Buckler's Mead Academy

Knowledge Organiser
Year 11
Term 3—Spring 2023

Learning Cycle 2

"In a time of turbulence and change, it is more true than ever that knowledge is power"

John F Kennedy

Inspiring Education for All

Name:

Tutor:

Ready, Responsible, Respect

Your Knowledge Organiser

Learning Cycle 2

Contents

Ambition

Success

Enjoyment

"Inspiring Education for All"

Opportunity

Community
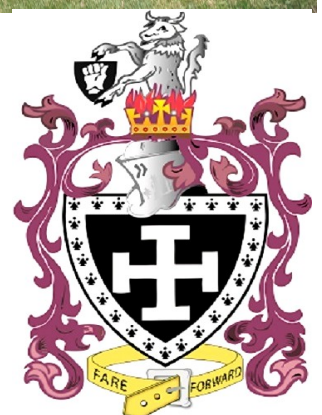
How to Use Your Knowledge Organiser

Self –Quizzing

Your Knowledge Organiser contains all of the key information you need to know for each subject area.

Your Knowledge Organiser will allow you to revise this key information and make sure it is stored in your long-term memory

The best way to use this resource is by self-quizzing.

"look, cover, write and check"

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Look, Cover, <u>Write</u>, Check, Correct

First look through and read the information on a section of your knowledge organiser
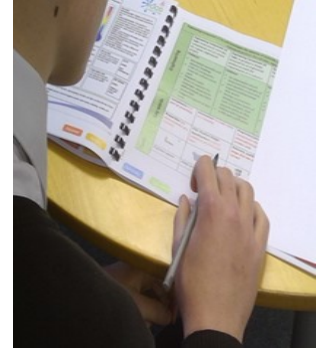
Then Cover the section so you can no longer see the information

Next Try and **write out** the key definitions or facts that you need to know

Now uncover the section of your Knowledge Organiser and check how correct you were

Finally Correct anything that you wrote down that was incorrect

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4

Art – Urban

Term	Definition
Urban	Characteristic of a town or city
Urban Art	Urban art combines street art and graffiti and is often used to summarize all visual art forms arising in urban areas, being inspired by urban architecture or present urban lifestyle
Texture	Texture means how something feels. There are two types of texture: actual texture and visual texture
Form	Form refers to objects that are 3-Dimensional, or have length, width, and height
Pattern	A pattern is a design in which lines, shapes, forms or colours are repeated. The part that is repeated is called a motif
Visual Elements	line, shape, colour, tone, form, texture and pattern
Foreground and background	Which elements appear close up or further away
Print making	Printmaking is an artistic process based on the principle of transferring images from a material onto another surface, most often paper or fabric. Traditional printmaking techniques include woodcut, etching, engraving, and lithography
Watercolour.	Watercolour comes in metal tubes or as dry tablets that need to be mixed with water. It also comes in a liquid form that is commonly used for airbrushing
Ink	While ink can be used with a pen to create drawings, it can also be used in a similar way to watercolour. Used on its own, ink gives a rich, glossy result. When mixed with water it becomes transparent and can create subtle variation of tone and colour
Acrylic	Acrylic paint is well-suited for detail, but it is easy to use. Depending on the technique used by the artist, acrylic can produce results that are like oil or watercolour
Pastels	Pastels usually come in the form of sticks that consist of pure powdered pigment and a binder. An artwork made using pastels is called a pastel, a pastel painting or a pastel drawing

Art

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Success

Enjoyment

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Opportunity

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Photography – Sense of Place

Term	Definition
White Balance	Using the right white balance setting will make what is white in real life actually appears white in the photo. A range of white balance settings can be used to change to overall colour of the image
Aperture	Aperture is the opening through which light passes through the lens to enter the camera. Its size can be modified to control how much light reaches the sensor or negative film. The diameter of the aperture, also known as the F-stop, affects the exposure and depth of field
Sense of Place	A sense of place is essentially a visual signature. It is a mood or a feeling that we experience when we are in a particular place
Composition	Composition is where elements are positioned within a photo. It is considered one of the most important components of an image, as it allows the photographer to guide the viewer's eye across the image towards the main subject
AV Setting	Aperture priority, often abbreviated A or Av (for aperture value) on a camera mode dial, is a setting on some cameras that allows the user to set a specific aperture value (f-number)
Focus	When your eyes focus on an object that's close to you, the objects far away will appear blurry. The common photography term "focus" has the same meaning. Something that is in focus is sharp, while an object that is out-of-focus isn't sharp
Depth of Field	Depth of field (DOF) is the distance between the nearest and the farthest objects that are in acceptably sharp focus in an image
Shutterspeed	Shutter speed is the length of time a camera sensor is exposed to light when taking a photo. Slow shutter speeds capture the blur of subjects in motion, making it highly valuable for night and landscape photographers. On the other hand high speeds allow photographers to freeze a single millisecond in time, which is usually an absolute must in fields such as sport
TV Setting	In TV mode the user specifies a shutter speed, while the camera adjusts the aperture size to correctly expose the image. This mode is typically used to freeze high speed action with a fast shutter speed, or intentionally create some sense of movement and blur in an image, ie, by using a slow shutter speed.
Bokeh	Bokeh is the orbs created when lights are out of focus in an image. It's a neat effect to have in the background of a photo, created through wide apertures
SLR	A single lens reflex camera has a single lens that forms an image which is reflected to the viewfinder. Digital single lens reflex cameras or DSLR cameras are the most versatile of the digital cameras

Photography

Computational Thinking

1) What is Computational Thinking? – Is a way of solving complex problems that are difficult to understand

- Creation of Algorithms to solve a problem.
- Breaking the problem down into small chunks that can be rebuilt later
- Looking for patterns in these smaller chunks. Have we solved anything before?
- Focus only on the important detail

2) Decomposition

Yeovil News:

Armed Robbery at Town jewellery store

To break down the problem (decompose it) the police would think about:

- what crime was committed
- when the crime was committed
- where the crime was committed
- what evidence there is
- if there were any witnesses
- if there have recently been any similar crimes

3) Pattern Recognition

Finding patterns makes it easier to solve problems. A pattern occurs when two or more things have something in common.

Think:

Which of the following contains a pattern and why?

- Buckler's Mead is a school
- Buckler's Mead and Preston are schools

4) Abstraction

In computing, abstraction involves taking a complex problem and removing all of the specific detail to try and make the problem a little simpler to understand.

For example, when trying to describe a cat in general terms, you don't need to know exactly how big it is or what colour its fur is.

5) Flowcharts

Flowcharts help us to create an Algorithm in a pictorial way that should be easy to follow.

For Example
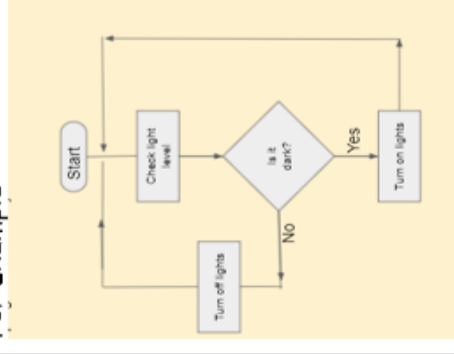
Symbols:

Symbol	Meaning
	Stop / Start
	Process
	Decision
	Flow of Information

KEY WORDS:

Abstraction – Taking away unnecessary parts of a problem

Decomposition – Breaking down a problem into smaller chunks

Pattern Recognition – When two or more things have something in common

Algorithms – a process or set of rules to be followed in calculations or other problem-solving operations

Business

Computing

Project Life Cycle	Initiation, Planning, Execution, Evaluation
SMART Targets	Specific, Measurable, Achievable, Relevant, Timed
Planning Tools	GANTT Charts, PERT (Project Evaluation and Review Technique), Critical Path, Flowcharts, Mind map.
Risk Mitigation	A strategy to prepare for and reduce the risk of threats.
Feasibility	How practical/realistic a project is.
Interaction/Iteration	Each phase of the Project Life cycle interacts with the phases before and after.

