece.
Attack and decay	Attack refers to the beginning build-up of a note. Decay refers to how long sounds remain at their peak loudness until they start to disappear.
Elements	Some of the most important elements of music are dynamics, tempo, pitch, timbre, duration, texture, melody and structure. These elements help us both to describe the music that we hear and to create contrast in our music so that it sounds interesting.
Equipment	The necessary items or objects for a particular musical purpose.
Portfolio	This organises your educational background in music, work experience, performances, and potential.

Need to Know Dictionary: Sports Studies

Word	Definition
Citizenship	An effective citizenship can be defined as someone who gives back or contributes in a meaningful way to their community. This could be someone who volunteers for causes they care about, teaching, coaching or being involved in their community.
Etiquette	Sport has unwritten rules or customs – etiquette – to uphold respect and fairness. These help people to play in the 'spirit of the game'. They often require players to take an active approach to respect and fairness, not just avoid breaking the rules.
Gamesmanship	Without breaking them, players may bend the rules and use questionable methods to gain an advantage.
Infrastructure	Sports infrastructure, such as stadiums, sports halls, swimming pools, fitness facilities, ski resorts, golf courses and other sports infrastructure.
Initiative	An initiative empowers clubs to create opportunities that bring people together and change lives for the better. It is also the ability to assess and initiate things independently.
Inclusion	Making sure that everyone can take part.
Investment	The action or process of investing money for profit.
Legacy	This refers to the planned and unplanned, positive and negative, intangible and tangible effects that are created through an event.
Reputation	Reputation is a concept by which a sports organisation, club or individual tries to create a positive image of itself.
Sportsmanship	Sportsmanship means playing within the rules and understanding and using sports etiquette. It is playing fairly in the spirit of the game, showing respect and fair play to opponents and graciousness in both victory and defeat.

Need to Know Dictionary: Religious Studies

Word	Definition
Akhirah	Akhirah is the word Muslims use to refer to life after death.
JIhad	The Muslim concept of jihad is often confused with the idea of holy war. Jihad means 'to struggle in the way of Allah', and refers at least as much to an inner or personal spiritual struggle as it does to war and fighting.
Predestination	This means that Allah already knows everything that will happen, and nothing happens unless it is according to Allah's will. However, this does not mean that the choices people make are not free choices. Instead, it means that Allah knows what people will chose to do.
Prophet	Prophets are messengers sent from God, or Allah, to help Muslims follow the straight path. Although the names of many prophets are recorded in both the Bible and the Qur'an, the Qur'an records the names of twenty-five prophets.
Revelation	Revelation is when something that was hidden becomes known. For many religious people, revelation comes from God and reveals something about God.
Ummah	The Arabic word for 'nation' or 'community'. It is the world-wide community of followers of Islam.
Supremacy	The state or condition of being superior to all others in authority, power, or status. In Islam, Allah is the name Muslims use for the supreme and unique God, who created and rules everything.
Surah	The Qur'an consists of 114 chapters, or Surahs, which were revealed over a period of 23 years. Surahs are divided into verses or ayat. The Qur'an instructs Muslims on how to behave and sets out what is right and wrong.
Rak'ah	A unit of bodily actions and recitations from the Qur'an said during prayer. Each prayer consists of various numbers of rak'ahs.
Prostration	*In Islam, this is the act of kneeling with forehead, hands, knees and feet touching the floor.*

Need to Know Dictionary: Hospitality and Catering

Word	Definition
Macronutrients	Macronutrients are nutrients that are needed in large amounts by the body – protein, fat and carbohydrate.
Micronutrients	Micronutrients are vitamins and minerals needed by the body in small amounts.
Nutritional	The nutritional content of food is all the substances that are in it which help you to remain healthy.
Unsatisfactory	Not satisfactory; not good enough; below acceptable standard.
Compare	Estimate, measure, or note the similarity or dissimilarity between.
Analyse	Examine (something) methodically and in detail, typically in order to explain and interpret it.
In-depth	Comprehensive, thorough or detailed.
Explain	Make (an idea or situation) clear to someone by describing it in more detail, giving instruction or stating facts.
Credible	Able to be believed; convincing.
Complex	Complex carbohydrates (also known as starch) are formed of long chains of sugars joined together. They are found in foods like bread, rice, pasta and potatoes.