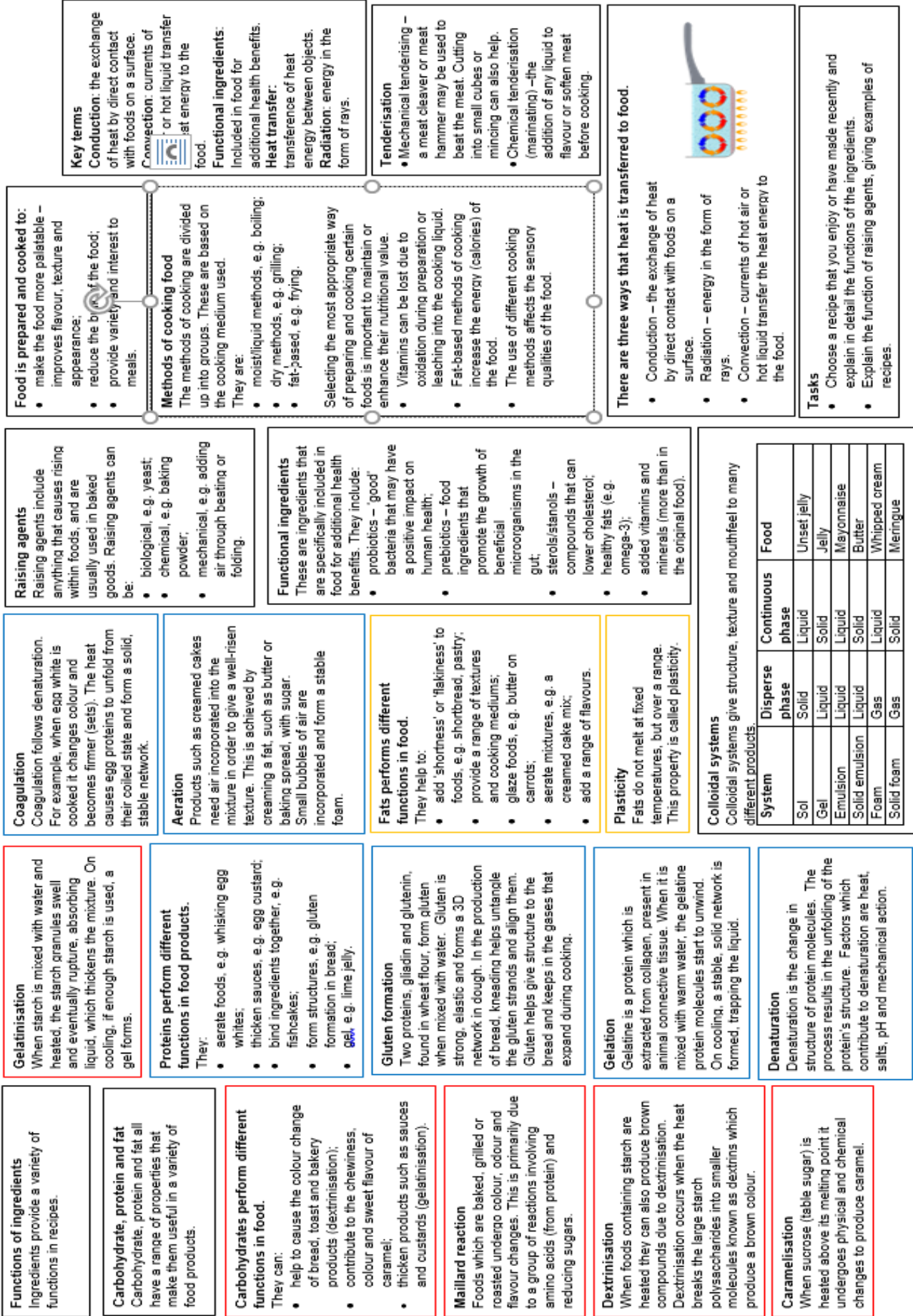| Data	raw facts and figures before they have been processed.
Data types	Text, alphanumeric, integer, real, currency, percentage, fraction, decimal, date/time, limited choice, object, logical/Boolean.
Information	The end result of data being processed.
Data collection methods	questionnaires/surveys, email, sensors, interviews, consumer panels.
IT methods of data collection	Barcode readers, QR codes, web based surveys, wearable technology, and mobile technology.
Storage methods	The cloud (virtual), hard disk drive, solid state drive, optical, flash memory device (all physical).
Big data	Large amounts of data collected and processed.

Types of threats	Malware (adware, bot, virus, worm, spyware); Social engineering (phishing, pretexting, baiting); Hacking, DDOS (distributed denial of service)
Vulnerability	A weakness that allows a person to launch a cyber-security attack (environmental, physical, system).
Impacts of cyber-security attack	Identity theft, data destruction, data manipulation, data modification, data theft.
IT legislation	Data Protection 1998; Copyright, design and patents act 1988; Computer Misuse Act 1990; Freedom of information act 2000.
Primary data	data collected directly through surveys/questionnaires
Secondary data	Collected from secondary sources such as journals/magazines.

Processing data	Two main tools for this: spreadsheets and database software.
Spreadsheets	Formulas, functions, worksheets.
Databases	Tables, records, queries, validation.
Presenting data	Word processing, desktop publishing, PowerPoint presentation.
Considerations of presenting data	Target audience, content limitations, availability of information.
Distribution Channel	Messaging services, websites, and Multimedia Cloud and Mobile apps.
Presentation Methods/Resources	report, presentation, charts, tables, hardware, software, connectivity

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Success

Enjoyment

Opportunity

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DT - Textiles

Keyword	Definition
Applique	The technique where one fabric is layered or applied on-top of another and secured in place by hand or machine stitching.
Batik	The application of hot wax onto cloth to create a pattern or design. When dye is applied the waxed area resists the colour. Once dry, successive applications of wax and dye can be applied in layers to create intricate patterns. The process can often be found on textiles from Indonesia and India.
Collograph	A method of direct printing in which materials such as string, cardboard, and other found materials are stuck to card or board to enable prints can be taken.
Couching	The process used to secure threads, fibres or yarns to a surface using hand stitching or embroidery.
Free-machining	Machine stitching where the foot has been removed and the fabric is moved in a variety of directions as stitching takes place. This technique is also known as scribble stitching.
Patchwork	A textile constructed by sewing together small pieces of fabric. The design is often in a geometric composition.
Resist techniques	The application of hot wax, gutta, salt or starch paste to a fabric to prevent the absorption of dye.
Screenprint	A technique of printing in which each coloured ink is squeezed through a stencil held on a mesh screen.
Stencil	A shape or image cut out of paper or card to create a space through which dye can be applied.

Year 11 Food science

DT—Food and Nutrition

Functions of ingredients
Ingredients provide a variety of functions in recipes.

Carbohydrate, protein and fat
Carbohydrate, protein and fat all have a range of properties that make them useful in a variety of food products.

Carbohydrates perform different functions in food.
They can:
- help to cause the colour change of bread, toast and bakery products (dextrinisation);
- contribute to the chewiness, colour and sweet flavour of caramel;
- thicken products such as sauces and custards (gelatinisation).

Maillard reaction
Foods which are baked, grilled or roasted undergo colour, odour and flavour changes. This is primarily due to a group of reactions involving amino acids (from protein) and reducing sugars.

Dextrinisation
When foods containing starch are heated they can also produce brown compounds due to dextrinisation. Dextrinisation occurs when the heat breaks the large starch polysaccharides into smaller molecules known as dextrins which produce a brown colour.

Caramelisation
When sucrose (table sugar) is heated above its melting point it undergoes physical and chemical changes to produce caramel.

Gelatinisation
When starch is mixed with water and heated, the starch granules swell and eventually rupture, absorbing liquid, which thickens the mixture. On cooling, if enough starch is used, a gel forms.

Proteins perform different functions in food products.
They:
- aerate foods, e.g. whisking egg whites;
- thicken sauces, e.g. egg custard; fishcakes;
- bind ingredients together, e.g. fishcakes;
- form structures, e.g. gluten formation in bread;
- gel, e.g. lime jelly.

Gluten formation
Two proteins, gliadin and glutenin, found in wheat flour, form gluten when mixed with water. Gluten is strong, elastic and forms a 3D network in dough. In the production of bread, kneading helps untangle the gluten strands and align them. Gluten helps give structure to the bread and keeps in the gases that expand during cooking.

Gelation
Gelatine is a protein which is extracted from collagen, present in animal connective tissue. When it is mixed with warm water, the gelatine protein molecules start to unwind. On cooling, a stable, solid network is formed, trapping the liquid.

Denaturation
Denaturation is the change in structure of protein molecules. The process results in the unfolding of the protein's structure. Factors which contribute to denaturation are heat, salts, pH and mechanical action.

Coagulation
Coagulation follows denaturation. For example, when egg white is cooked it changes colour and becomes firmer (sets). The heat causes egg proteins to unfold from their coiled state and form a solid, stable network.

Aeration
Products such as creamed cakes need air incorporated into the mixture in order to give a well-risen texture. This is achieved by creaming a fat, such as butter or baking spread, with sugar. Small bubbles of air are incorporated and form a stable foam.

Fats performs different functions in food.
They help to:
- add 'shortness' or 'flakiness' to foods, e.g. shortbread, pastry;
- provide a range of textures and cooking mediums;
- glaze foods, e.g. butter on carrots;
- aerate mixtures, e.g. a creamed cake mix;
- add a range of flavours.

Plasticity
Fats do not melt at fixed temperatures, but over a range. This property is called plasticity.

Raising agents
Raising agents include anything that causes rising within foods, and are usually used in baked goods. Raising agents can be:
- biological, e.g. yeast;
- chemical, e.g. baking powder;
- mechanical, e.g. adding air through beating or folding.

Functional ingredients
These are ingredients that are specifically included in food for additional health benefits. They include:
- probiotics – 'good' bacteria that may have a positive impact on human health;
- prebiotics – food ingredients that promote the growth of beneficial microorganisms in the gut;
- sterols/stanols – compounds that can lower cholesterol;
- healthy fats (e.g. omega-3);
- added vitamins and minerals (more than in the original food).

Colloidal systems
Colloidal systems give structure, texture and mouthfeel to many different products.

System	Disperse phase	Continuous phase	Food
Sol	Solid	Liquid	Unset jelly
Gel	Liquid	Solid	Jelly
Emulsion	Liquid	Liquid	Mayonnaise
Solid emulsion	Liquid	Solid	Butter
Foam	Gas	Liquid	Whipped cream
Solid foam	Gas	Solid	Meringue

Food is prepared and cooked to:
- make the food more palatable – improves flavour, texture and appearance;
- reduce the bulk of the food;
- provide variety and interest to meals.

Methods of cooking food
The methods of cooking are divided up into groups. These are based on the cooking medium used. They are:
- moist/liquid methods, e.g. boiling;
- dry methods, e.g. grilling;
- fat-based, e.g. frying.

Selecting the most appropriate way of preparing and cooking certain foods is important to maintain or enhance their nutritional value.
- Vitamins can be lost due to oxidation during preparation or leaching into the cooking liquid.
- Fat-based methods of cooking increase the energy (calories) of the food.
- The use of different cooking methods affects the sensory qualities of the food.

There are three ways that heat is transferred to food.
- Conduction – the exchange of heat by direct contact with foods on a surface.
- Radiation – energy in the form of rays.
- Convection – currents of hot air or hot liquid transfer the heat energy to the food.

Tenderisation
- Mechanical tenderising – a meat cleaver or meat hammer may be used to beat the meat. Cutting into small cubes or mincing can also help.
- Chemical tenderisation (marinating) – the addition of any liquid to flavour or soften meat before cooking.

Key terms
Conduction: the exchange of heat by direct contact with foods on a surface.
Convection: currents of hot or hot liquid transfer heat energy to the food.
Functional ingredients: Included in food for additional health benefits.
Heat transfer: transference of heat energy between objects.
Radiation: energy in the form of rays.

Tasks
- Choose a recipe that you enjoy or have made recently and explain in detail the functions of the ingredients.
- Explain the function of raising agents, giving examples of recipes.

Key concepts, skills, questions or processes

What will I learn?	You will develop your understanding of the performing arts by examining practitioners' work and the processes used to create performance.
What is a practitioner?	A practitioner is an individual or company who has a distinct style of performance, e.g. Brecht (Epic theatre), Stanislavski (Naturalism), Kneehigh, Frantic Assembly (Physical Theatre), 1927, Artaud (Theatre of Cruelty), Boal (Theatre of the Oppressed), Berkoff, Lecoq.
How will I do this?	You will **watch** a range of performances by professional rep in a range of styles. You will investigate how they created the pieces, and what influenced them, stylistically and contextually. You will also **engage in workshops** (lessons) where you will try out these styles for yourselves, and explore how different roles within the companies are linked together – e.g. director and actor/ puppeteer, set designer and choreographer, etc. You will **keep a record** of everything you are learning along the way.
What is expected of me?	It is vital that you keep an ongoing record, using your rehearsal logs, of everything we do in lessons, writing analytically (WWW/EBI) rather than just recounting the events of the lesson. You need to become critics as well as participants, showing an understanding of the processes behind the performance. You will have a number of assignments to submit, both practical and online/ written. You MUST keep on top of these assignments, as they all count towards your final grade.
What is an Assignment Brief?	This document explains exactly what you are expected to do, and how you will evidence it. The brief will also contain all your deadlines for submitting work. It details all the success criteria, so you should look at it often to ensure you are on track.