Need to Know Dictionary: Creative iMedia

Word	Definition
Interactive	A computer or application that responds to the user's input, two way communication between human and device.
Multimedia	Multimedia applications combine elements like text, images, audio and video and require specific considerations in their design.
Digital content	Digital content is any content that exists in the form of digital data. Also known as digital media, digital content is stored on digital or analog storage in specific formats.
Client brief	The client brief, written by a client, explains the ins and outs of a project to the agency who'll be working on it.
Target audience	A particular group at which a product such as a film or advertisement is aimed.
User control	A control created by a developer, usually by combining other controls, often intended for use in a specific application.
Navigation methods	How a user interacts with a site. Navigation can be structured in two types of structure: linear and hierarchical.
Editing	The process of selecting and preparing written, photographic, visual, audible, or cinematic material used by a person or an entity to convey a message or information.
Planning	Preparing and organising your ideas and intentions.
Assets	A media asset is any piece of visual data that is owned or can be controlled to produce something of value. These can come in a few different forms such as: Video Files. Audio Files. Graphics.

Need to Know Dictionary: Health and Social Care

Word	Definition
Service user	This describes anyone who is a patient or user of services.
Consultation	A meeting with an expert, such as a medical doctor, in order to seek advice.
Need to know	If you tell people something on a need-to-know basis, you only tell them the facts they need to know at the time they need to know them, and nothing more.
Values	Values are the beliefs and views that people hold about what is right or wrong. They apply to all aspects of life and influence how a person behaves in different situations.
Rights	For example: - the right to be respected, treated with equality, and fairly, respected as an individual and not discriminated against, privacy, dignity, protection from danger and harm; right to access information relevant to themselves; right to communicate using their preferred methods of communication etc.
Beliefs	A belief is an attitude that something is the case. A belief might be important to an individual and their understanding of the world around them.
Equality	Everyone being treated the same.
Diversity	Recognising people's differences and embracing them.
Discrimination	People who are unfairly treated differently because of their age, race, gender etc.
Confidentiality	Conversations and information that is kept private from people who do not need to know.

Need to Know Dictionary: Business Studies

Word	Definition
Customer profile	Customer profiles are 'customer types', which are generated to represent the typical users of a product or service, and are used to help the project team make customer centred decisions without confusing the scope of the project with personal opinion.
Market segmentation	The process of splitting a business' target market into different groups. Businesses use these groups to make it easier for them to develop products aimed at certain people and to help them target their marketing. Small businesses generally split up their target market based on location, demographics, behaviour, lifestyle, income and age.
Market research	Market research collects information that might help a business to be more successful and spot gaps in the market.
Primary research	Primary market research, also known as field research, is new research that a business undertakes itself. It involves collecting new data and information that has not been collected before. Primary research provides a business with customised research that is specific to its own circumstances. It often uses the business' own customers to find out information.
Secondary research	Also known as desk research, this involves gathering existing data that has already been produced. Secondary research can be collected from both inside (internal) and outside (external) a business.
Quantitative data	●is usually numerical data ●is gathered through the use of closed questions, such as 'yes' or 'no' responses, multiple-choice options or a rating system ●can generally be expressed in a graph or chart It has the benefit of being simple and quick to analyse. It can also be analysed in a way that gives easy-to-understand results. However, quantitative data lacks specific opinions and doesn't always allow a business to see exactly what its customers think.
Qualitative	●is usually expressed as opinions ●includes descriptive information ●is gained using open-ended questions, eg 'What do you like about the product and why?' It provides a business with detailed information that cannot be expressed in a graph or chart. While qualitative data gives detailed information, it can be time consuming and costly to gather and analyse.
Sampling	Sampling is the process of creating a small unbiased population to be used in a test or experiment. The sample removes the impractical idea of surveying everyone in a market or a population.
Niche market	A small section of the market with clearly identifiable needs, but with little competition and therefore high prices can usually be charged.
Justify	Questions that ask you to 'justify' go a step beyond analyse and discuss. They often ask respondents to consider either one or two options and then recommend a course of action for a business to take.

Need to Know Dictionary: Child Development

Word	Definition
Antenatal	Before birth; during or relating to pregnancy.
APGAR Score	A measure of the physical condition of a new-born infant. It is obtained by adding points (2, 1, or 0) for heart rate, respiratory effort, muscle tone, response to stimulation, and skin coloration; a score of ten represents the best possible condition.
Immunity	If you have a high enough antibody level to protect you against a particular infection, you are immune.
Incubator	an enclosed apparatus in which premature or unusually small babies are placed and which provides a controlled and protective environment for their care.
Miscarriage	The spontaneous or unplanned expulsion of a foetus from the womb before it is able to survive independently.
Obstetrician	A doctor with special training in how to care for pregnant women and help in the birth of babies
Ovulation	The release of an egg from an ovary during the menstrual cycle.
Paediatrician	A medical practitioner who specialises in the branch of medical science concerned with children and their diseases.
Pre-eclampsia	Preeclampsia is a pregnancy complication characterised by high blood pressure and signs of damage to another organ system, most often the liver and kidneys. Preeclampsia usually begins after 20 weeks of pregnancy in women whose blood pressure had been normal.
Post-natal	The period of time immediately after childbirth.