Key Vocabulary	Definitions & Explanations	Examples
Creative Intentions	What was the director/ writer/ creator thinking about? Themes / issues / response to stimulus / style/genre / contextual influences / collaboration with other practitioners / influences by other practitioners.	*FUP – look at your creative intentions sheet – have you been able to complete all the boxes?*
Purpose	Why was it made? to educate / to inform / to entertain to provoke/ to challenge viewpoints / to raise awareness / to celebrate...	*This is not a complete list – what other purposes can you think of?*
Practitioners' roles, responsibilities and skills	**Performance roles e.g., actor / dancer / singer/ puppeteer, etc & Non-performance roles e.g:** choreographer /set designer / director / writer etc. *Responsibilities: rehearsing /performing /contributing to the creation and development of performance material, e.g., devising, designing, choreographing, directing, writing / refining performance material / managing self and others.* **Skills: physical, vocal and music skills, managing and directing skills, communication skills used to liaise, direct and perform, creative skills, such as designing set, costume, lighting or sound, writing scripts and composing songs, organisational skills used to put on a performance by a director or choreographer.**	*You will be expected to research several roles within the Performing Arts business, and explore how they work with each other to create a piece, e.g. How does the musical director of Kneehigh work with the director/ writer/ actors when creating a piece like FUP? Music is integral to the piece – look at how their creative process unfolds – it's all on the website. How do roles differ, depending on the company and the performance piece itself?*
Processes used in development, rehearsal and performance	Responding to stimulus to generate ideas for performance material / exploring and developing ideas to develop material / discussion with performers / setting tasks for performers / sharing ideas and intentions / teaching material to performers / developing performance material / organising and running rehearsals / refining and adjusting material to make improvements / providing notes and/or feedback on improvements.	*What does a good rehearsal look like? Can you use your rehearsal time productively? How do you do this? Do you assign roles? Do you keep track of decisions made? Are you asking other people to feedback their opinions?*

Drama

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11

Key Terminology & Definitions

Abstract Noun	An abstract noun is a concept, idea, belief or emotion. It is not tangible. (You cannot experience it with your five senses.)
Concrete Noun	A noun is a person, place or thing. A concrete noun is something tangible that you can experience with one of your five senses.
Proper Noun	A name or place. All proper nouns must begin with a capital letter.
Adjective	A describing word
Verb	An action or doing word
Nomenclature	The deliberate allocation of a name to a person or thing.
Simile	When something is described by saying it is similar to something else.
Metaphor	When something is described as being something else to highlight the similarities
Personification	When a human quality is given to an inanimate object
Semantic Field	A set of words grouped together that relate to a specific subject
Pronoun	Words that refer to the participants in a discourse (ex, I, you, he, she, they)
Adverb	A word that describes how a verb is being performed
Narrative	An account of events, a story
Description	An account of a person, object or event
Method	A procedure used to achieve something. We refer to writers' methods and their achievements.
Genre	A style/category of art (including literature)
Reader Response	How the reader feels, what they understand or have learned after reading a text
Archetype	A stereotypical example of something
Dialogue	Written speech by characters
Mood/Tone/ Atmosphere	The feeling that a text carries or creates in a reader
Symbol	Something that stands for or represents an abstract concept
Flashback/ flashforward	A jump back or forward in time
Cyclical structure	When a story ends where it began, usually to emphasise whether anything has changed or not
Shift	When the writer changes your attention and focusses it on something else
Linear	The story starts at a certain time and moves forwards logically.
Non linear	The story jumps through time regularly, or there is no concept of time

English

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Key Terminology & Definitions

Imperative	An imperative verb can be used to give instructions. It can work on its own, for example: Stop! Go! It comes from the infinite form of the verb. They can be in first person or third person.
Active voice	This is where the subject of the sentence is also the agent (the thing doing the verb) ex: John's dad fixed the car.
Passive voice	This is where the agent (the thing doing the verb) appears after the verb. For example: My car is being repaired by John's dad.
Main clause	A group of words with a subject, object and verb. All sentences must contain a main clause
Simple sentence	A sentence made up of a main clause and nothing else
Subject	The part of a sentence that contains the person/thing doing the verb
Object	The thing or person involved in the verb
Verb	A doing word
Noun	A person, place or thing. Nouns are either concrete or abstract.
Adjective	A describing word
Comparative discourse markers	Words that introduce a comparison: however, whilst, similarly, whereas etc.
Symbols	Something that stands for or represents an abstract concept
Emotive vocabulary	Words that cause a strong emotional reaction in a reader
Repetition	Repeated words, phrases or sentence structures
Anecdote	A short personal story
Metaphor	A description of something by saying it is something else
Semantic field	A set of words grouped together that relate to a specific subject
Overview	A statement that explains an opinion without using the word agree/disagree
Topic sentence	A sentence at the start of a paragraph that indicates what the paragraph will be about
Compound sentence	Two simple sentences joined with a conjunction
Subordinate clauses	Extra information contained within two commas that need the rest of a main clause to make sense
Anaphora	is the repetition of a word or a phrase at the beginning of successive clauses or sentences.
Conjunction	Words used to connect clauses: and, but, yet, though, if etc.
Pronouns	A word that refers to the participants in the discourse
Statistics	Numerical data

Spellings (the most commonly misspelt words on language P2)
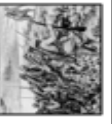
Disgust, beginning, specific, precise, apprehensive, definitely, necessary, disappear, disappoint, appearance, completely, a lot, happened, received, really, tomorrow, weird, tired, normal, interrupt, exaggerate, braking, satisfied, decided, probably, interested, relief, possibly, his/he's, says

English

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Success

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History

Events

Event	Image	Description	Date/s	Fact
Entangling Alliances		In the early 20th Century, there was no one dominating European country. Consequently, each of the most powerful countries moved to make alliances with one another. Military defensive pacts were held between the allied powers of France, Great Britain, Russia and others, whilst an opposing central alliance was formed including Germany and Austria-Hungary.	1879-1914	Defensive pacts stated that participating countries must aid an ally under attack.
Assassination of Archduke Franz Ferdinand		Archduke Franz Ferdinand, the heir to the Austro-Hungarian throne, and his wife Sophie, were assassinated by Gavrilo Princip, a member of the Serbian Black Hand Society. The aim of the assassination was to make the South Slav provinces a part of Yugoslavia.	28th June 1914	Earlier, another assassination attempt against the Archduke had failed.
July Crisis		After Serbia's failure to make amends for the assassination, Austria-Hungary declared war on them. Russia (in pact with Serbia) declares war on Austria-Hungary, before Germany consequently declares war on Russia. By the 4th August, all of the European powers from the Allied and Central Powers are at war.	July-August 1914	Britain were the last of the powers to declare war, on 4th August 1914.
Trench Warfare		To prevent enemy advances, both sides built large trenches, which stretched from the North Sea, through Belgium and France. As a result, neither side made much ground from late 1914 until early 1918. Attacks involved going across No Man's Land (in the middle) where attackers were open to machine gun fire, mines, and shells. Casualties were huge. Life in the trenches were awful, with diseases like trench foot rife. Mustard gas was a war agent used, causing blisters on skin and lungs. It caused excruciating pain and often death.	From September 1914 until November 1918 (the end of the war).	The enemy trenches were generally 50 to 250 metres apart. In between, No Man's Land was littered with barbed wire, mines, and bodies.
Gallipoli Campaign		The Gallipoli campaign was an unsuccessful attempt by the Allies to control the sea route from Europe to Russia. It included a failed naval attack in February 1915, and a major land invasion on 25th April, which resulted in major losses to the Ottoman Empire.	19th February 1915 – 9th January 1916	The Allies eventually evacuated in Dec 1915/ Jan 1916.
Battle of the Somme		The Battle of the Somme was the largest battle of World War I on the Western Front. More than 3 million fought in the battle, with more than 1 million killed or injured. At the end of the battle, the Allies had advanced 6km.	1st July 1916 – 18th November 1916	The battle is known for being the first use of the tank.
America Declares War		President Woodrow Wilson declared war on Germany, citing Germany's violation of its pledge to suspend unrestricted German warfare in the Northern Atlantic and Mediterranean. This had caused sinking of US ships.	6th April 1917	The arrival of fresh US troops helped to turn the war.
Second Battle of Marne		The Second Battle of Marne was the last major German offensive in the war. They were defeated as the Allies counter-attacked. This triggered the start of the Allied advanced which led to the Armistice 100 days later.	15th July – 6th August 1918	There were 168,000 German casualties.
Armistice of 11th November		The Armistice of the 11th November 1918 signalled the end of the fighting between the Allies and Germany. Previous armistices had already been agreed with the other central powers. It came into force at 11am. It marked a victory for the Allies and defeat for Germany although was not officially a German surrender.	11th November 1918	The fighting ended on the 11th hour of the 11th day of the 11th month in 1918.
The Treaty of Versailles		The Treaty of Versailles was the most important of the peace treaties bringing to an end World War I, ending conflict between Germany and the Allied Powers. It was signed in Versailles, but mostly negotiated in Paris. The most contentious of the requirements in the peace treaty was that Germany had to accept responsibility for all of the loss and damage in the war. They had to make massive repayments to other countries.	28th June 1919	Many suggest that the treaty was too harsh on Germany, and created tension which partially escalated World War II.

Allied Powers

Country	Date Joined	Death Toll
FRANCE	3rd Aug, 1914	approx. 1,700,000 4.3% of population in 1914
BRITISH EMPIRE	4th Aug, 1914	approx. 900,000 2% of population in 1914
RUSSIA	1st Aug, 1914	approx. 3,100,000 13.7% of population in 1914
USA	6th Apr, 1917	117,466 0.13% of population in 1914

Central Powers

Country	Date Joined	Death Toll
GERMAN EMPIRE	1st Aug, 1914	approx. 2,500,000 4% of population in 1914
AUSTRIA-HUNGARY	28th Jul, 1914	approx. 1,900,000 3.7% of population in 1914
OTTOMAN EMPIRE	31st Oct, 1914	approx. 3,000,000 14% of population in 1914
BULGARIA	12th Oct, 1915	187,500 3.4% of population in 1914

Key People

Archduke Franz Ferdinand – (1863-1914) was a high-ranking member of the Habsburg Dynasty, who was the presumed heir to the Austro-Hungarian throne. As was customary of Habsburg men, he had begun his military career young (aged just 12). He rose through the ranks quickly, becoming inspector general of the armed forces in 1913. This role brought him to Sarajevo in 1914, where he was assassinated alongside his wife, Sophie. The perpetrator was Gavrilo Princip, a member of the Serbian Black Hand secret society. Austria-Hungary's subsequent declaration of war on Serbia prompted a chain of events that led to World War I.

Woodrow Wilson – (1856-1924) was the 28th President of the United States, serving between 1913 and 1921. At the outbreak of World War I, the US was neutral, but remained an important supplier to Great Britain and the Allies. However, after 2 ½ years of war, America declared war on Germany on 6th April 1917, after Germany continued to attack neutral boats and ships. In early 1918, Wilson gave his outline of 14 points that he thought would bring lasting peace. This influenced the eventual Treaty of Versailles. He received the 1919 Nobel Peace Prize for his efforts.

Tsar Nicholas II – (1868-1918) was the last Emperor of Russia, ruling from 1894 until his forced abdication on 2nd March 1917. Throughout his reign, Russia fell from being one of the foremost great powers of the world, to economic and military collapse. These factors, coupled with the perception of Nicholas' weak leadership, led to the events of the Russian Revolution. Nicholas' abdication, and his eventual execution. The Russians' catastrophic losses forced them to leave the war effort before the end of the war, with Russia eventually becoming a part of the communist Soviet Union.

Kaiser Wilhelm II – (1859-1941) was the last German Emperor (Kaiser), reigning between 15th June 1888 until 9th November 1918. Wilhelm was a grandchild of Queen Victoria, and was related to many of the monarchs of Europe, including George V of the UK and Nicholas II of Russia. His support for Austria-Hungary in the crisis of July 1914 was a leading factor in the outbreak of World War I. Many sources suggest that he was not respected as a leader, and as a result, his two leading generals Paul von Hindenburg and Erich Ludendorff dictated most of German policy and strategy during the war. He abdicated in 1918, and fled to the Netherlands.

David Lloyd George – (1863-1945) was the Prime Minister of the United Kingdom throughout the latter part of the war effort, and in the years following the war. He was integral to reorganising the Allied military strategy to work more cohesively under one military commander. Lloyd George also played an important role after the war, being one of the 'Big Three' (alongside the leaders of France and the US) to negotiate the Treaty of Versailles with Germany. He represented the halfway point between the harsh demands of Clemenceau and the more lenient requests of Wilson.

Wilfred Owen – (1893-1918) Wilfred Edward Salter Owen was a British poet and soldier. He was one of the most prominent World War I poets, detailing the horrors of trench warfare in a similar style to his mentor: Siegfried Sassoon. His poetry brought a sense of realism to public perceptions of war, in stark contrast to the earlier works of poets such as Rupert Brooke. He composed almost all of his poetry in just over a year, from August 1917 to September 1918. Among the most famous are *Dulce et Decorum est* and *Anthem for Doomed Youth*. He was killed one week before the end of the war.

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14

Maths

MyMaths.co.uk

My Login:

Password:

MathsWatch

My Login:

Password:

dfm drfrostmaths.com

My Login:

Password:

www.bbc.co.uk/bitesize

www.khanacademy.org

https://corbettmaths.com

<- KEY WORDS DICTIONARY

Maths Equipment you must have every lesson:
Pen, pencil, rubber, ruler, prortractor, compasses, scientific calculator

Areas

Rectangle = $l \times w$

Parallelogram = $b \times h$

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

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

Volumes

Cuboid = $l \times w \times h$

Prism = area of cross section $\times$ length

Cylinder = $\pi r^2 h$

Volume of pyramid = $\frac{1}{3} \times$ area of base $\times h$

Circles

Circumference = $\pi \times$ diameter, $C = \pi d$

Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$

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

Compound measures

Speed

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

Density

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

Pressure
The formula for pressure does not need to be learnt, and will be given within the relevant examination questions.

Pythagoras

Pythagoras' Theorem

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

Trigonometric ratios (new to F)

$\sin x° = \dfrac{opp}{hyp}$, $\cos x° = \dfrac{adj}{hyp}$, $\tan x° = \dfrac{opp}{adj}$

Trigonometric formulae

Sine Rule $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle = $\frac{1}{2} ab \sin C$

Higher tier formulae

Foundation tier formulae

Quadratic equations

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$, where $a \neq 0$, are given by $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

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MFL - French

Vocabulary

French	English
L'argent	money
L'association caritative	charity organisation
Un besoin	a need
Au chômage	unemployed
La charité	charity
La crise	the crisis
Défavorisé	disadvantaged
La dette	debt
Le droit	the right
La discrimination	discrimination
L'eau potable	drinking water
L'emploi	the job
La faim	hunger
La famine	famine
Le gouvernement	the government
Grave	serious
Une grève	a strike
La guerre	war
L'hébergement	accommodation
L'immigré	immigrant
Impossible	impossible
L'inégalité	inequality
La manifestation	demonstration
Le monde	the world
Mondial	global
La nourriture	food
Pauvre	poor
La pauvreté	poverty
Les personnes défavorisées	disadvantaged people
Un problème mondial	a world problem
Le racisme	racism
Le réfugié	the refugee
Les sans-abris	the homeless
Le sac de couchage	sleeping bag
La santé	health
SDF (Sans domicile fixe)	homeless people
La société	society
Le terrorisme	terrorism
Le travail bénévole	volunatry work
Les vêtements	clothes
Le volontaire	volunteer

Useful verbs 🎵

French	English
Accuellir	to welcome
Aider	to help
Améliorer	to improve
Augmenter	to increase
Avoir peur	to be frightened
Combattre	to fight against
Diminuer	to reduce
Donner	to give
Inclure	to include
S'inquiéter	to worry/be concerned
Lutter	to fight
Mourir	to die
Protéger	to protect
Réflechir	to think/reflect

Key points: ➊

Problems: Poverty
Homelessness
Famine

Reasons *for social problems*

Solutions
Opinions
What can you do to help?
Charities

useful Phrases 🔄

French	English
Ce qui m'inquiète	What worries me ....
...le plus	the most
...le moins	the least
Ce qui me fâche	What angers me
En faisant	by doing
En protégeant	by protecting
Il faut	We must
Il ne faut pas	We must not
J'ai l'intention de	I intend to...
Je me sens concerné par	I am concerned about...
À mon avis	in my opinion

Question Practice: 👍

BASIC : Quelle organisation caritative préfères-tu ? Je préfère L'Unicef. L'Unicef aide les enfants.

BETTER : Qu'est-ce qu'on peut faire pour aider les sans-abri ? *On peut vendre des gâteaux et avec l'argent on peut acheter des sacs de couchage et des sacs à dos.*

BEST : Quel est le problème social qui te concerne le plus ? *Les sans-abri me concernent le plus. Souvent ils n'ont pas de foyer/ de maison et ils sont au chômage. Si on n'a pas de travail on n'a pas beaucoup d'argent. C'est un cercle vicieux !*

Present Subjunctive: 💬

Some expressions that end in "que" are followed by the present subjunctive.

	Endings	Examples		Irregular subjunctives
To form the present subjunctive		Il faut que...e.g. il faut que vous aidiez		
Use 3rd person plural of present tense	e	Bien que – ...although...		Aller – j'aille
	es			Avoir – j'aie
e.g. "ils donnent". Take off "ent" and add endings	e	Afin que – ...in order that...		Être – je sois
	ions	Avant que – ...before...		Faire – je fasse
	iez	Vouloir que – to wish/want that...		
	ent	Préférer que – to prefer that...		
		Regretter que – to regret that...		
e.g.				
Je donne		Il est possible/impossible que – ...it is possible/impossible that...		
Je finisse				
Je vende				

MFL—German

Useful vocabulary

German	English
die Unterstützung	support
die Bevölkerung	population
das Trinkwasser	drinking water
die Kampagne	campaign
die Freiwilligenarbeit	voluntary work
die Wirtschaftskrise	economic crisis
Menschenrechte	human rights
die Dürre	drought
die Regierung	government
der Krieg	war
der Hunger	hunger
der Hungersnot	famine
die Immigration	immigration
die Wohltätigkeitsorganisation	charity
die Arbeitslosigkeit	unemployment
die Armut	poverty
Flüchtlinge	refugees
die Gesundheit	health
die Obdachlosigkeit	homelessness
die Lücke	gap
die Krankheit	disease

Useful verbs

German	English
unterstützen	to support
helfen	to help
geben	to give
Geld spenden	to donate money
verbessern	to improve
bekommen	to receive
lösen	to solve
fördern	to promote
überleben	to survive
vergessen	to forget
leben	to live

Modal verbs

When you use modal verbs to talk about the past, you normally use the imperfect tense.

German	English
Ich konnte	I could
Ich durfte	I was allowed to
Ich sollte	I was supposed to
Ich musste	I had to
Ich wollte	I wanted to
Ich wollte Kindern helfen	I wanted to help children

Useful connectives

German	English
jedoch	though
deswegen	therefore
obwohl	although
während	while/whilst
trotzdem	despite
dennoch	however/ nevertheless
auch	also

Questions and answers

Was sind die schlimmsten Sozialprobleme auf der Welt? Leider gibt es viele Sozialprobleme auf der Welt, zum Beispiel ... / Am schlimmsten finde ich ... , weil ...

Wie könnte man diese Probleme lösen? Die Regierung könnte/sollte ... helfen/ investieren/bauen/schaffen

Ist es wichtig, anderen Leuten zu helfen? Ja, natürlich. Persönlich finde ich es sehr wichtig, anderen Leuten zu helfen. Ich mache so viel wie möglich, zum Beispiel ...

Welche Wohltätigkeitsorganisation hilfst du gern? Meine Lieblingswohltätigkeitsorganisation heißt ... / Sie hilft Kindern/armen Leuten/Tieren

Was hast du letzte Woche gemacht, um anderen Leuten zu helfen? Letzte Woche habe ich Geld an armen Leuten gespendet

Was wirst du nächste Woche machen, um Geld zu sammeln? Ich werde Autos waschen/Kuchen backen/im Garten arbeiten

Gibt es ein Problem mit Armut in deinem Land? Ja, das Problem wird immer größer. Ich glaube, dass ...

Key phrases

German	English
Die Armut ist ein großes Problem.	Poverty is a big problem.
Leider gibt es keine schnelle Lösung	Unfortunately there isn't a quick solution.
Tausende Kinder haben nicht genug zu essen	Thousands of children don't have enough to eat.
Kinderarmut ist eine internationales Problem	Child poverty is an international problem.
Es ist nötig, Entwicklungsländern zu helfen	It's essential to help developing countries.
Die Wirtschaftskrise macht mir Sorgen	The economic crisis worries me.
Das Problem wird schlimmer werden	The problem will get worse.
Es ist sehr wichtig, die Menschenrechte zu schütze	It's very important to protect human rights.
Wir müssen zusammenarbeiten	We must work together.
In meiner Gegend gibt es nicht genug Arbeitsplätz	There aren't enough jobs in my area.
Meiner Meinung könnte die Regierung mehr machen	In my opinion the government could do more.

Music

Recording roles

1. Recording studio personnel	1. Engineer, assistant engineers, technical manager and tech support.
	2. Maintenance and installation of electrical equipment.
	3. Select and purchase equipment, order repairs, oversee mixing and mastering of recording.
2. Producer	1. Work with sound engineers, audio technicians and the artist.
	2. Enhance recordings by adding instruments to existing tracks.
	3. Oversee the overall production of a song.
3. Session musician	1. Perform given music as a soloist or in an ensemble. Provides own equipment.
5. Mastering engineer	1. The mastering engineer completes the audio mastering process for an album, making it sound finished.
	2. Delivery of the album to distributor/digital delivery through services such as iTunes.

Media and other roles

1. Music Journalist/Blogger	1. Write reviews about an artist's concert/album, attend shows and events, listen out for new talent, listen to CDs
2. Broadcaster (TV and radio)	1. Interview artists, select music for a show, present music show and discuss trends.
	2. Research, writing and editing.
3. Software Programmer/App Developer	1. Create apps and musical programmes: sequencing (Logic), notation (Sibelius), games (Piano Tiles)
4. Retailer	1. Sell music products in shops and online.
5. Distributer	1. Sign deals with record labels and move the music product from the manufacturer to the shop or online marketplace.
	2. Convince retailers to stock their client's album
	3. Build good relationships with retailers for future sales
6. Manufacturer	1. Master CD's of high quality
	2. Transport to distribution outlets
	3. Duplicate CDs
7. Music Journalist/Blogger	1. Write reviews about an artist's concert/album, attend shows and events, listen out for new talent, listen to CDs

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BTEC SPORT UNIT 1 – KNOWLEDGE ORGANISER
APPLYING THE PRINCIPLES OF PERSONAL RAINING

AEROBIC ENDURANCE	THE ABILITY OF THE CARDIORESPIRATORY SYSTEM TO WORK EFFICIENTLY, SUPPLYING NUTRIENTS AND OXYGEN TO WORKING MUSCLES DURING SUSTAINED PHYSICAL ACTIVITY.
MUSCULAR ENDURANCE	THE ABILITY OF THE MUSCULAR SYSTEM TO WORK EFFICIENTLY, WHERE A MUSCLE CAN CONTINUE CONTRACTING OVER A PERIOD OF TIME AGAINST A LIGHT TO MODERATE FIXED RESISTANCE LOAD.
FLEXIBILITY	HAVING ADEQUATE RANGE OF MOTION IN ALL JOINTS OF THE BODY; THE ABILITY TO MOVE A JOINT FLUIDLY THROUGH ITS COMPLETE RANGE OF MOVEMENT.
SPEED	DISTANCE DIVIDED BY THE TIME TAKEN. SPEED IS MEASURED IN METRES PER SECOND (M/S). THE FASTER AN ATHLETE RUNS OVER A GIVEN DISTANCE, THE GREATER THEIR SPEED.
MUSCULAR STRENGTH	THE MAXIMUM FORCE (IN KG OR N) THAT CAN BE GENERATED BY MUSCLE OR MUSCLE
BODY COMPOSITION	THE RELATIVE RATIO OF FAT MASS TO FAT-FREE MASS (VITAL ORGANS, MUSCLE, BONE) ON THE BODY.
AGILITY	THE ABILITY OF A SPORTS PERFORMER TO QUICKLY AND PRECISELY MOVE OR CHANGE DIRECTION WITHOUT LOSING BALANCE OR TIME.
BALANCE	THE ABILITY TO MAINTAIN CENTRE OF MASS OVER A BASE OF SUPPORT.
COORDINATION	THE SMOOTH FLOW OF MOVEMENT NEEDED TO RESPOND TO PERFORM TO A MOTOR TASK EFFICIENTLY AND ACCURATELY.
POWER	THE PRODUCT OF STRENGTH AND SPEED.
REACTION TIME	THE TIME TAKEN FOR A SPORTS PERFORMER TO RESPOND TO STIMULUS AND THE INITIATION OF THEIR RESPONSE.
FREQUENCY	THE NUMBER OF TRAINING SESSIONS COMPLETED OVER A PERIOD OF TIME.
INTENSITY	HOW HARD AN INDIVIDUAL WILL TRAIN.
TIME	HOW LONG AN INDIVIDUAL WILL TRAIN FOR
TYPE	HOW AN INDIVIDUAL WILL TRAIN BY SELECTING A TRAINING METHOD TO IMPROVE A SPECIFIC COMPONENT OF FITNESS AND/OR THEIR SPORTS PERFORMANCE
PROGRESSIVE OVERLOAD	IN ORDER TO PROGRESS, TRAINING NEEDS TO BE DEMANDING ENOUGH TO CAUSE THE BODY TO ADAPT, IMPROVING PERFORMANCE.
SPECIFICITY	TRAINING SHOULD BE SPECIFIC TO THE INDIVIDUAL'S SPORT, ACTIVITY OR PHYSICAL/SKILL-RELATED FITNESS GOALS TO BE DEVELOPED.
INDIVIDUAL DIFFERENCES/NEEDS	THE PROGRAMME SHOULD BE DESIGNED TO MEET INDIVIDUAL TRAINING GOALS AND NEEDS.

PE

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Science

Waves

Sound transfers energy. The vibration that make makes the sound makes the air molecules vibrate to and fro in the direction of motion of the sound wave. Sound waves have areas of high-pressure (compression. and low-pressure (rarefaction); so sound is a pressure wave.
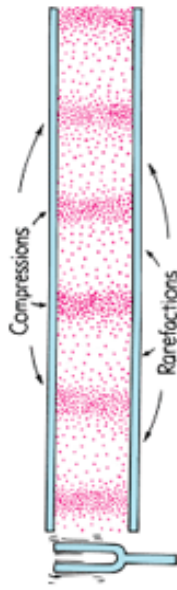
MAKING AND DETECTING SOUND WAVES

Sound can be made with a microphone (converts changes in air pressure to a changing potential difference) and detected with a loudspeaker (converts a changing potential difference to changes in air pressure).

Humans cannot hear ultrasound but many other animals can. Ultrasound is useful because it has a short wavelength so it can be focussed into a beam. When sound or ultrasound interacts with solids or liquids it makes the particles in those materials vibrate.

USES OF ULTRASOUND

- Shake dust or dirt from objects; ultrasonic cleaning (for jewellery / scientific equipment).
- Scans to check the health of unborn babies.
- Physiotherapy; Its energy is absorbed by soft tissue in the body, bringing relief from sprains and arthritis (painful joints).
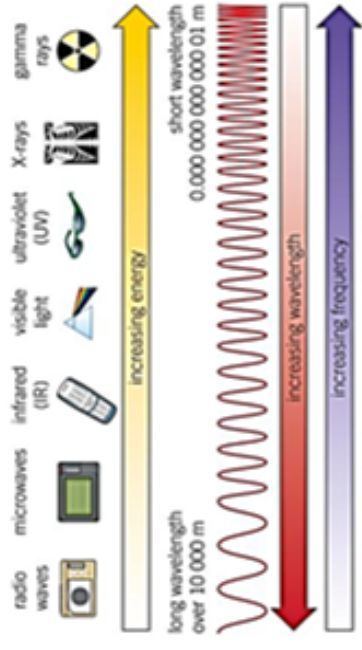
WAVE ENERGY AND ELECTRICITY

Waves push air through a turbine and generator to produce electricity.
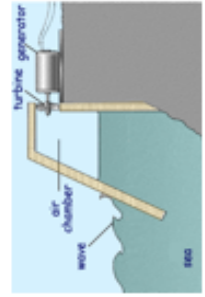
All waves transfer energy.
They are reflected, can be refracted, transmitted or absorbed when they travel through media. They can all superpose. They have different speeds.
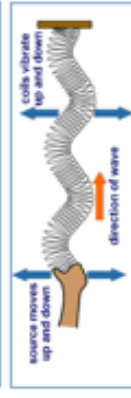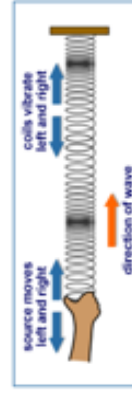
ELECTROMAGNETIC SPECTRUM

long wavelength over 10 000 m — short wavelength 0.000 000 000 000 01 m

increasing energy →
increasing wavelength
increasing frequency

wave	radio waves	microwaves	infrared	visible light	ultraviolet	X-rays	gamma rays
use	TV signals	mobile phones	heating, cooking	photography	detecting forgeries	seeing broken bones	killing cancer cells

RADIATION AND THE HUMAN BODY

- Only some EM waves emitted by the sun get through the atmosphere.
- Different waves have different effects on the body.
- Low frequency waves – have a heating effect.
- High frequency waves – can knock electrons out of atoms in living cells. This is called ionisation. If the atoms are in your DNA, it can lead to mutations and produce cancerous cells.
- UV radiation (not very penetrating) can cause skin cancer.
- X-rays and gamma rays (very penetrating) can cause cancer (but is blocked by the atmosphere).

In a longitudinal wave, particles move backwards and forwards in the same direction as the wave.

In a transverse wave, particles move up and down, at right angles to the direction of the wave.
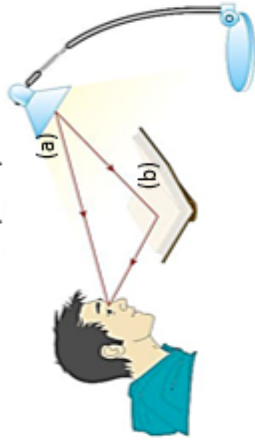

MODELLING WAVES

- Transverse and longitudinal waves can be modelled using a slinky; it shows the wave moves BUT the slinky does not.
- Ripples on the water can be used to model EM waves or sound; the wave moves BUT the water does not.

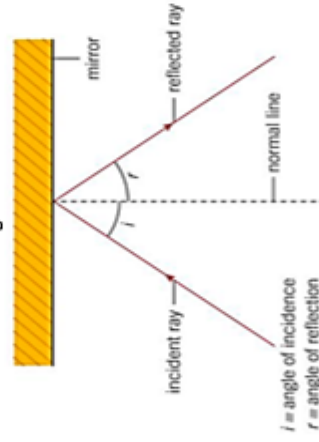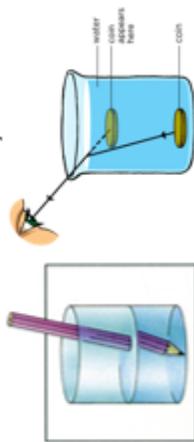| KEYWORD	DEFINITION
Compressions	Force squashing or pushing together, which changes the shape of the object.
Electromagnetic spectrum	The range of wavelengths of radiation produced by the Sun and other sources.
Gamma rays	Waves with the highest frequency in the electromagnetic spectrum.
Ionisation	The removal of an electron from an atom.
Longitudinal wave	A wave in which the direction of vibration is the same as that of the wave.
Loudspeaker	A device that uses an electromagnet to make a sound. It turns an electrical signal (changing potential difference) into a pressure wave of sound.
Microphone	Turns the pressure wave of a sound hitting it into an electrical signal (potential difference).
Pressure wave	An example is sound, which has repeating patterns of high-pressure and low-pressure regions.
Rarefactions	The part of a longitudinal wave where the air particles are spread out.
Superpose	When waves join together so that they add up or cancel out.
Transmission	Where waves travel through a medium rather than being absorbed or reflected.
Transverse wave	A wave in which the direction of vibration is perpendicular to that of the wave.
Ultrasound	Sound waves with frequencies higher than the human auditory range; >20 000 Hz.
Visible light	The band of frequencies of light that we can detect with our eyes.
Wave	Vibrations that transport energy from place to place without transporting matter.
X-rays	Waves of the electromagnetic spectrum used for producing images of bones and tissue.

Light Waves

- Light travels in straight lines.
- Seeing luminous objects (a); light travels directly to the eyes.
- Seeing non-luminous objects (b); light reflects off the book and into your eye.

Light can travel through gas (air), some liquids (water) and some solids (glass). It can also travel through a vacuum. Light travels as a wave at a speed of ~ 300 million m/s.

TYPES OF REFLECTION

▲ Reflection from a smooth surface (specular reflection).

▲ Reflection from a rough surface (diffuse reflection, or scattering).

CONVEX LENS: found in cameras, telescopes, glasses and contact lenses. They produce real images (camera) and virtual images (magnifying glass).
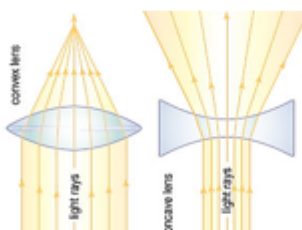
CONCAVE LENS: found in door spyholes. Only produce virtual images.

HOW DO WE SEE? The image is inverted as light travels in straight lines. But the brain flips the image so you see the image the right way up.

LIGHT AND COLOUR Objects look different colours as they absorb and reflect different light into the eyes.

▲ Your eye and brain perceive no light as black and all the frequencies of light as white.

▲ An apple reflects red light and absorbs the other colours.

TRANSPARENT, TRANSLUCENT & OPAQUE

ALL light passes through — Transparent

SOME light passes through — Translucent

NO light passes through — Opaque

convex lens / light rays

concave lens / light rays

Cornea
Once light reaches the cornea it is refracted and bent, as the cornea is denser than air.

Light rays
Light travels in a straight line through the air before passing through the cornea.

Retina
The focused light forms a complete picture of the scene on the retina at the back of the eye.

Internal lens
The lens inside the eye refracts the light further and then focuses it to help create a sharp image on the retina.

Your eye detects three primary colours: red, blue and green. Mixing two primary colours makes a secondary colour.

THE LAW OF REFLECTION: light is reflected at equal angles.

mirror / reflected ray / normal line / incident ray

i = angle of incidence
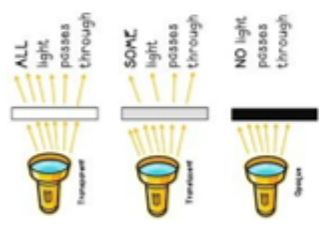r = angle of reflection

REFRACTION happens when light travels from one medium (material) to another. Refraction explains why the pencil appears to be bent in water or why the coin looks closer to the surface that it actually is.
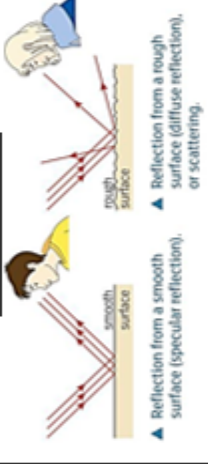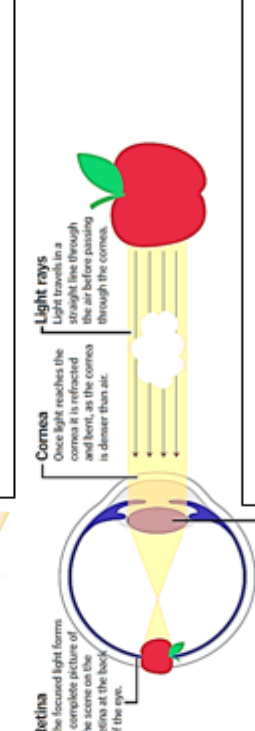
water / coin appears here / coin

KEYWORD	DEFINITION
Concave	A lens that is thinner in the middle and that spreads out light rays (diverging).
Convex	A lens that is thicker in the middle and that bends light rays towards each other (converging).
Diffuse reflection	Reflection from a rough surface.
Dispersion	The splitting up of a ray of light of mixed wavelengths by refraction into its components.
Eclipse	Appearance of the sun when light is blocked by the moon, or appearance of the moon when light is blocked by Earth.
Filter	A piece of material that allows some radiation (colours) through but absorbs the rest.
Image	The point from which rays if light entering the eye appear to have originated.
Incident ray	Incoming ray from a source of light.
Inverted	Upside down
Luminous	Object that gives out light.
Non-Luminous	Objects that produce no light.
Photoreceptor	A specialised cell (in the eye) that is sensitive to light.
Prism	A triangular shaped piece of glass used to produce a spectrum of light.
Reflected ray	The outgoing ray that has been reflected from a surface.
Reflection	The change in the direction of light when it hits a boundary and bounces back.
Refraction	Change in the direction of light going from one material into another.
Spectrum	A band of colours produced when light is spread out by a prism.
Specular reflection	Reflection from a smooth surface.
Virtual (image)	An image that cannot be focused onto a screen, unlike a real image which can be put on a screen.

Science